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

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Abstract

It has become increasingly common for adult children to live in their parents' home. This paper studies the causes and consequences of parental co-residence from the perspective of young adults using data from the Panel Study of Income Dynamics Transition to Adulthood Supplement. I employ event study methods and an instrumental variables approach based on state-level rental housing unaffordability and find three main results. First, event studies indicate that household finances are surprisingly disconnected from co-residence changes. Second, marriage and fertility are strongly associated with housing independence. Third, plausibly exogenous variation in rental housing unaffordability only modestly affects co-residence.

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, wealth, marriage, and parenthood are interrelated, focusing on whether co-residing with parents influences young adults' (YAs') net worth levels and family formation. Existing literature on parental co-residence has generally focused on understanding the factors

affecting 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 focus on 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 to document patterns around the transitions and highlight any asymmetries.

To estimate the causal effect of co-residence on wealth and expectations of family formation, I turn to an instrumental variables (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 state's median family income.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 with co-residence, but rarely both. This paper connects the two by using co-residence as a potential channel linking housing unaffordability to YAs' wealth and family formation expectations.

The event studies reveal no significant changes in net worth around co-residence moves. This differs from previous studies, which have documented wealth differences between co-residers and non-co-residers. 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.

Causal interpretations from the IV analyses 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 rental unaffordability is associated with co-residence, the instrument is likely capturing only a part of the broader mechanism.

This paper is related to the literature that studies the determinants of parental co-residence. Market conditions such as fewer job opportunities, low wages, and rising rental housing costs have all been shown to increase parental co-residence (Matsudaira 2016; Cooper and Luengo-Prado 2018). 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 lower job match quality among college graduates (Albanesi, Gihleb, and Zhang 2022). By co-residing, the YA can search longer for jobs, which can improve matches (Kaplan 2012). Working mothers can increase their labor supply due to grandparent childcare support (Liao and Paweenawat 2022; Compton and Pollak 2014; Arpino, Pronzato, and Tavares 2014). After a job displacement, Krolikowski, Zabek, and Coate (2020) find that earnings declined permanently the

further the individual lived away from home, but recovered fully for YAs living near their parents. However, another study by Chan, O'Regan, and You (2021) finds that YAs who return home tend to relocate to weaker labor markets. Housing market conditions also influences this residential decision: as early as the 1990s, higher relative house prices have been shown to significantly slow home-leaving, delay the formation of partnerships, and encourage returns to the parental home (Ermisch 1999). Acolin, Lin, and Wachter (2024) attribute a large share of the rise in co-residence since 2000 to falling housing affordability in the U.S. In this paper, I use rental housing unaffordability as a source of exogenous variation in parental co-residence to estimate the causal effects on wealth and expectations of family formation.

The literature also highlights the role of demographic characteristics in co-residence decisions. Dettling and Hsu (2018) find that indebtedness increases the flow into co-residence, and that the duration of time spent in the parental home is associated with low credit scores and delinquency. In urban China, Rosenzweig and Zhang (2014) find that after controlling for income, intergenerational co-residence is associated with greater savings among younger adults. Newman, Holupka, and Ross (2018) show 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. Parental and marital status of the YA are also 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. A decline in marriage rates among immigrants receiving Deferred Action for Childhood Arrivals (DACA) was found by Gihleb, Giuntella, and Lonsky (2023), but no clear effects on fertility were observed. The paper shows that DACA-eligible individuals 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. International research shows similar connections. In Taiwan, working women living with their husbands' parents tend 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 leads 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 analyze the patterns of wealth and family formation around transitions into and out of the parental home.

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 Strategies

To look at the different outcomes between a mover and non-mover around a co-residence change, 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 YA and t denotes time measured in years. The outcomes of interest Y_{it} are the transformed inverse hyperbolic sine net worth of the YA,[1] marital status, and the total number of kids. $Move_{i,t-t_i^*=k}$ is an indicator for whether the YA has moved by event time k and the coefficients of interest are τ_k. The reference year is set to the survey (i.e., two years) prior to the YA changing their co-residence status. Individual and year fixed effects are included to control for time-invariant individual characteristics and other unobserved variables that affect all observations within a specific year, respectively.

Recent papers on dynamic difference-in-difference (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, if treatment timing differs, it 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. I also use the CS and stacked DID methods to calculate treatment effects and compare them to the typical TWFE

1. 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.

event study estimates from Equation (1). Although my analysis is descriptive, I implement these methods developed for staggered adoption settings to ensure cleaner comparisons and more interpretable patterns in outcome dynamics around co-residence transitions.

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, making 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 violated. Nonetheless, these event studies are informative as they provide insights into why people may choose to move.

In addition to the event studies, I conducted an IV analysis. The goal is to estimate the causal effect of co-residence on similar outcomes to those studied in 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 net worth and the YA's expectations of the likelihood and age at the start of several family formation events. $Cores_{it}$ is a dummy variable indicating 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.[2] 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 in year t.

The cost of housing and one's financial situation are two important factors in the decision to live in or outside of the parental home. I use rental housing costs rather than home prices because those moving out for the first time are more likely to rent than purchase a house. Additionally, 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. YAs face a higher risk of co-residence if they experience high rental housing costs, low income,

2. State fixed effects are not used due to collinearity issues, as some YAs never move across states. In Section 5, I run a subsample analysis restricted to YAs who change states and include state fixed effects.

or both. These conditions contribute to housing unaffordability. Here, rental unaffordability is defined as:

$$UnAfford_{st} = log\left(\frac{FairMarketRent_{st}}{medianIncome_{st}}\right), \tag{4}$$

the log of the ratio of the Fair Market Rent, or 40th percentile rents, to the median family income in state s and year t. The instrument I use takes advantage of the differences in state unaffordability to regional unaffordability changes (see Appendix Figure A.1). 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. The regression includes state and year fixed effects to control for time-invariant state differences and national trends, respectively. To construct the instrument used in Equation (3), I multiply $\widehat{\rho_s}$ by the actual unaffordability in that region and year: $\widetilde{UnAfford}_{st} = \widehat{\rho_s} UnAfford_{-srt}$. This construction is similar to the one used by Guren et al. (2021).

A valid instrument satisfies the relevance and exogeneity conditions. 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 exogeneity, or the exclusion restriction, which states that the instrument only affects the outcomes 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 directly.

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 to 2004, while the instrument is constructed using data from 2005 to 2015. This approach ensures that the instrument reflects only 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 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 participants 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 to 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.[3] 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?".[4] 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 the YA is under 18 years old, co-residence status is unknown, or last year's income or state of residence is missing.

For the event study analysis, I further drop observations with more than a two-year gap. For example, 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 and 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

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

4. 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	22.553	22.106	0.448
	(4.163)	(2.164)	
Male	0.515	0.345	0.170*
White	0.658	0.641	0.017
Employed	0.677	0.675	0.002
Married	0.265	0.213	0.052
Number of Kids	0.638	0.532	0.107
	(1.479)	(1.025)	
Education			
Less than HS	0.310	0.099	0.211**
HS	0.283	0.319	-0.036
Some College	0.234	0.346	-0.112
Associate's	0.031	0.045	-0.014
Bachelor's	0.103	0.152	-0.049
Master's+	0.038	0.039	-0.000
Last Year's Income ($1k)	23.550	14.039	9.511*
	(40.877)	(12.817)	
Net Worth ($1k)	3.068	1.997	1.070
	(12.983)	(4.569)	
With Student Loans	-3.691	-3.444	-0.246
	(29.761)	(12.125)	
Number of YAs	640	389	
Total Observations	2,609	1,093	

	Movers	Non-Movers	Diff
Panel B:	**Moved Out**	**Always Co-Resided**	
Age	19.816	19.820	-0.004
	(2.675)	(1.707)	
Male	0.554	0.582	-0.028
White	0.641	0.538	0.103
Employed	0.659	0.651	0.008
Married	0.063	0.020	0.043
Number of Kids	0.095	0.107	-0.012
	(0.507)	(0.284)	
Education			
Less than HS	0.255	0.270	-0.015
HS	0.202	0.289	-0.087
Some College	0.459	0.351	0.109*
Associate's	0.024	0.035	-0.010
Bachelor's	0.059	0.049	0.010
Master's+	0.000	0.006	-0.006
Last Year's Income ($1k)	7.931	7.986	-0.054
	(14.707)	(8.010)	
Net Worth ($1k)	4.491	2.528	1.963
	(16.568)	(7.692)	
With Student Loans	1.240	0.614	0.627
	(19.444)	(9.773)	
Number of YAs	1,789	897	
Total Observations	6,850	2,731	

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 deviations are in parentheses and adjusted for sample design. Source: PSID Transition to Adulthood Supplement (2005 - 2019). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

the start of their observation. Looking at Panel A, at baseline, YAs who move back in with their parents are more likely to be male than YAs who always lived independently (i.e., children living apart from their

parents). They are also more likely to have less than a high school degree and to have higher income in the prior year, with these differences statistically significant at the 5% and 10% levels, respectively. No other statistically significant differences are detected between the two groups. In Panel B, I compare YAs who move out with the YAs who are always co-residing. At baseline, the two groups are similar, with differences generally following the expected pattern despite not being statistically significant; YAs who move out are more likely to be white, employed, and married at baseline. In Appendix Table A.1, I break down the movers into three groups–YAs who only moved in, only moved out, and both moved in and out, and compare their baseline demographic characteristics.

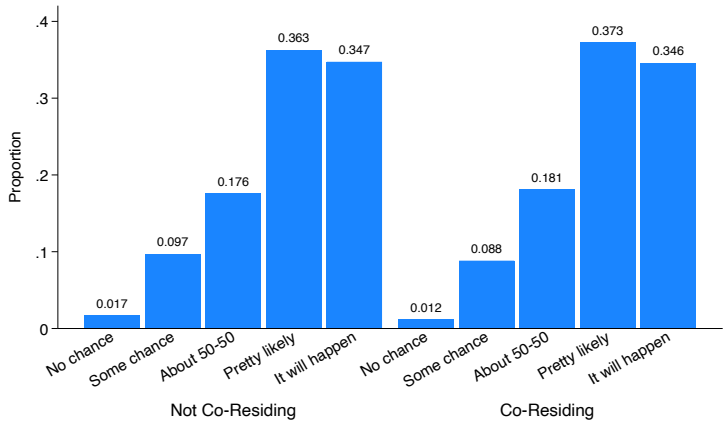
The 2005 to 2015 TAS surveys include questions about several family formation milestones. YAs are asked to state their ideal total number of children and to rate their chances of marriage, a long-term (LT) committed relationship or commitment ceremony, and having children.[5] Possible responses for the 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 believe 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 analysis consists of never-married YAs with no children and 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 1 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. The difference between co-residing and non-co-residing YAs is 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, they are also more optimistic about forming a LT relationship. Regardless of co-residence status, under 40% of YAs believe that it is likely or certain that they will enter a LT committed relationship if they do not get married.

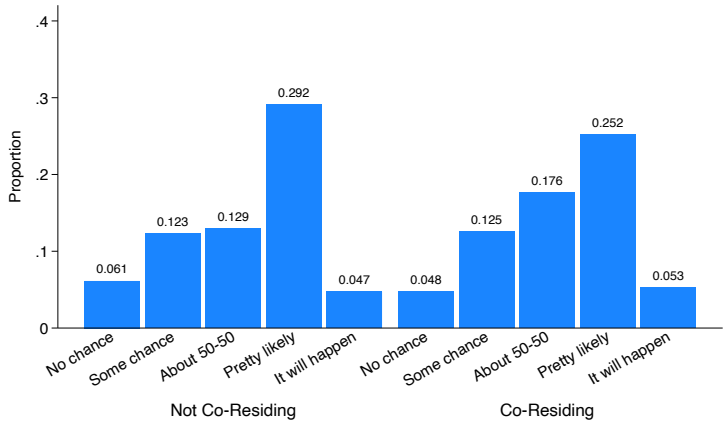
Figure 2 plots the average expected age at which YAs anticipate marriage, a LT relationship to begin, and at first childbirth, along with their ideal total number of children, over time. Co-residing YAs consistently anticipate forming their own families earlier than YAs living independently. The mean 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 the expected age at first marriage for both groups, but is still gradually rising over the

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

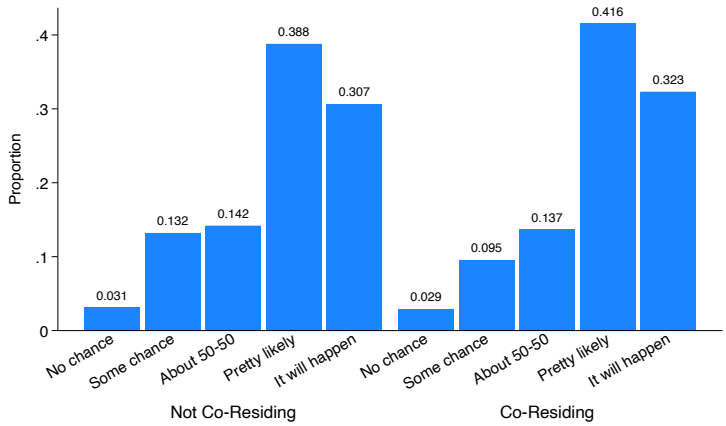
Figure 1: Responses of Likelihood Items by Co-Residence Status



(a) Likelihood of Marriage



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



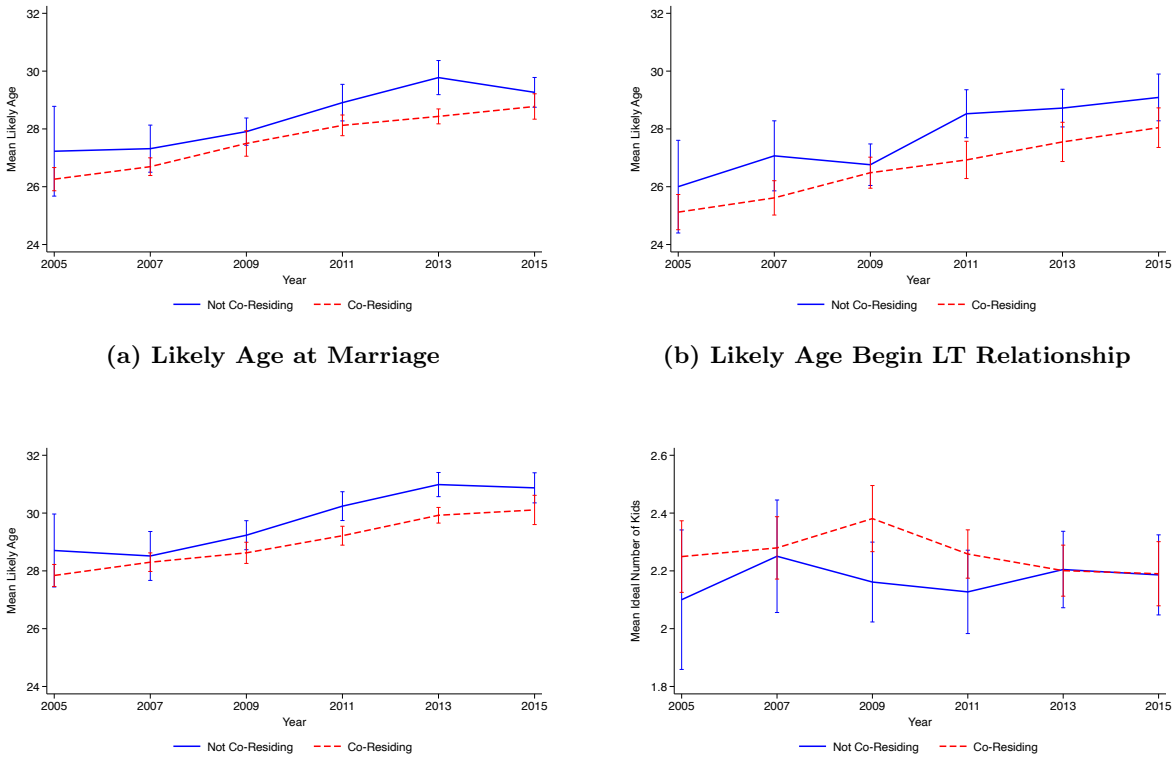
(c) Likelihood of Kids

Note: These graphs show the proportion of responses to each likelihood question by co-residence group. The sample includes YAs who are not married, not parents, and not currently in a LT relationship. The likelihood of a LT relationship question was 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).

sample period. The mean expected age of becoming parents ranges from 27 to 31 years old, and increases over time. Expected family size is modest, with the overall average ideal number of children below three for both 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 YAs who co-resided at some point during the sample period with YAs who were never observed to co-reside.

Figure 2: 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 average expected 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).

The TAS employs a complex survey design and is subject to panel attrition; therefore, sample weights are 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 housing costs and family income for each state over time. It is difficult to find yearly state data on median rents prior to 2001, so the U.S. Department of Housing and Urban Development's (HUD's) 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.[6] To calculate the average FMR for each state, I multiply the monthly FMR for zero- to four-bedroom rentals by 12 and then average the resulting annual values. 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 an underestimate of the true rent-to-income ratio, as the FMRs are only 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.

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

6. 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.

and the control group for those who move out are the YAs who continue to co-reside. For each combination of outcome and move event, I estimate Equation (1) using three different estimators: the standard TWFE, the stacked approach, and the CS estimator.[7] In this paper, the different estimators produce similar treatment effects.

4.1.1 Net Worth

I start by looking at the differences in net worth 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 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.

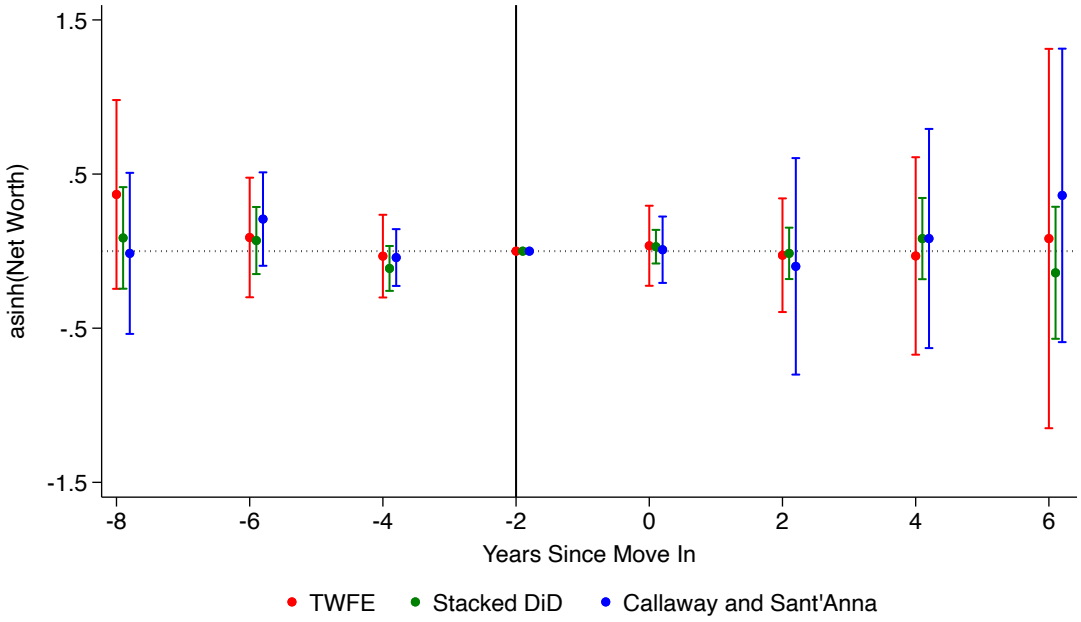
Figure 3 presents the estimates for net worth. Regardless of the type of move made, there are no significant differences in net worth between the YAs who moved and the YAs whose co-residence status did not change. The results for all three estimators are similar, and rule out differences smaller than -1.4 or larger than 1.4 on the inverse hyperbolic sine scale.[8] The event studies that look separately at total assets, debt, and net worth with student loans are displayed in Appendix Figures A.2 to A.5.

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, my 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 and move-in dates may not align with survey years. Additionally, the effects of co-residence may not appear immediately as financial recovery may be a longer-term outcome. Selection is also an issue 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

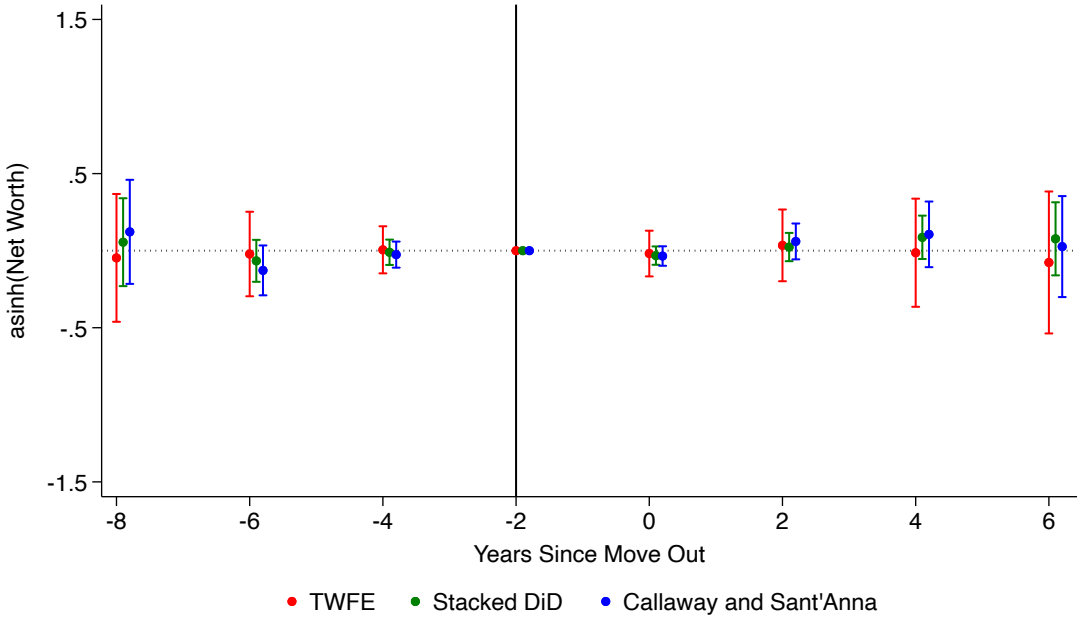
7. The TAS is not a balanced panel, but the CS estimator does not require a strongly balanced panel to apply the panel estimators. However, when it calculates each treatment effect, only YAs with observations at the move and one period after are used. The estimator will assume cross-sectional data if 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.

8. 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.

Figure 3: Net Worth Event Studies



(a) Move In



(b) Move Out

Note: The figure shows event study estimates of net worth (in thousands of dollars) transformed using the inverse hyperbolic sine. Estimates are shown for the TWFE, Callaway and Sant'Anna (2021), and stacked DiD methods. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

outcomes shift around these co-residence transitions.

4.1.2 Family Formation

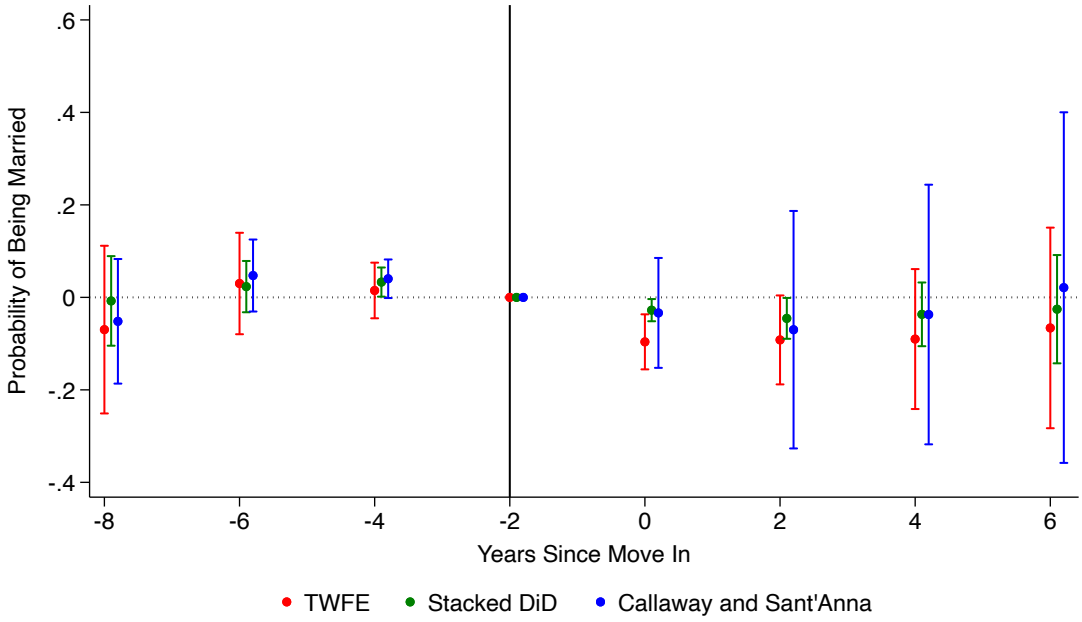
As YAs grow older, they may want to leave their parents' home to start their own families. The hypothesis is that YAs that are not married or a parent themselves are more likely to co-reside. Marriage may prompt a preference for independent living as couples seek to establish their own households. Similarly,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

I begin by examining the marital status of the YA. Marriage is a dummy variable with 1 indicating currently married and 0 otherwise. Panel (b) of Figure 4 shows significant differences for all estimators in the probability of being married between movers and non-movers immediately after the YA is observed to move out and in the years after. The coefficients range from around 5 percentage points in the year of the move to approximately 30 percentage points six years later. This supports the hypothesis that YAs would prefer to live separately with their partner after marriage. For a move-in, in the year of the move, 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. One possible explanation for this difference is that YAs are getting divorced or separating. Figure 5 presents the estimation results using a dummy dependent variable for currently divorced or separated. The results do not suggest that YAs are moving back home following a divorce or separation. Interestingly, when we examine the results for a move out, the stacked DiD and CS estimates find that YAs who moved are more likely to be divorced or separated two and four years after the move compared to YAs who continue to live in the family home. This may reflect the fact that those who move out are more likely to be married, and thus, more likely to be at risk of a divorce or separation in the subsequent years.

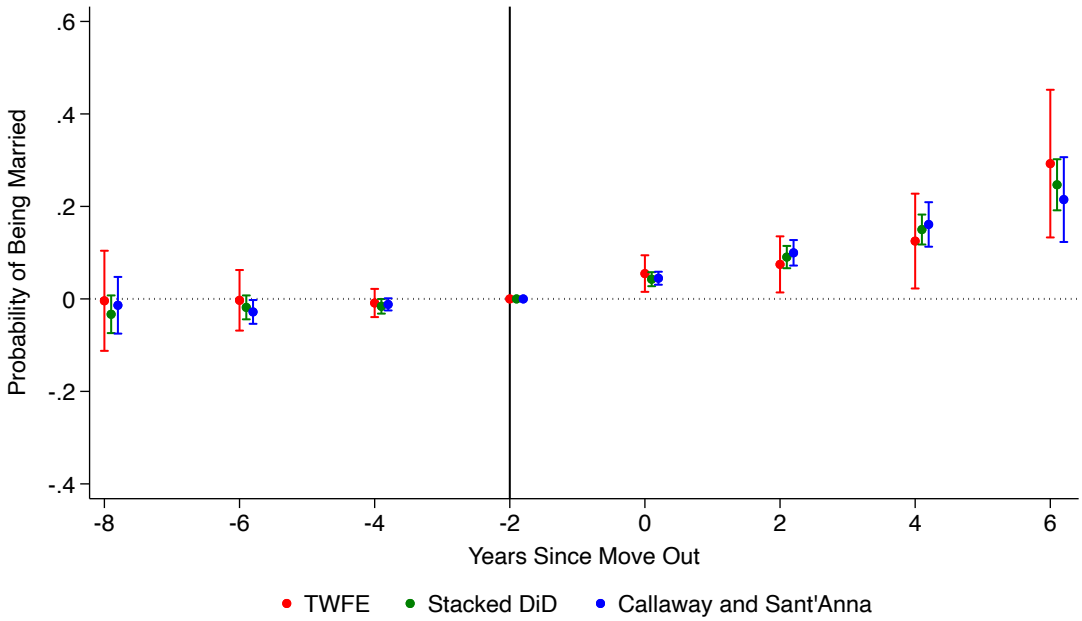
Next, I look at the total number of children a YA has. Figure 6(a) indicates a pre-trend with movers having more children than non-movers. After the move, the TWFE estimates suggest that YAs who return to the family home have fewer children in the first four years following the move. The stacked DiD estimate also indicates a negative difference two years after the move. For a move out, all three estimators suggest that movers have statistically significantly more children than non-movers. Compared to the survey prior to the move, the difference is around 0.1 in the year of the move and then increases to about 0.4 six years later.

I also check for gender differences in the probability of marriage, divorce or separation, and the total number of children. The event studies for marriage and divorce or separation show no significant differences between males and females for either type of move, and the results are presented in the appendix. The move-out event studies for the total number of children also suggest no differences between the two groups.

Figure 4: Married Event Studies



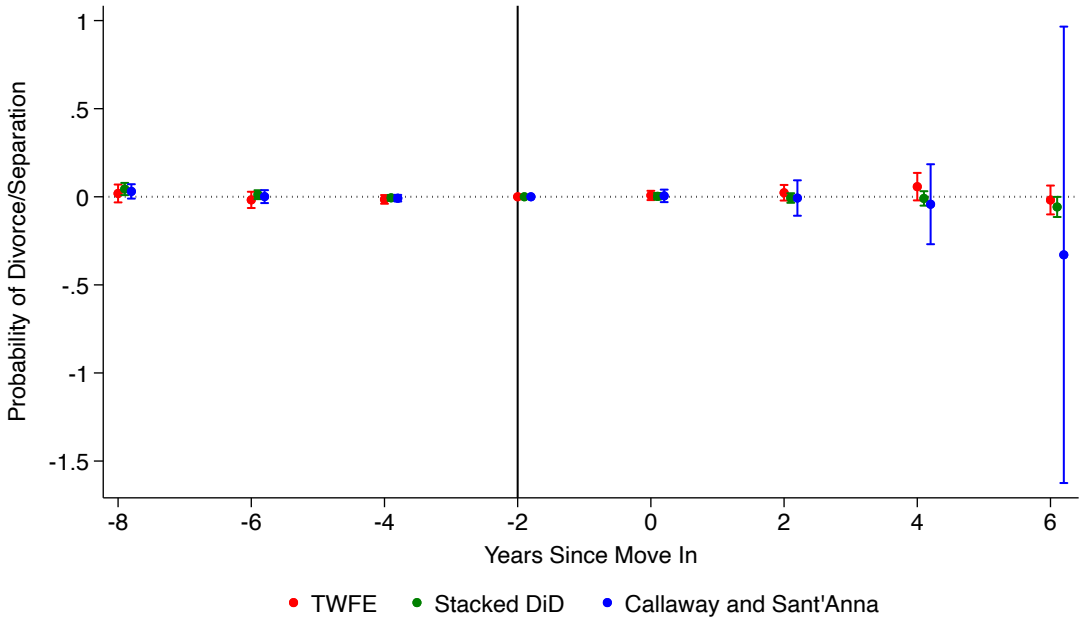
(a) Move In



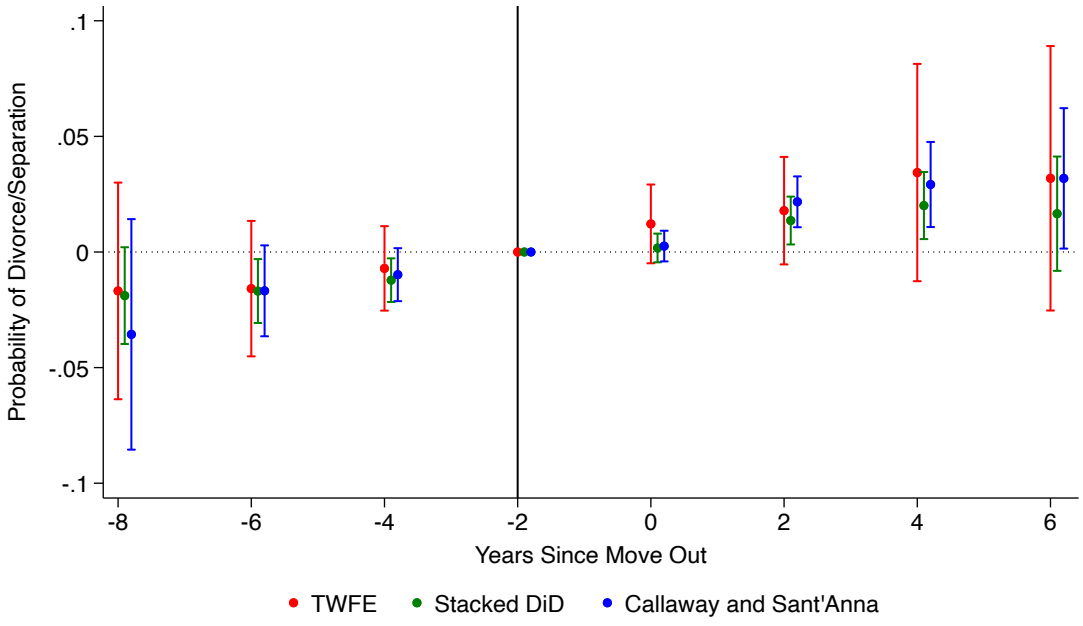
(b) Move Out

Note: The figure displays event study estimates of being married using the TWFE, Callaway and Sant'Anna (2021), and stacked DiD. Married is a dummy variable with 1 indicating that the YA is married and 0 otherwise. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

Figure 5: Divorce/Separation Event Studies



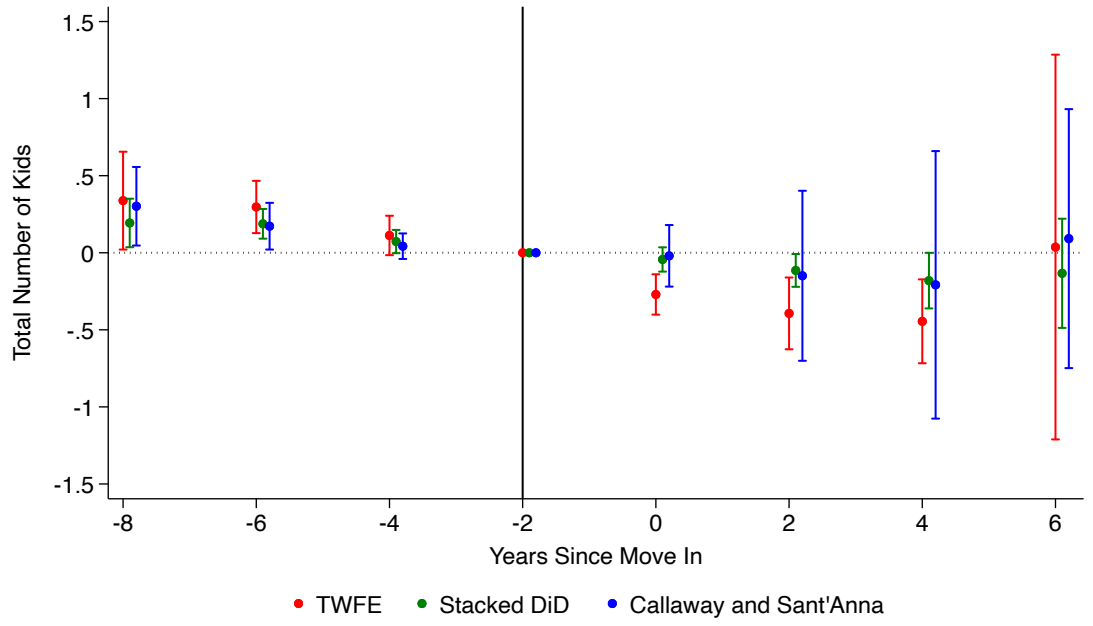
(a) Move In



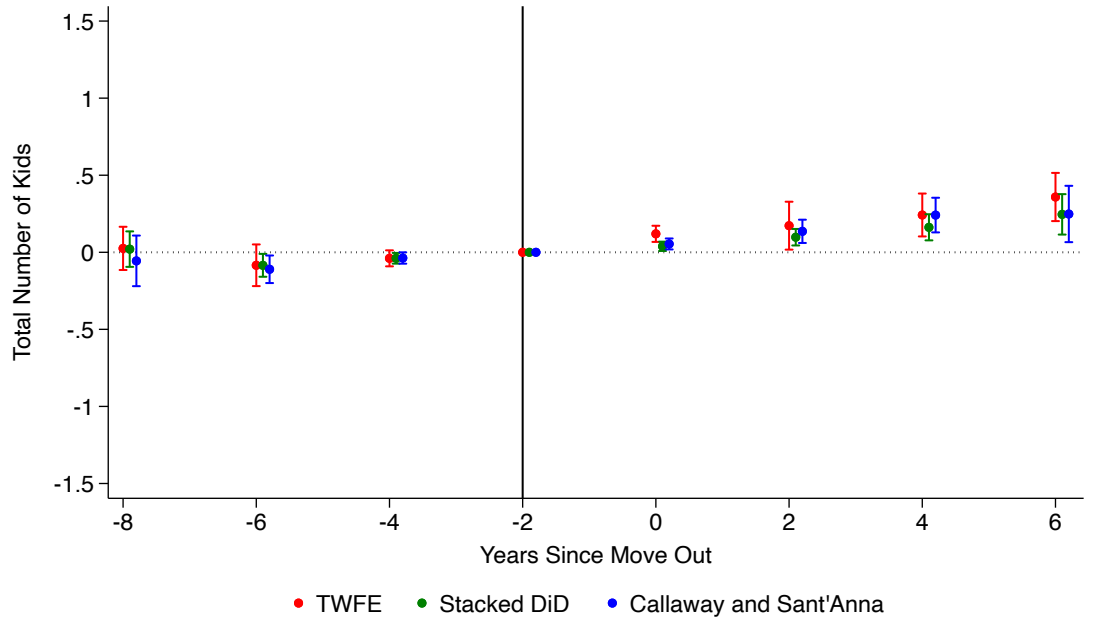
(b) Move Out

Note: The figure displays event study estimates for divorce or separation using the TWFE, Callaway and Sant'Anna (2021), and stacked DiD. 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 (2005 - 2019).

Figure 6: Total Number of Kids Event Studies



(a) Move In



(b) Move Out

The figure displays event study estimates of total number of children using the TWFE, Callaway and Sant'Anna (2021), and stacked DiD. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

However, for a move-in, there is a pre-trend for both genders. For females, movers have more children than non-movers, while males who eventually move back home have fewer children than those who do not. These differences converge to zero as the year of the move approaches. The coefficients are statistically significant for females in all pre-treatment years but only significant eight years prior to the move for males. The pattern for females is consistent with the idea that mothers return home for childcare support. For men, it may reflect the fact that they have not yet established their own families.

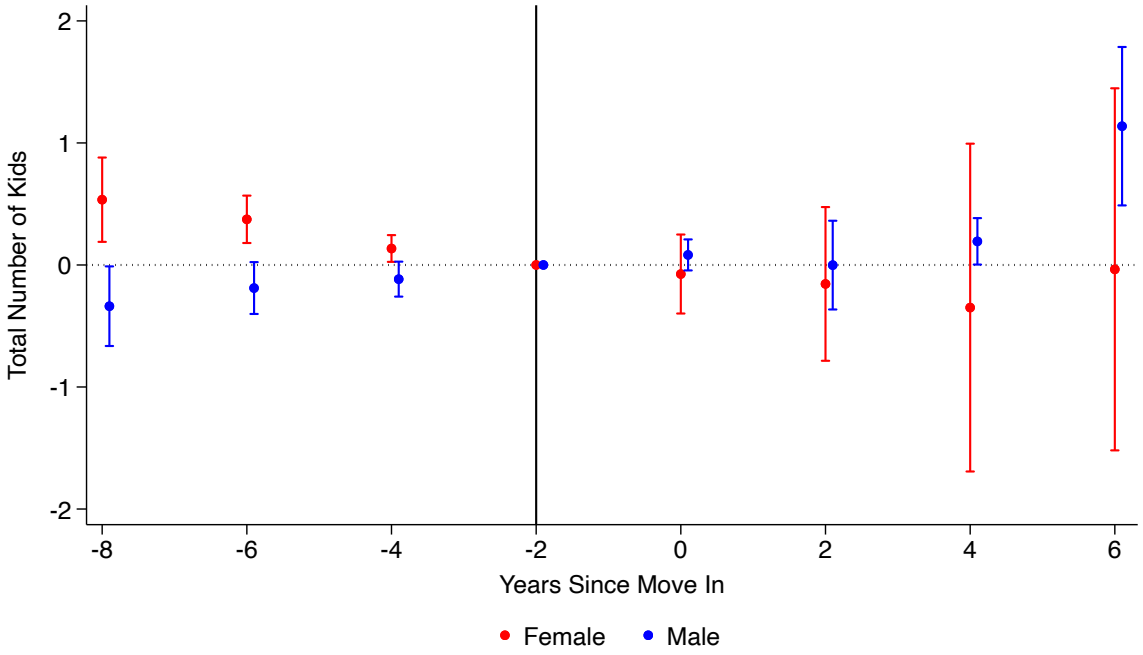
In general, the urge to move out is stronger than the urge to move back home. The significant patterns observed for marriage and the total number of children with a move-out are expected as YAs are choosing when they would like to establish independent households, which prior research supports. YAs who start forming their own families are more likely to live independently than YAs who are still single with no children. The literature has also documented that co-residence is associated with delayed family formation, which my analysis cannot determine. Since co-residence is not a shock, it is difficult to determine whether individuals who return to their parents' home have already delayed these milestones prior to the transition, or whether co-residence reflects delays in family formation rather than causing them. Furthermore, family formation and financial status are jointly determined, making the direction of causality unclear. To examine whether co-residence itself influences these outcomes, I turn to the IV approach.

4.2 IV

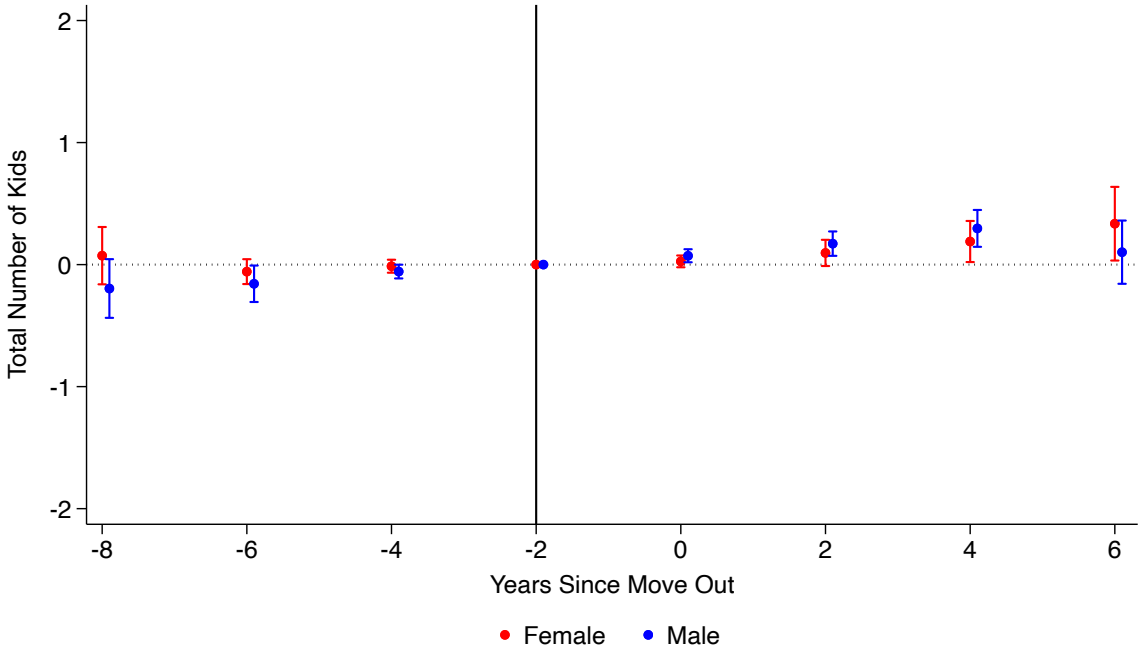
The instrument used for co-residence is the predicted rental unaffordability of state s in the corresponding year. Figure 8 presents the estimated coefficients used to calculate the instrument ($\widehat{\rho_s}$ of Equation (5)). There is notable regional variation in states' responsiveness to regional unaffordability shocks. States in the Midwest and the South show higher estimated sensitivities, while the Northeast and the West reveal weaker or even inverse relationships. States with negative estimated coefficients (e.g., California and New York) suggest that historically, their housing unaffordability moves in the opposite direction of the regional unaffordability trend. This may reflect stricter housing policies and increase out-migration towards the more affordable nearby states.

Figure 9 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 -1 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. The fitted line indicates a positive relationship but there is substantial scatter of the data, suggesting that the instrument may be weak. With

Figure 7: Total Number of Kids Event Studies by Gender



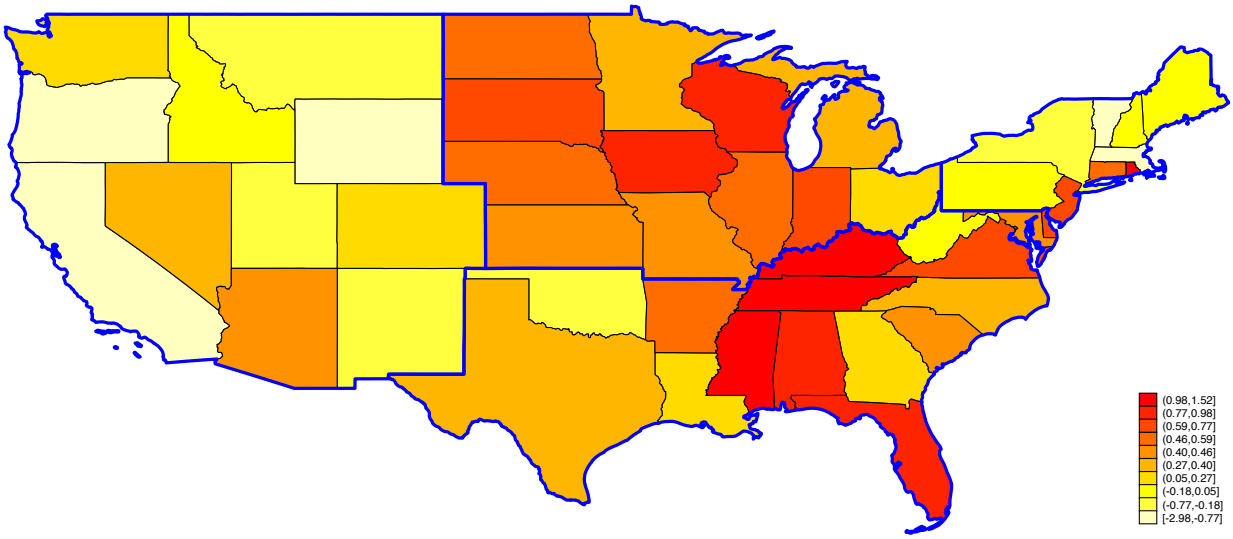
(a) Move In



(b) Move Out

Note: The figure displays the Callaway and Sant'Anna (2021) estimates for total number of kids by gender. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

Figure 8: State Sensitivity Estimates



Note: The graph presents the heat map for $\hat{\rho_s}$, the estimated state responsiveness to regional housing cost pressures.

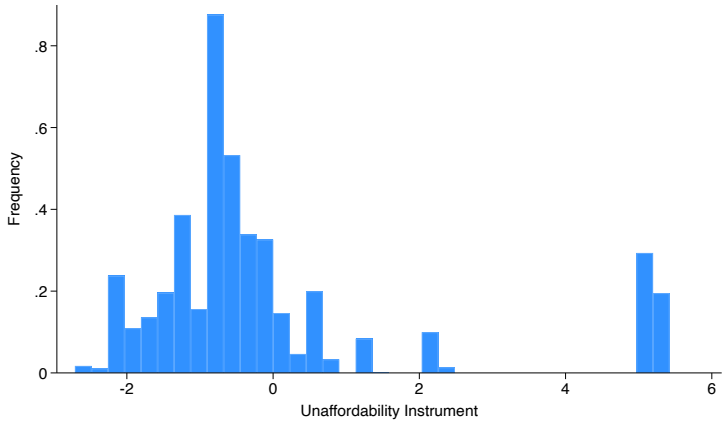
weak instruments, estimates are biased towards OLS and incorrect standard errors and confidence intervals are produced. In the last panel, the cumulative distribution function (CDF) of the instrument by YA's co-residence status is plotted. The two CDFs lie almost directly on top of each other, another sign that the instrument may have low predictive power for co-residence.

4.2.1 Net Worth

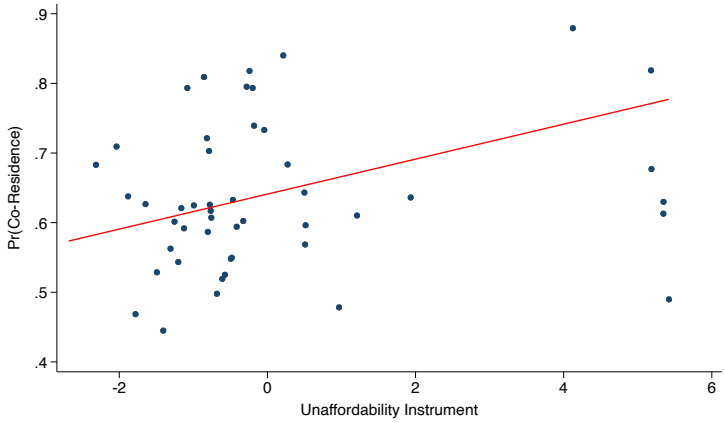
To begin, I look at how co-residence affects the YAs' net worth. From the event studies, selection into and out of co-residence based on net worth is not strong. Table 2 presents the net worth results from the IV analysis. Looking first at the OLS estimates in columns (3) and (6), YAs who co-reside have a higher net worth compared to YAs living independently. The coefficient is statistically significant at the 10% level when student loans are excluded and at the 1% level when student loans are included 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. This positive association is consistent with the hypothesis that co-residence may allow YAs to save or pay down debt more quickly, although selection into co-residence may bias these estimates.

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 3.402, which is well below conventional thresholds, indicating a weak instrument. This suggests that the unaffordability instrument is not highly correlated with co-residence and any results

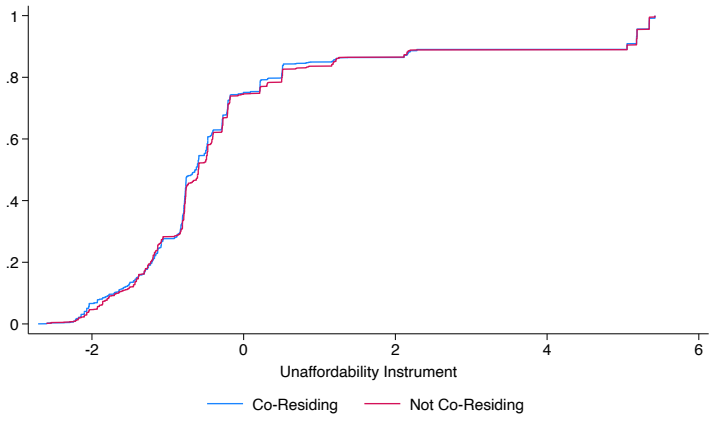
Figure 9: Unaffordability Instrument



(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 PSU. Panel (c) plots the CDF of the instrument by co-residence status.

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)		4.736	4.736	4.736	-2.960	-2.960	-2.960
Mean of Dep. Var. (asinh)		1.135	1.135	1.135	-0.198	-0.198	-0.198
F	3.402						
N	5004	5004	5004	5004	5004	5004	5004

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

found 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 inferences. In this paper, I report the Montiel Olea and Plueger (2013) effective F-statistic and construct the Anderson-Rubin (1949) confidence interval (AR CI), both of which remain valid in the presence of a weak first stage. I also report the p-value corresponding to the AR test.

The effective F-statistic 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 follows a χ^2 distribution and is constructed by inverting a test robust to weak

instruments. 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 we cannot conclude that the parameter is identified– essentially, that the instrument is weak.

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

	asinh(Net Worth)	
Student Loans	Without	With
Co-Residence	2.736	4.141
	(2.171)	(3.063)
Eff. F	41.447	41.447
AR p-value	0.107	0.137
AR CI	(-∞,∞)	(-∞,∞)
N	5004	5004

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 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 ran 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 large, 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. The IV and weak-IV inference results for total assets and debt are included in the appendix.

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 to 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

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	-0.008			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		3.402				8.554				3.394		
N	5004	5004	5004	5004	3275	3275	3275	3275	5001	5001	5001	5001

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	0.100			-2.209	0.201			-1.650	0.212			0.676
	(0.196)			(4.001)	(0.315)			(3.609)	(0.149)			(3.174)
Mean of Dep. Var.	28.106		28.106	28.106	27.194		27.194	27.194	29.451		29.451	29.451
F		4.227				6.418				1.829		
N	4871	4871	4871	4871	2949	2949	2949	2949	4794	4794	4794	4794

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

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 for the OLS and IV estimates. 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 the 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 and is statistically significant at the 1% level. However, the corresponding F-statistic remains small. Respondents are also asked about their ideal total 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. The results continue to suggest a weak first stage.

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. Table 6 presents the estimation results for these variables. 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 a weak instrument.

Table 7: Weak-IV Inference for Expected Age

	Marriage	LT Relationship	First Child
Co-Residence	-2.209	-1.650	0.676
	(3.774)	(3.556)	(3.240)
Eff. F	53.030	68.237	26.018
AR p-value	0.487	0.603	0.843
AR CI	(-∞,5.114]	(-∞,4.685]	(-∞,∞)
N	4871	2949	4794

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 (columns (2) and (3) of Table 7). However, the AR p-values remain large. The corresponding AR CIs are bounded on one side and include zero, therefore we cannot reject the null that the true coefficient is zero. For the age at first child, the effective F-statistic falls below the critical value of 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. The first stages consistently indicate that the rental unaffordability estimate is a weak instrument for parental co-residence.

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. To begin, different subsamples are examined to evaluate whether rental unaffordability has uneven effects. Then, the instrument construction is adjusted to check whether the weak instrument concern persists.

First, the sample is restricted 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. The sample size decreases substantially, from 5,004 to 1,028 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 continue to include the entire real line. This finding reinforces weak identification concerns, although power is weak when limiting the analysis to only YAs who resided in multiple states.

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 smaller than the 5% critical value and the AR CIs are the real line. A similar pattern is observed for men, except for the likelihood of a LT relationship. For this outcome, the first stage and reduced form coefficients are statistically significant at the 10% level. However, the AR CI remains unbounded despite a statistically 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 effective F-statistic is generally larger for the non-white group, but concerns about weak identification remain. Across both subsamples, the AR CIs are unbounded.

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, 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 and include zero.

The main regressions are also re-estimated without individual fixed effects. Fixed effects absorb unobserved time-invariant individual characteristics and focus the analysis on changes within an individual rather than between different YAs. 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 CIs continue to cover the real line. When switching to state fixed effects, the effective F-statistics are all above 140, and the AR CIs tighten and no longer span the real line, but they remain wide and generally include zero. Interestingly, the first stage co-residence coefficients are negative, which suggests 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 and the results are presented in Table 8. The coefficient on unaffordability in column 3 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 suggests that co-residing increases the likelihood that a YA believes they will get married in the future by 30.5 percentage points. However, this result should be interpreted with caution as the sign of the first stage coefficient does not align with our assumptions.

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 a looser housing market (i.e., higher vacancy rates or 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:

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

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

	OLS	FS	RF	IV
Unaffordability		-0.709***	-0.216**	
		(0.241)	(0.107)	
Co-Residence	0.004			0.305**
	(0.012)			(0.150)
Mean of Dep. Var.	0.736		0.736	0.736
Eff. F		201.830		
AR p-value		0.032		
AR CI		[0.036,0.782]		
N	5001	5001	5001	5001

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 clustered at the strata and PSU level. 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 region/state and year fixed effects. Sources: PSID Transition to Adulthood Supplement (2005 - 2015). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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

Including these additional controls weakens the instrument substantially. Effective F-statistics are 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.

I then focus on changes in unaffordability rather than on its levels. It is plausible that individuals are more responsive to shocks in unaffordability than to the overall level. I estimate the following equation:

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

and construct the instrument using the same procedure as the main analysis, but applied to differenced data. The results are consistent with the level-based specification: the effective F-statistics are generally above the 5% critical value, but AR CIs remain wide and include zero. This finding is unsurprising, as unaffordability is relatively flat within regions and moves similarly across the country (see Figure A.1).

Finally, FMR rates are replaced 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:

$$UnAfford_{st} = log\left(\frac{HousePriceIndex_{st}}{medianIncome_{st}}\right) \tag{8}$$

which captures the growth in state-level housing prices relative to state-level 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. The results continue to 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. This finding does 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 worth accumulation and their actual and expected family formation outcomes. Using 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 between movers and non-movers as YAs move back into or out of their parent's home, while generally ruling out differences smaller than -1.4 and larger than 1.4 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 co-residence. Gender differences in fertility emerge in the pre-trends of a move-out event, with female (male) movers having more (fewer) children than non-movers. When examining divorce or separation, two of the estimation methods find a positive and statistically significant difference two and four years after the move out of the parental home.

I then use an IV analysis to estimate causal effects, using predicted state-level rental unaffordability as an instrument for co-residence. However, these estimates should be interpreted with caution. Across all outcomes, the instrument raises weak instrument concerns. 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.

With parental co-residence becoming an increasingly common residential choice, it is important to understand how it helps (or hinders) YAs' ability to live independently and establish their own households. 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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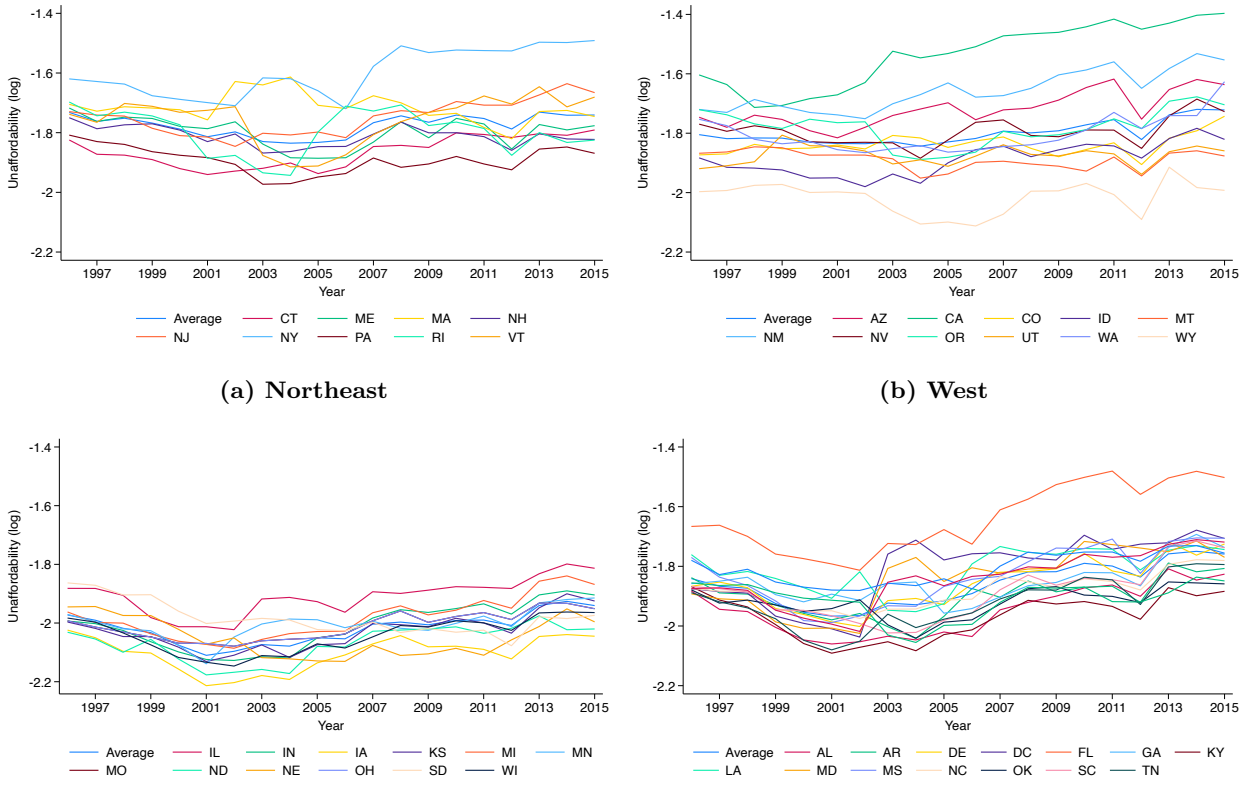
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Appendix

Figure A.1: State Rental Unaffordability, by Region



(a) Northeast **(b) West**

(c) Midwest **(d) South**

The figures show average state rental unaffordability (in logs) from 1997 to 2015, by region. Sources: 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).

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

	Only Moved In	Only Moved Out	Both In and Out
Age	22.596	19.817	18.761
	(2.049)	(2.289)	(14.134)
Male	0.515	0.554	0.492
White	0.658	0.641	0.697
Employed	0.679	0.659	0.574
Married	0.267	0.064	0.041
Number of Kids	0.644	0.095	0.153
	(0.738)	(0.433)	(7.290)
Education			
Less than HS	0.309	0.255	0.432
HS	0.281	0.201	0.526
Some College	0.236	0.460	0.033
Associate's	0.031	0.024	0.009
Bachelor's	0.104	0.059	0.000
Master's+	0.039	0.000	0.000
Last Year's Income ($1k)	23.722	7.931	8.169
	(20.395)	(12.581)	(143.487)
Net Worth ($1k)	3.071	4.494	2.802
	(6.453)	(14.176)	(124.881)
With Student Loans	-3.740	1.241	0.747
	(14.864)	(16.635)	(160.302)
Number of YAs	157	1,306	483
Total Observations	456	4,697	2,153

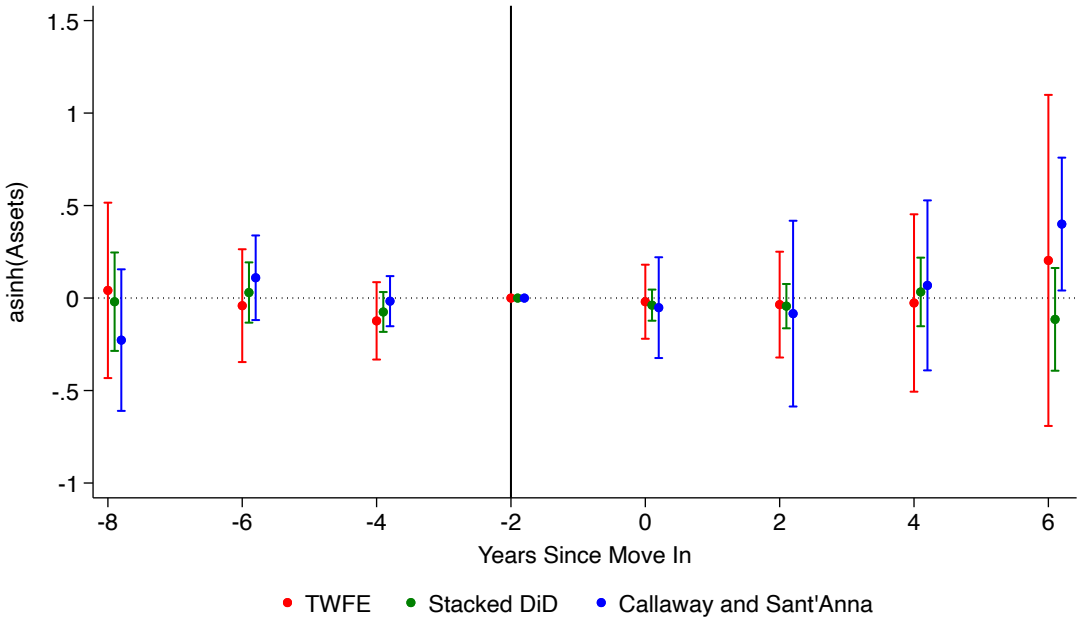
Note: Statistics are displayed for the event study sample at the baseline. Last year's income and net worth are adjusted to 2015 dollar units. Estimates are weighted and standard deviations are in parentheses and adjusted for sample design. Large standard errors occur from specification that strata with one sampling unit are centered at the grand mean. Source: PSID Transition to Adulthood Supplement (2005 - 2019). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: YA Demographic Characteristics for IV Sample

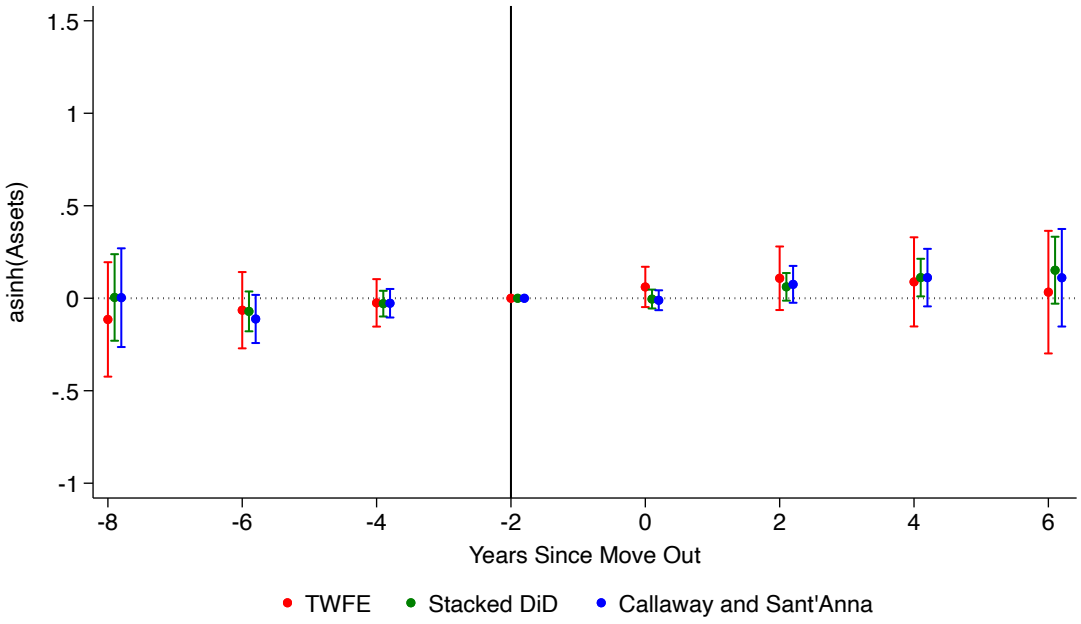
	Co-Resided	Never Co-Resided	Diff
Age	18.759	20.049	-1.290***
	(0.909)	(1.364)	
Male	0.544	0.446	0.097
White	0.700	0.849	-0.149***
Employed	0.617	0.678	-0.061
Education			
Less than HS	0.320	0.185	0.134***
HS	0.648	0.712	-0.064
Some College	0.018	0.042	-0.024
Associate's	0.012	0.036	-0.024
Bachelor's	0.002	0.025	-0.023
Master's+	0.001	0.000	0.001
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	0.543	-2.075	2.618
	(9.531)	(16.186)	
Number of YAs	1,541	102	
Total Observations	4,720	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 deviations 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.2: Assets Event Studies



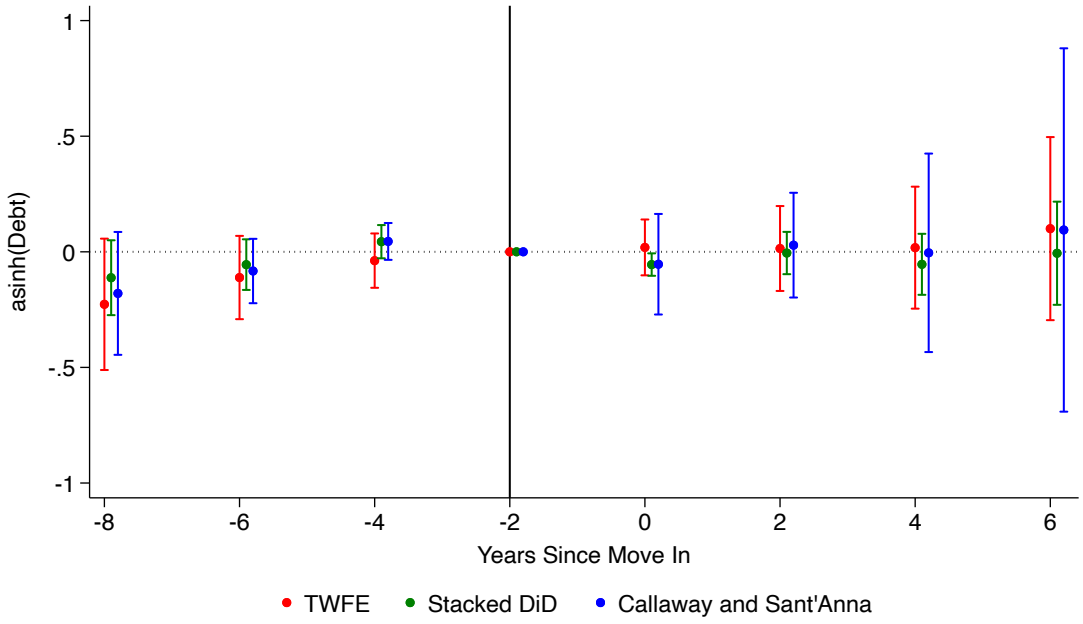
(a) Move In



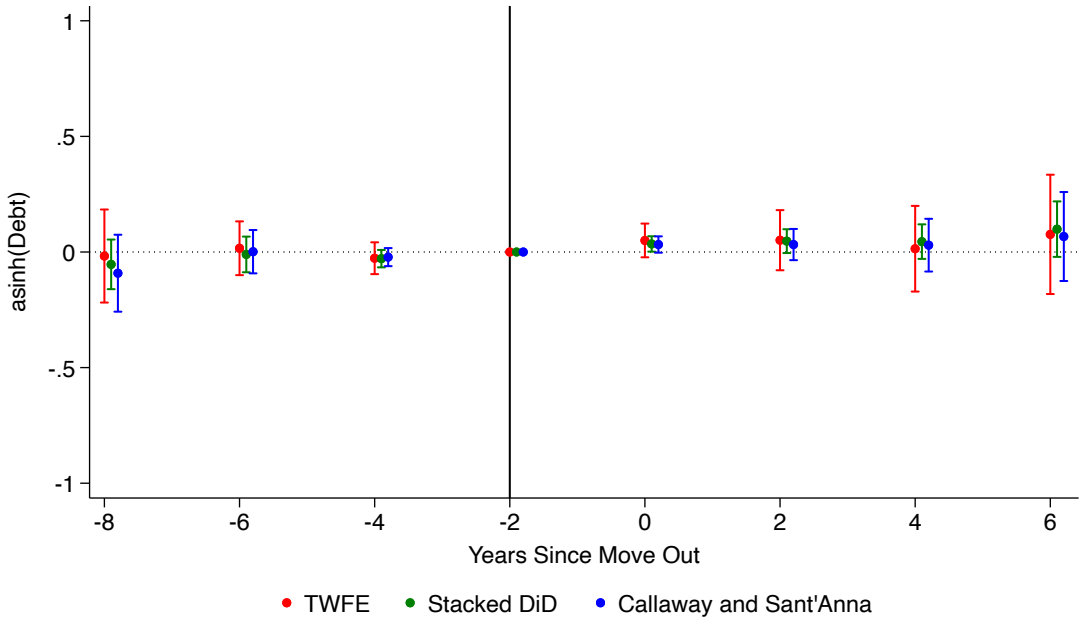
(b) Move Out

Note: The figure shows event study estimates for total assets (in thousands of dollars) transformed using the inverse hyperbolic sine. Estimates are shown for the TWFE, Callaway and Sant'Anna (2021), and stacked DiD methods. Total asset values are winsorized each year at the 99th percentile. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

Figure A.3: Debt Event Studies



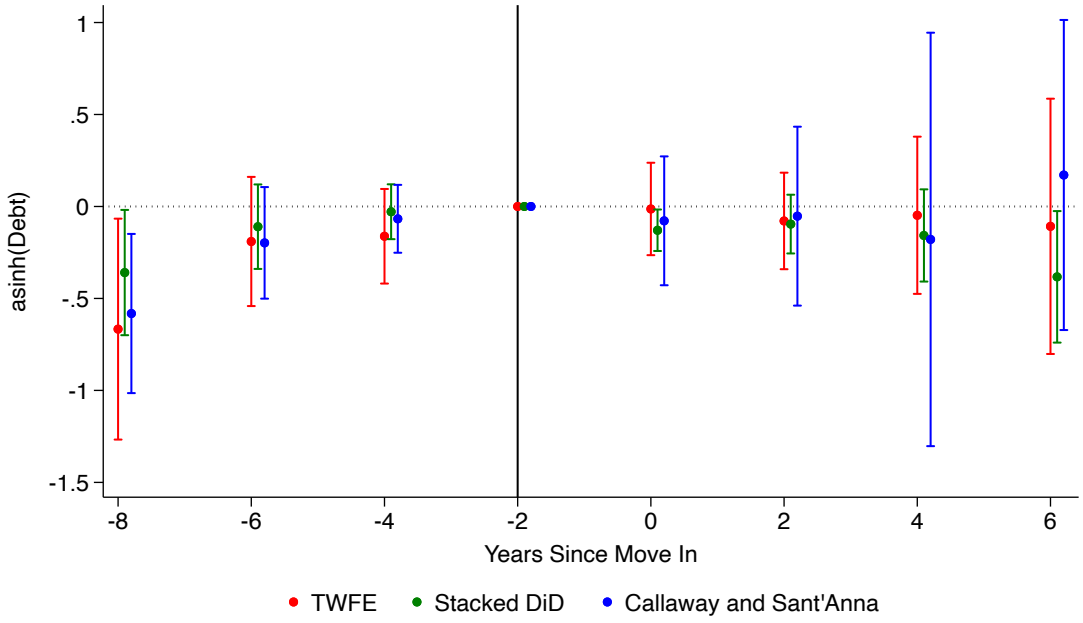
(a) Move In



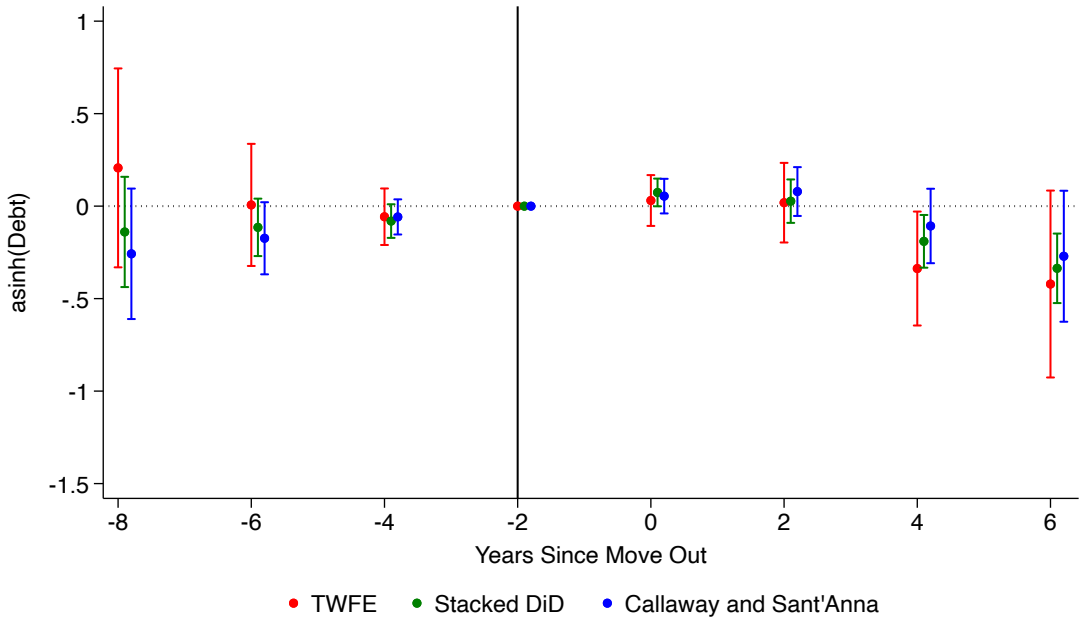
(b) Move Out

Note: The figure shows event study estimates for total debt (in thousands of dollars) transformed using the inverse hyperbolic sine. Estimates are shown for the TWFE, Callaway and Sant'Anna (2021), and stacked DiD methods. Total debt values are winsorized each year at the 99th percentile. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

Figure A.4: Debt Event Studies, Including Student Loans



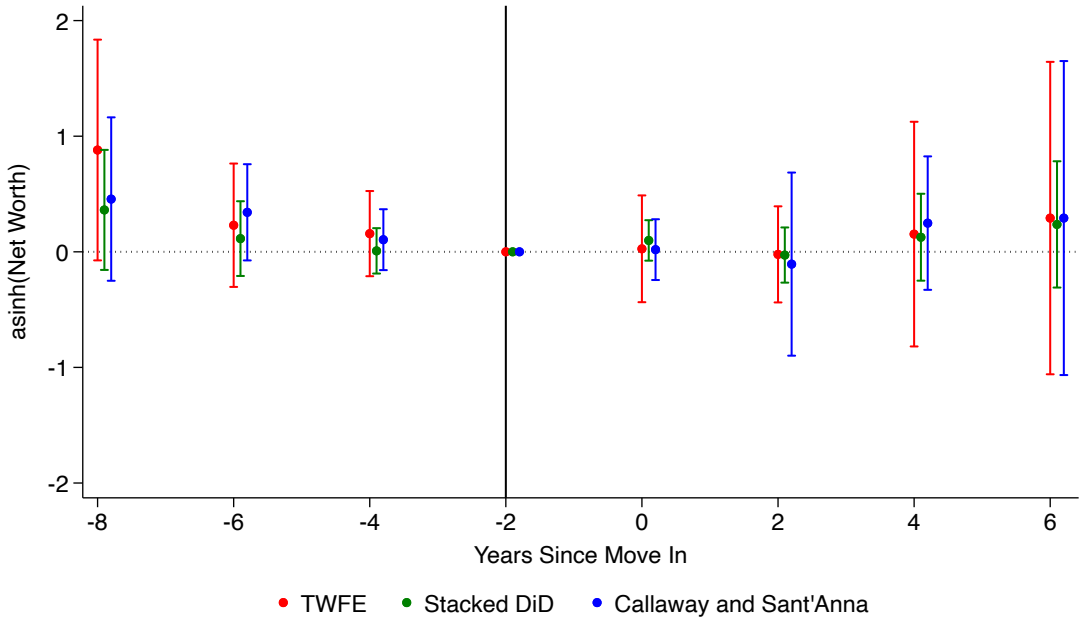
(a) Move In



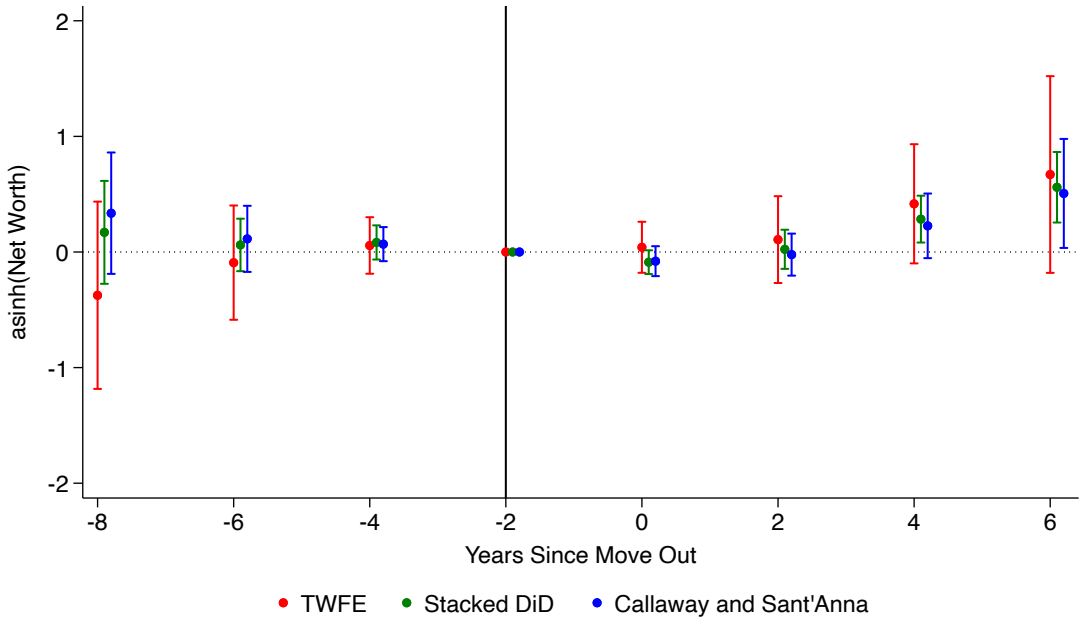
(b) Move Out

Note: The figure shows event study estimates for total debt including student loans (in thousands of dollars) transformed using the inverse hyperbolic sine. Estimates are shown for the TWFE, Callaway and Sant'Anna (2021), and stacked DiD methods. Total debt values are winsorized each year at the 99th percentile. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

Figure A.5: Net Worth Event Studies, Including Student Loans



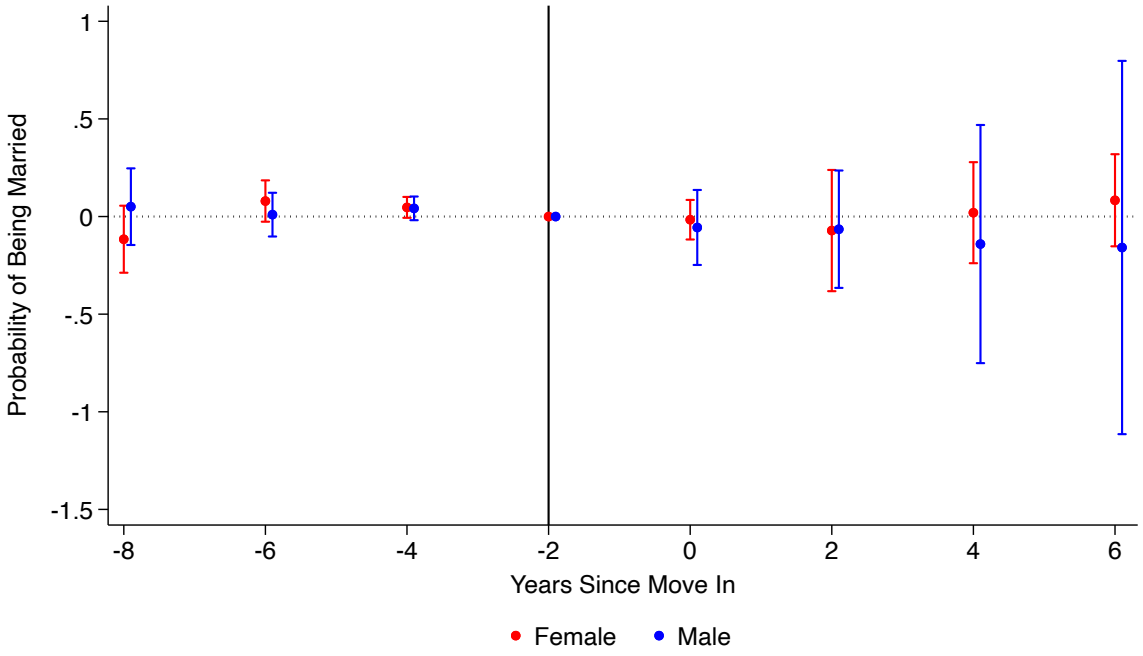
(a) Move In



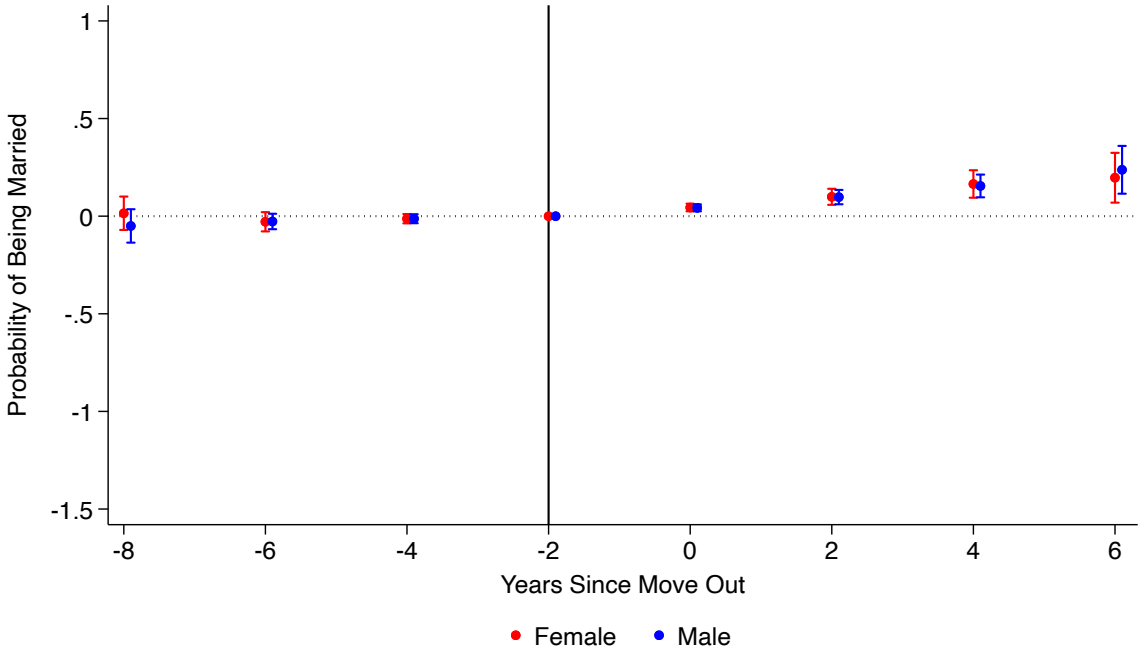
(b) Move Out

Note: The figure shows event study estimates for net worth including student loans (in thousands of dollars) transformed using the inverse hyperbolic sine. Estimates are shown for the TWFE, Callaway and Sant'Anna (2021), and stacked DiD methods. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

Figure A.6: Married Event Studies by Gender



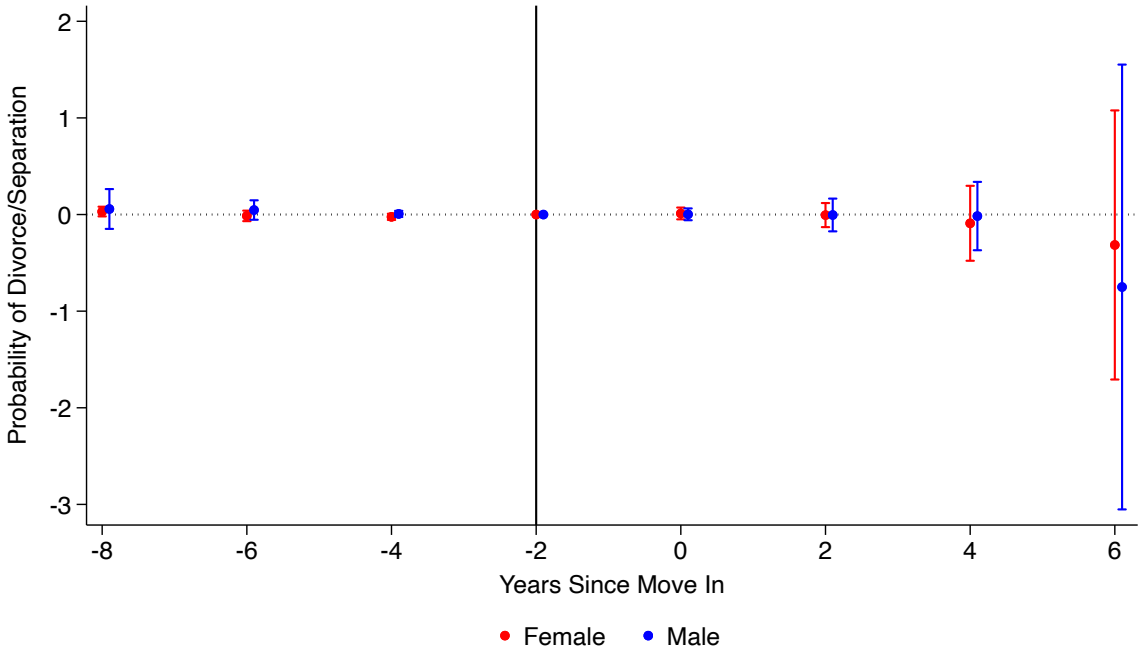
(a) Move In



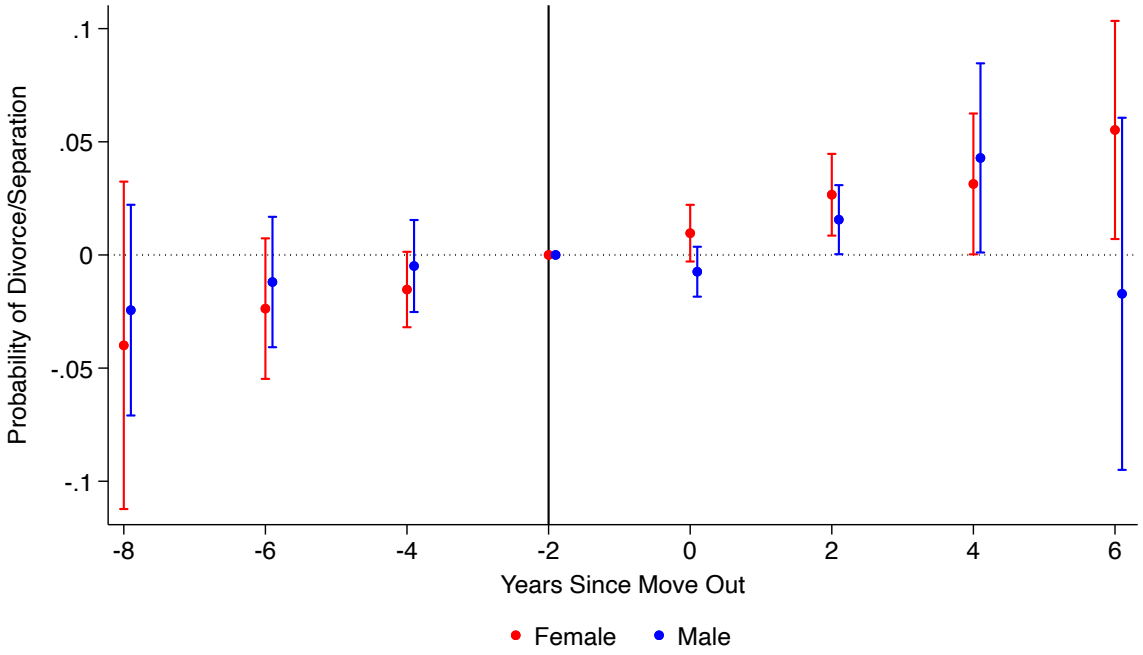
(b) Move Out

Note: The figure displays the Callaway and Sant'Anna (2021) estimates for married by gender. The outcome is a dummy variable with 1 indicating that the YA is married and 0 otherwise. Source: PSID Transition to Adulthood Supplement (2005 - 2019).

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



(a) Move In



(b) Move Out

Note: The figure displays the Callaway and Sant'Anna (2021) estimates for divorce or separation by gender. The outcome is a dummy variable with 1 indicating that the YA is divorced or separated and 0 otherwise. Source: PSID Transition to Adulthood Supplement (2005 - 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)		5.164	5.164	5.164	0.427	0.427	0.427	8.123	8.123	8.123
Mean of Dep. Var. (asinh)		1.351	1.351	1.351	0.237	0.237	0.237	1.294	1.294	1.294
F	3.402									
N	5004	5004	5004	5004	5004	5004	5004	5004	5004	5004

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	41.447	41.447	41.447
AR p-value	0.053	0.393	0.483
AR CI	(-∞,-4.345] ∪ [-0.030,∞)	(-∞,∞)	(-∞,∞)
N	5004	5004	5004

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			1.186
	(0.032)			(1.297)
Mean of Dep. Var.	2.232		2.232	2.232
F		3.510		
N	4982	4982	4982	4982

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	1.186
	(0.337)	(0.298)	(0.443)	(1.155)
Eff. F	41.447	80.840	41.345	42.879
AR p-value	0.627	0.458	0.404	0.165
AR CI	(-∞,∞)	(-∞,∞)	(-∞,∞)	(-∞,-2.519] $\cup$ [-0.781,∞)
N	5004	3275	5001	4982

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