# Housing Affordability: Marriage-Childbearing and Co-Residence Outcomes for Young Adults

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**Abstract**

The share of young adults living with their parents has increased over the first two decades of the 21st Century in the US. The increase in co-residence has been shown to be explained in part by decreased housing affordability during this period, among other factors. A key factor associated with the rise in co-residence is the decline in marriage and child-bearing. Prior work shows that endogenizing marriage and childbearing increases the measured impact of housing affordability on co-residence. This paper examines the role of parental housing and financial wealth on the joint adult child and parental co-residence decision. We also further explore the direct impact of housing affordability on mariage and childbearing.

**Keywords:** household formation; young adults; housing costs; housing demand; marriage-childbearing

**JEL Codes:** D12; R21; R2

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## 1. Introduction

In the early 1900s approximately 40 percent of young adults (18-29 years old) in the US lived with their parents. This rose to almost 50 percent during the Great Depression but then with post-WWII economic growth fell to 30 percent.. Over the first two decades of the 21st centure this share increased back to early 20th century levels, reaching close to 50 percent today.

Marriage and childbearing rates have dramatically decreased in this period, as co-residence increased. There is a long-standing literature that shows the (negative) association between marriage/childbearing rates and co-residence. The literature on co-residence also points to the cyclical importance of unemployment in explaining spikes in co-residence (Paciorek, 2016).

In this paper we expand the literature to examine the role of parental characteristics particularly in the newly observed importance of housing affordability in the increase in co-residence (Acolin et al., 2024). In early stage work, we also examine the impact of housing affordability on marriage and child-bearing and particularly the interaction of market-wide housing affordability with parental assistance.

A limited empirical literature links delays in marriage and childbearing to higher housing costs (Clark 2012; Fields 2024; Rosenbluth 2024). Early work (Haurin et al. 1995) established a positive relationship between homeownership and childbearing, which suggests one way affordability might be linked to child-bearing outcomes. Here we explore whether housing wealth and overall parental wealth impacts marriage and childbearing decisions and how housing affordability and co-residence may mediate these outcomes.

At the nadir of co-residence, as baby-boomers entered adulthood in the 1960s and 1970s, young adults were moving out of their parents' home, getting married, having their first child, and becoming homeowners earlier and at higher rates than the previous generations. They were also experiencing high levels of labor force participation. Instead of continuing to decline or stabilize at these low levels of co-residence, the share of young adults living with their parents started to increase in the 1980s and has continued to increase since, particularly in the aftermath of the Great Recession and the COVID-19 pandemic periods characterized by decreasing housing affordability.

Acolin et al. (2024) establishes a relationship between housing affordability and co-residence. A finding of that paper is that, all else equal, co-residence is higher in less affordable housing markets. Among the other factors that matter to co-residence is employment, both individual and

(cyclically) market level and individual, along with marital/childbearing status. With mariage/childbearing endogenized, the impact of affordability (but not employment) increases. This implies a negative relationship between housing affordability and marriage-childbearing status. Here we directly look at marriage-childbearing as a function of housing affordability, along with a potential role of co-residence in affecting this outcome.

The primary contribution of this study is to examine the impact of housing affordability and parental housing and overall wealth on co-residence and marriage-childbearing outcomes. We use longitudinal data from the Panel Survey of Income Dynamics (PSID) for 2021 with detailed information about young adults including their current and potential income along with their marital situation, and whether they have children or not. The dataset includes information about parents, independent of whether their adult children currently reside with them, including information about their number of children and housing situation. Access to the restricted data allows us to include labor and local market housing characteristics for both the young adults and their parents.

The use of PSID data allows us to control for not only individual but also parental characteristics including resources and housing market conditions. This enables us to examine the role of parental wealth vs housing conditions in affecting co-residence outcomes. Given that among the outcomes we observe mariage/childbearing, we also use 25-34 as a definition of young adults to capture the age range during which a large share of young adults experiences these life events. However, the patterns are similar when looking at 18-29 or 25-34 years old.

2. **The findings indicate that parental endowments, including whether they own their home, the size of their homes and their financinal and housing wealth are associated with young adults co-residing or not. Young adults who co-reside and those who live in less affordable markets are less likely to be married and have children. Parental endowments do seem to moderate the negative relationship between affordability and childbearing.Literature: Housing Affordability and Young Adult Demographic and Labor Outcomes**

The secular increase in the share of young adults co-residing with their parents since the 1960s is well documented (Matsudaira 2016, Acolin et al. 2024). Cyclical components such as unemployment have been shown to play a significant role with co-residence increasing in times of crisis like the Great Recession or the COVID-19 pandemic (Lee and Painter 2013; Bitler and

Hoynes 2015; Paciorek 2016; Arundel and Lennartz 2017). Trends in demographic characteristics, most importantly, the decrease in marriage and childbearing have been shown to be associated with secular increases in co-residence (Matsudaira 2016, Martinez-Mazza 2020, Acolin et al. 2024). Existing studies have also shown the role of individual factors such as going to college, entering the labor market, in explaining decohabitation and household formation by young adults (Billari and Liefbroer 2007; Lee and Painter 2013).[1] Income, employment status and stability, and parental economic situation have been shown to be factors associated with the likelihood of an individual to start an independent household and to be able to maintain that status given their stage in the life cycle (Ermisch and Di Salvo 1997; Lee and Painter 2013; Lennartz et al. 2016; Paciorek 2016).[2]

Housing market conditions are found to be associated with household formation with higher housing prices negatively affecting the formation of owner households and higher rents negatively affecting the formation of renter households (Haurin et al. 1993; Ermisch and Di Salvo 1997; Ermisch 1999; Lee and Painter 2013). Choi et al. (2019) find that co-residence is higher in less affordable markets. Acolin et al. (2024) find that decreased housing affordability, defined by median housing value (or median rent) to median household income, is the most important market factor associated with the increase in co-residence between 2000 and 2021.

Housing conditions are also found to affect marriage and childbearing outcomes (Simon and Tamura 2009; Öst 2010; Clark 2012; Brauner-Otto 2023; Japaridze and Sayour 2024). In particular, higher housing costs (rents and prices) are found to be associated with delayed marriage (Sakura 2007) and delayed (Clark 2012) or lower overall fertility (Simon and Tamura 2009;[3] Japaridze and Sayour 2024). Homeownership is found to be associated with childbearing in a range of contexts with delayed homeownership being

[1] In a review of the literature on the determinants of household formation Billari and Liefbroer (2007) also mention the role of cultural factors like attitude and value orientations as a distinct class of determinants.

[2] These individual factors will have changing impacts on household formation depending on the opportunities and constraints faced by an individual as a function of market factors such as student debt (Chopra 2013; Myers 2016), labor market conditions (Ermisch and Di Salvo 1997; Ermisch 1999; Billari and Liefbroer 2007; Lee and Painter 2013; Matsudaira 2016; Paciorek 2016; Martinez-Mazza 2020) and housing market conditions (Haurin et al. 1993; Ermisch and Di Salvo 1997; Ermisch 1999; Acolin et al. 2024).

[3] The increase in the share of young adults having high levels of personal debt (student debt but also credit card and card debt) and real income below their parents at the same age may also contribute to increased co-residence (Chopra 2013; Fry 2013; Myers 2016). Monthly repayments of student debt can make it harder for young adults to save for a downpayment and qualify for mortgages to become homeowners but also to have sufficient disposable income to save for a deposit to rent a home and afford the monthly rent (Chopra 2013).

associated with delays in childbearing (Öst 2010; Brauner-Otto 2023).[4] The trends to lower rates of marriage and childbearing are global and are clearly impacted by broad social and cultural factors.

The trend towards a larger share of young adults living with their parents is also not unique to the US and is found in many high-income economies in Europe and Asia (Forrest and Yip 2012; Lennart et al. 2015). European countries, particularly Southern and Continental Europe countries have traditionally experienced low headship rates among young adults (for instance in Southern Europe over 60 percent of 18-34 lived with their parents as of 2012) (Lennartz et al. 2015). These countries have also experienced an increase in the share of young adults living with their parents in recent decades, particularly in the aftermath of the Global Financial Crisis as more young adults returned to their parents' home (Lennartz et al. 2015; Arundel and Lennartz 2017; Martinez-Mazza 2020) and fewer were able to access homeownership (Lennartz et al. 2015), resulting in "Yo-Yo transitions" between independent living and living with their parents (Forrest and Yip 2012; Lennartz et al. 2015; Arundel and Ronald 2016). Similar patterns of "boomerang" young adults returning to live with their parents after living independently have also been documented in the US (Chan et al. 2021).

The increase in co-residence may be in part a response to housing and labor market pressures. Co-residence may allow young adults to benefit from resource pooling with parents and may help to overcome constraints faced by young adults in forming their own households. Cost constraints may also cause delays in marriage and childbearing. Hence, higher co-residence and marriage/childbearing delays may be more prevalent in higher cost, less affordable markets.

While the global plummetting in fertility is of course associated with major societal and cultural factors, we do know anecdotally that lower rates of fertility are found in cities with higher housing costs. But this may not be a causal relationship. Factors associated with higher housing costs such as density and higher wages in larger cities are likely to increase overall costs of raising children as well as increasing the opportunity costs of doing so. Such increases in costs may separately be associated with higher co-residence so that the association of delayed marriage/childbearing and co-residence may be an artifact of the same underlying cause of higher costs of living, including housing costs. Nonetheless, by using the number of rooms per person in the parental home as an

[4] The potential importance of financial constraints in explaining the decrease in childbearing is examplified by the relatively constant self-stated number of desired children over time (Japaridze and Sayour 2024).

IV, we can help to identify the impact of this living arrangement from the separate common impact of higher housing costs on marriage and childbearing delays, along with affordability.

Co-residence of young adults with their parents might affect marriage and childbearing, for example thruogh a housing affsordability channel. In markets where housing is less affordable, marriage and child-bearing may be delayed. Co-residence might help overcome the constraints to homeownership and therefore the potential negative impact of housing affordability on marriage and child-bearing. In simulations using Japanese data, Sakudo (2007) finds that benefiting from parental transfers and having the possibility to co-reside based on parental housing conditions is associated with substantially lower mariage rates. We use the number of rooms by person in the parental household (not including the young adult) as an instrument that is associated with higher co-residence but is not expected to be directly associated with individual propensity to marry/have children. However, there may be unobserved variables that cause people to live with their parents and not to get married and have children and they are more likely to do so if their parents have a larger home. It is for young adults for whom there is an underlying motivation to marry and have children that the co-residence may have a stronger impact.

We include as controls in estimating marriage and childbearing outcomes, labor market status. Having the ability to co-reside with parents can provide insurance benefits against labor market risks. Kaplan (2012) demonstrates that this insurance benefit can allow young adults to take more risks and pursue jobs with the potential for higher earnings. However, there are also concerns that the increase in co-residence might contribute to keeping young adults in declining labor markets, dampening their labor participations and earnings (Chan et al. 2021; Albanesi et al. 2022). The labor market outcomes of increased co-residence might also include decreased mobility away from weak labor markets (Chan et al. 2021) in part driven by housing costs (Olney and Thompson 2024). We examine the relationship of co-residence on these labor market outcomes.

Combined, the existing literature points to an increasing share of young adults co-residing with their parents into their 20s and early 30s, in part driven by decreasing housing affordability. The literature also points to a role for decreasing housing affordability's impact on demographic and labor outcomes, with higher housing costs associated with delayed marriage and childbearing. However, we do not know if co-residence helps to overcome these underlying cost factors so that, say, 10 years out, young adults who co-resided catch up in their marriage and childbearing to those who did not co-reside. This study examines the contribution of individual, parental and market

characteristics to co-residence by young adults and how co-residing is associated with marriage and childbearing.

## 3. Data and Method

### *3.1 Data Description*

We use data from the Panel Study of Income Dynamics (PSID) administered by the University of Michigan's Survey Research Center. Individual young adults aged 18-29[5] as of 2021[6] are used as the unit of analysis, resulting in a sample of 4,083 individuals. The PSID is a longitudinal dataset that provides detailed family history. The data are representative of US individuals with an over-sampling of low-income and non-white families. To account for the over-sampling, sample weights are used for the analysis. We use the Family Identification Mapping System (FIMS) to merge data about young adults with their parents (biological and non-biological) and children. This linking provides information about the characteristics of the parents of young adults independently of whether they are living with them or not. If their parents live in more than one household, we chose the household they are living with or the mother's household.[7] The outcomes of interest are in a first step co-residence and in a second step whether the young adult is currently 1) married, 2) has (any) children.

We use individual young adults' household structure to determine co-residency status. A young adult whose mother or father lives in the same household is defined as co-residing with their parents. We also identify whether co-residing young adults are "boomerang" co-residents (Chan et al. 2021) if they were identified as living independently in any of the waves from 2009 to 2021.

For young adults, based on the literature, we use the following key socio-demographic characteristics: age, gender, race and ethnicity, marital and childbearing status, educational

[5] We also use alternative definitions of young adults: 18-34 and 25-34.
[6] We also examine the outcome in 2021 of individuals who were young adults (18-29) in 2011.
[7] We also examine alternative based on using the parent with the highest level of resources as measured by income or number of rooms in their house.

attainment, enrollment status, employment status, individual wages. We also control for whether someone in their household has student loans.[8]

For parents we use the following characteristics, based on the literature (Lee and Painter 2013): marital status, highest level of education of father or mother, parental income (joint), housing tenure, number of rooms, number of household members. For parental income, we use a 3-period (6-year) average as a proxy for the measure of permanent income. We also include housing and financial wealth measures. The housing wealth is equal to the home equity and the financial wealth is equal to the sum of checking and savings accounts, corporation shares, mutual funds, and investment trusts.

We are also able to include local market characteristics using the restricted version of the PSID dataset that includes geographic identifiers. This allows us to merge in the market-level (MSA or non-MSA part of the state) unemployment rate, median household income, median house value, and median contract rent and to create affordability measures: rent-income (annualized median contract rent/median household income expressed in percentage points) and price-income ratios (median house value/median household income).[9] The local housing and labor market characteristics are aggregated from American Community Survey 2021 1-year data based on the geographic location of the individual and their parents.

*3.2 Empirical Models*

Motivated by the empirical evidence in the literature (Matsudaira 2016; Ermisch 1999; Acolin et al 2024), we develop a residential choice model of young adults who decide whether to co-reside with their parents or live independently in Appendix A. Based on the stylized model, we clarify the relationship of the co-residence probability, affordability factors, and wealth, which allows us to hypothesize that the co-residence probability is increasing in the rent-income ratio and the price-income ratio and that the lower the sum of housing/financial wealth and human capital, the higher the co-residence probability. We hypothesize that parental housing wealth is likely to be associated

[8] A downside of the PSID data on financial assets and loans is that it is at the household rather than individual level. It is therefore possible that it is the young adult partner, sibling, roomate or parents for example that are responsible for that student loan.

[9] As the observed rent-income ratio or price-income ratio are highly correlated but may deviate from the long-run equilibrium, we separately estimate the model with each affordability factor.

with a higher probability of co-residence through in-kind support, while parental financial wealth may be an alternative means of intergenerational wealth sharing and therefore may be associated with a lower probability of co-residence.

We test for the association and the probability of co-residence of rent-income and price-income ratios, respectively, as the two affordability measures are highly correlated cross-sectionally. The human capital measures the lifetime present value of a young adult's expected labor income, while the housing and financial wealth mainly reflects the amount of asset held by parents. In addition to testing the impact of the aggregate wealth, as noted, we would like to identify whether different types of parental wealth may have different impact on the ability for parents to support their children financially depending on their level of liquidity.

To empirically examine the factors associated with the increased likelihood of co-residence among young adults, we estimate the following Logit co-residence model.[10]

$$\Pr(CO_i = 1|X_i) = F\left(\gamma_0 + X_i^Y \Gamma_i^Y + X_i^P \Gamma_i^P + X_i^M \Gamma_i^M + v_{s(i)}\right) \quad (1)$$

where $CO_i \in \{0,1\}$ is a dummy variable indicating whether an individual $i$ lives in the same home with at least one of their parents and $F(\cdot)$ is the logistic function. Standard errors are clustered at the state level to take within-state correlation across young adults into account. We control for a vector of individual ($X_i^Y$), parental ($X_i^P$) and market ($X_i^M$) variables described above and for census division fixed effects $v_{s(i)}$.[11] Based on the existing studies, we expect that individuals in a higher age group, being a female, being a college graduate, getting married or divorced, having children, and higher wages are associated with a lower likelihood of co-residence.

Within the parental variables ($X_i^P$), we are able to include characteristics expected to positively affect the co-residence choice of a young adult (parental ownership of their house unit, larger homes, more rooms per household members) or those with *ex-ante* unclear effects (parental resources in terms of wealth and permanent income). We are particularly interested in these parental variables as they have not been directly examined in the co-residence literature.

[10] The regression models are all estimated with individual weights.

[11] Following the approach in Acolin et al. (2024) we also consider a model where we endogenize the marriage-childbearing status decision, using a Heckman selection model that controls for the inverse Mills ratio to account for an endogenous response of marriage-childbearing status to housing affordability and unemployment.

The market variables ($X_i^M$) include the unemployment rate and one of the two affordability factors (rent-income or price-income ratio that are Z transformed). Young adults who live in metros with a higher unemployment rate and in areas that are less affordable are expected to have a higher likelihood of co-residence. The state fixed effect $v_s$ controls for the impact of regional factors.

In a second set of models, we examine to what extent co-residing with one's parents is associated with a lower likelihood of 1) being married, and 2) having children.

$$\begin{aligned} \Pr(Y_i = 1|X_i) &= F\left(\gamma_0 + \tilde{X}_i^Y \Gamma_i^Y + X_i^P \Gamma_i^P + X_i^M \Gamma_i^M + \hat{F}(CO_i = 1|X_i) + v_{s(i)}\right) \\ F(CO_i = 1|X_i) &= F\left(\gamma_0 + RoomsPerMember_i + \tilde{X}_i^Y \Gamma_i^Y + X_i^P \Gamma_i^P + X_i^M \Gamma_i^M + v_{s(i)}\right) \end{aligned} \quad (2)$$

where $Y_i \in \{0,1\}$ is a dummy variable indicating whether an individual $i$ experiences one of the outcomes examined and $F(\cdot)$ is the logistic function with a similar specification to the model described above but with the predicted probability of the co-residence status as the independent variable of interest. Among the individual variables ($\tilde{X}_i^Y$), we take out the variables related to the marital and childbearing status from the list of independent variables to avoid the issue of multi-colinearity with the co-residence variable.

In the first stage, we instrument the co-residence status using the number of rooms per household member. When we estimate the number of rooms per member, we deduct the number of co-residing young adults to define the number of household members. In this way, we construct a room tightness variable measured consistenly across households with and without co-residing young adults. The measure can be interpreted as a state variable of a young adult, before making the living arrangement decision of co-residence that we observe in the data. For young adults whose parents live in different households, we choose the household they are living with or the mother's household.

In the second stage, we use the predicted probability of the co-residence status to examine the relationship of co-residence and marriage/childbearing. A parental home with more room space available is expected to increase the likelihood of young adults co-residing with their parents but is not expected to be directly related to a young adult's propensity of getting married or having children except through the impact it has on making co-residence possible. However, it is possible that there are some unobserved family dynamics that contribute to both parents chosing to have a

larger home that can accommodate adult children and adult children deciding to co-reside and not get married or have children.

Finally, we also examine the outcomes in 2021 of individuals who were young adults (18-29) in 2011 in order to explore whether co-residing seems to be associated with longer term marriage/childbearing outcomes. This allows us to see whether co-residence may have long term supportive impacts even if contemporaneous relationships with the outcomes examined are negative

## 4. Results

### 4.1 Sample Statistics

Table 1 reports the descriptive statistics for the overall sample and broken down by young adults not co-residing and those co-residing. Overall, co-residing young adults are substantially less likely to be married (2% vs 28%) and to have children (5% vs 32%). Some of these differences are explained by the fact that young adults who co-resides are substantially younger on average (22 vs 25 years). Their younger age also contributes to lower educational achievement and to co-residing young adults being more likely to still be in school but differences persist when looking at 25-34 year old who are substantially less likely to have a high school diploma and a college undergraduate or graduate degree.[12] Hence, we report results for these older young adults as well.

In terms of parental characteristics, co-residing young adults have parents who are more likely to be married, to have a college or graduate degree, and to have higher income. parents with co-residing adult children are more likely to own their home and to have larger homes.

Parents of co-residing children have lower overall wealth (and separating wealth into its componenents, lower housing equity and lower non-housing wealth), This difference in wealth is larger among parents of older young adults 25-34 with parents of young adults who are co-residing substantially lower.[13]

[12] Results for older cohorts are reported in Appendix Table B1-A.
[13] See appendix Table B1-A.

In terms of location characteristics, co-residing young adults live in less affordable and more expensive housing markets with similar levels of unemployment (as of 2021).

While a smaller share of young adults who co-reside are married and have children, there is still a substantial proportion of young adults married and with children in these living arrangements (9% and 15% respectively). These correspond to multigenerational households that have been shown to increase substantially over the last 50 years (Cohn et al. 2022). Looking at older young adults (30-34) who co-reside (16% of that age group), the share married and with children increases substantially relative to 18–29-year-olds who co-reside (from 2% to 18% and from 5% to 36%) but remains substantially below the levels for those who do not co-reside (51% and 57%).

### 4.2 Co-residence Regression Results

Table 2 reports regression results which show the marginal effects from the estimates of models examining characteristics associated with co-residence. Regarding individual characteristics, individual income, age, sex, race and ethnicity, marital status, having children, educational attainment and employment status are of similar sign and magnitude to those recently estimated in Acolin et al. (2024) using CPS data. Young adults who are older, with higher levels of education, employed, with higher income, women, married or divorced and have children are less likely to co-reside with their parent, while those who are enrolled in school, Black, Hispanic or from other races are more likely to co-reside. Individuals with student loans are slightly less likely to co-reside with their parents, which was not the expected direction.

As Table 2 reports, higher market level unemployment is associated with a higher likelihood of co-residence. This confirms the recent literature on the importance of labor markets for the likelihood of living with parents (Lee and Painter 2013, Matsudaira, 2016, Paciorek 2016, Acolin et al. 2024)

We also test for whether lower levels of affordability as measured by rent to income and price to income ratio are associated with a higher likelihood of co-residence. We confirm results in the recent literature showing the newly established relationship between affordability and co-residence using a different dataset (Acolin et al. 2024). Each 1 SD increase in rent-income and price-income is estimated to be associated with a 2 pp higher likelihood to co-reside. Among 25-34 year old, that relationship is even stronger with a 4 pp higher likelihood to co-reside for a 1 SD increase in rent-income and 3pp higher likelihood for price-income.

This study contributes to the literature on co-residence by including parental characteristics. Here we find that young adults whose parents, have higher income and are married are more likely to have young adult children who co-reside. Importantly parents who own their home and who have more space per individual in the household are, as expeected, more likely to have young adult children at home. This can be explained by parents who have more control over their home and the space to house children offering greater opportunity for young adults to co-reside than parents who might be restricted in adding adult young children to their household due to lease terms or lack of space.

The variables are significant with the expected signs and the impact is economically significant with parental homeownership associated with a 6 pp higher likelihood to co-reside in the rent-income model and 1 pp higher likelihood to co-reside for each additional room in the house. The significance and size of these coefficients increase when we exclude the set of parental characteristics that are likely to be highly correlated with homeownership and size of home such as parental income and wealth. The relationship for parental ownership and house size is larger among older young adults (11 pp and 7 pp in rent-income model).

However, we find that young adults with parents who have more housing equity and financial wealth and higher levels of education are less likely to co-reside. These contrasted results for different measures of parental resources are consistent with parents having more control over their space and larger homes being able to host their children, controlling for other characteristics, but those having sufficient wealth being potentially able to support them in getting their own housing unit through intergenerational wealth transfers.

### 4.3 Additional Regression Results: Preliminary

We turn in Table 3 to preliminary results on the difference in outcomes for young adults who are co-residing or not. Table 3 reports the marginal effects of co-residing on four outcomes of interest: being married, having children, being employed and individual labor incomes. We report the results for the OLS and for the second stage with the instrument for whether the young adult is co-residing using the number of rooms per person in their parental home. The results of the first stage indicate a strong predictive value, with F tests ranging from 14.7 to 84.9. However, we do not believe that the instrument addresses sorting into co-residence by young adults who take advantage

of space being available in the parental home having a lower propensity to get married and have children, and, hence, we do not interpret the results as providing evidence of causality.

The OLS results indicate that co-residing is, as expected, associated with subtantially lower levels of marriage and childbearing (-13 and -14 percentage points). The IV results are of similar magnitude to the OLS results but about 2 percentage point lower for all outcomes, suggesting some sorting on unmeasured characteristics associated with lower levels of marriage-childbearing. While these results are not unexpected, we also do not attribute causality to them, they merely represent the correlation that the literature has previously shown. We return below to the issue of housing affordability and parental characteristics in this outcome.

The results are overall similar when including rent-income or price-income as a measure of affordability. The housing affordability measures are associated with lower propensity to get married and have children (-1pp for both for a 1 SD increase in rent-income ratio and 1 and 2 pp for a 1 SD increase in price-income ratio in the results with co-residence instrumented).

Alternative specifications without parental controls show larger estimates for the association between affordability and having children, with a 1 SD increase in rent-income and price-income associated with a 2 pp and 4 pp lower likelihood to have children respectively. This suggests that parental endowment may contribute to buffer the relationship between housing affordability and young adult childbearing outcomes.

Appendix B reports results for older young adults (25-34). A substantially smaller share (23%) of these young adults co-reside (Appendix Table B1-A) and a larger share of those are married and have children (36% and 42%). The same predictors than for younger adults are associated with a higher likelihood to co-reside (Appendix Table B1-B). Of note, affordability has a larger estimated impact for these older young adults (estimated marginal effect is about twice as large) and young adults with higher levels of education ae substantially less likely to co-reside than those without a high-school diploma.

The estimated marginal effects is also larger for parental endowments with older young adults more likely to co-reside if their parents own their home, live in a single-family home and have more room. In addition, young adults who co-reside are still substantially less likely to be married and have children and these differences persist in the multivariate regressions results (Appendix Table B1-C), with co-residing young adults 26 pp less likely to be married and 23 pp less likely to

have children. Affordability continues to be associated with a lower likelihood to have children for this age group as well with a 1 SD increase in rent-income and price-income associated with a 2 pp and 3 pp lower likelihood to have children. This indicates that while older young adults are less likely to co-reside and more likely to get married and have children, individuals who co-reside exhibit different outcomes.

When examining the outcomes of individuals who were young adults in 2011 ten years later (Table 4), the results show that individuals who were co-residing in 2011 are substantially less likely to be married and have children in 2021 with relationships of the same magnitude as for the estimates reported for currently co-residing households.

These results indicate that co-residing does not appear to be associated with a higher level of marriage/childbearing even after co-residence has ended, which is the case of the majority of individuals (66%). Instead of being a temporary living arrangement that is associated with delayed marriage/childbearing, it appears that young adults who co-reside are durably less likely to get married or have children. These results are similar to findings with regards to household formation and homeownership by Choi et al. (2022) that do not find a convergence over time but rather long lasting lower propensity to form independent households and become homeowners among young adults who co-reside with their parents.

## 5. Conclusion

Young adults have been living in the same home as their parents at increasing rates over the last decades. These changes in living arrangements have direct implications for housing demand as shown in the literature, impacting both the demand for the number of housing units and the type of units being in demand. A recent literature identified the role of housing affordability in this increase in co-residence.

This paper, using longitudinal survey data from the PSID, shows that in addition to individual and market factors that have been shown to be associated with co-residence, parental resources and housing situation also does matter. In particular, young adults whose parents own their home, live in single family homes and have more space available are more likely to co-reside. Parental resources in terms of family income is also associated with higher levels of co-residence, but higher

levels of wealth is associated with modestly lower likelihoods of co-residence. This suggests a higher level of wealth allows some parents to support their children in living independently.

We then examine whether co-residence is associated with different marriage-childbearing outcomes, instrumenting co-residence using the number of rooms per person in the parents' household. The results indicate that co-residence is associated with substantially lower likelihoods of being married and having children.

Looking at the 2021 outcomes of individuals who were young adults as of 2011, we find that these relationships seem persistent over time, with substantially lower rates of marriage/childbearing among individuals who were co-residing in 2011. If co-residence is associated with delayed marriage/childbearing, the extent to which young adults then catch up on these outcomes has important implications for life cycle trajectories.

Further work is needed to understand how co-residing may have long term impacts on the trajectory of young adults and whether coming back home after living independently (boomerang) is associated with more negative trajectories. In particular, examining differences in outcomes when housing affordability is a driver of the co-residence decision is needed to further understand the impact of housing markets on young adults living arrangement and in turn on housing demand going forward.

## 6. Reference


Acolin, A., Lin, D., & Wachter, S. M. (2024). Why do young adults coreside with their parents?. *Real Estate Economics*, *52*(1), 7-44.

Albanesi, S., Gihleb, R., & Zhang, N. (2022). *Boomerang College Kids: Unemployment, Job Mismatch and Coresidence* (No. w30397). National Bureau of Economic Research.

Atherton, A. M. (2024) Why Do So Many Parents Think Kids Need Their Own Bedroom? *The Atlantic,* https://www.theatlantic.com/family/archive/2024/05/children-home-solo-bedroom/678354/

Billari, Francesco C., and Aart C. Liefbroer. (2024) "Should I stay or should I go? The impact of age norms on leaving home." *Demography* 44.1: 181-198.

Blagg, K., Choi, J. H., Baum, S., Cohn, J., Reynolds, L., Terrones, F., & Young, C. (2022). Student Loan Debt and Access to Homeownership for Borrowers of Color. Washington, DC: Urban Institute

Brauner-Otto, S. R. (2023). Housing and fertility: A macro-level, multi-country investigation, 1993-2017. Housing Studies, 38(4), 569-596.

Carpenter, Julia. (2021) "For Some Millennials, a Starter Home Is Hard to Find." *Wall Street Journal*. https://www.wsj.com/articles/for-some-millennials-a-starter-home-is-hard-to-find-11625391002

Chan, S., O'Regan, K., & You, W. (2021). Migration choices of the boomerang generation: Does returning home dampen labor market adjustment?. Journal of Housing Economics, 53, 101760.

Choi, Jung Hyun, and Gary Painter. (2015) "Housing formation and unemployment rates: Evidence from 1975–2011." *The Journal of Real Estate Finance and Economics* 50(4): 549-566.

Choi, Jung Hyun, Jun Zhu and Laurie Goodman (2019). Young Adults Living in Parents' Basements: Causes and Consequences.

Clark, William A. "Do women delay family formation in expensive housing markets?" Demographic Research, 27.1 (2012): 1.

Cohn, D'Vera, Julian Horowitz, Rachel Minkin, Richard Fry, and Kiley Hurst. "Financial Issues Top the List of Reasons U.S. Adults Live in Multigenerational Homes." Pew Research Center, (2022) https://www.pewresearch.org/wp-content/uploads/sites/20/2022/03/PSDT_03.24.22_multigenerationalhouseholds.report.pdf

Ermisch, John. 1999 "Prices, parents, and young people's household formation." *Journal of urban economics* 45(1): 47-71.

Ermisch, John, and Pamela Di Salvo. "The economic determinants of young people's household formation." *Economica* 64.256 (1997): 627-644.

Fields, Samantha. "New study indicates finances are putting some adults off having children". Marketplace. (2024, July 29) https://www.marketplace.org/2024/07/29/fewer-adults-having-kids-price-child-care-affordability/

Fry, Richard, Jeffrey S. Passel and D'Vera Cohn. "A majority of young adults in the U.S. live with their parents for the first time since the Great Depression." (2020). Pew Research Center. https://www.pewresearch.org/fact-tank/2020/09/04/a-majority-of-young-adults-in-the-u-s-live-with-their-parents-for-the-first-time-since-the-great-depression/

Goodman, Laurie, Rolf Pendall, and Jun Zhu. "Headship and homeownership." *Urban Institute: Washington, DC, USA* (2015): 21-26.

Haurin, Donald R., Patric H. Hendershott, and Dongwook Kim. “The impact of real rents and wages on household formation.” *The Review of Economics and statistics* (1993): 284-293.

Haurin, D., Hendershott, P. and Wachter, S. (1995). “Wealth Accumulation and Housing Choices of Young Households: An Exploratory Investigation.” NBER Working Paper No. 5070. National Bureau of Economic Research: Cambridge, MA.

Japaridze, I., and Sayour, N. (2024). Housing Affordability Crisis and Delayed Fertility: Evidence from the USA. Population Research and Policy Review, 43(2), 1-34.

Kaplan, G. (2012). Moving back home: Insurance against labor market risk. *Journal of Political Economy*, *120*(3), 446-512.

Lee, Kwan Ok, and Gary Painter. "What happens to household formation in a recession?." *Journal of Urban Economics* 76 (2013): 93-109.

Lennartz, Christian, Rowan Arundel, and Richard Ronald. "Younger adults and homeownership in Europe through the global financial crisis." *Population, Space and Place* 22.8 (2016): 823-835.

Manning, W. D. (2020). Young adulthood relationships in an era of uncertainty: A case for cohabitation. *Demography*, *57*(3), 799-819.

Martinez-Mazza, R.. (2020) “‘Mom, Dad: I’m Staying’ Initial Labor Market Conditions, Housing Markets, and Welfare.” Working Paper.

Matsudaira, J. D. (2016). Economic conditions and the living arrangements of young adults: 1960 to 2011. *Journal of Population Economics*, 29(1), 167-195.

Mezza, Alvaro, Daniel Ringo, Shane Sherlund, and Kamila Sommer. 2020. “Student Loans and Homeownership.” *Journal of Labor Economics* 38 (1): 215–60. https://doi.org/10.1086/704609.

Olney, W. W., & Thompson, O. (2024). The Determinants of Declining Internal Migration (No. w32123). National Bureau of Economic Research.

Öst, C. E. (2012). Housing and children: simultaneous decisions?—a cohort study of young adults’ housing and family formation decision. Journal of Population Economics, 25, 349-366.

Paciorek, Andrew. "The long and the short of household formation." *Real Estate Economics* 44.1 (2016): 7-40.

Rosenbluth, Teddy. “Why Are So Many Americans Choosing to Not Have Children?” *The New York Times,* (2024, July 31) https://www.nytimes.com/2024/07/31/health/fertility-births-vance.html

Ruggles, Steven, Sarah Flood, Sophia Foster, Ronald Goeken, Jose Pacas, Megan Schouweiler and Matthew Sobek. IPUMS USA: Version 11.0 [dataset]. Minneapolis, MN: IPUMS, 2021. https://doi.org/10.18128/D010.V11.0

Sakudo, M. (2007). *Strategic interactions between parents and daughters: Co-residence, marriage and intergenerational transfers in Japan*. University of Pennsylvania.

Simon, C. J., and Tamura, R. (2009). Do higher rents discourage fertility? Evidence from US cities, 1940–2000. Regional Science and Urban Economics, 39(1), 33-42.

# 7. Tables

**Table 1. Young Adults (18-29) Overall Sample and by Co-Residence Status**

| | Overall Sample | Not Co-Residing | Co-Residing |
|---|---|---|---|
| **Outcomes of Interest** | | | |
| Live with a Parent (%) | 55.7 | NA | NA |
| Married (%) | 13.5 | 27.8 | 2.2 |
| Has Child(ren) (%) | 16.7 | 32.0 | 4.5 |
| Log Individual Wages (2021 $) | 8.9 | 9.3 | 8.4 |
| **Individual Characteristics** | | | |
| Age | 23.5 | 25.3 | 22.0 |
| | (3.4) | (2.9) | (3.2) |
| Is Female (%) | 46.7 | 51.9 | 42.6 |
| Marital Status | | | |
| Never Married (%) | 85.0 | 69.3 | 97.5 |
| Married (%) | 13.5 | 27.9 | 2.2 |
| Separated, Divorced or Widowed (%) | 1.5 | 2.9 | 0.4 |
| Employment Status | | | |
| Employed (%) | 57.4 | 71.7 | 46.0 |
| Unemployed (%) | 9.5 | 8.8 | 10.1 |
| Not In Labor Force (%) | 33.1 | 19.6 | 43.9 |
| Log Individual Wages (2021 $) | 8.9 | 9.3 | 8.4 |
| Educational Attainment | | | |
| Less Than High School (%) | 24.5 | 13.7 | 33.0 |
| High School (%) | 23.6 | 26.4 | 21.5 |
| Some College (%) | 31.1 | 28.8 | 33.0 |
| College (%) | 18.7 | 27.6 | 11.6 |
| Graduate Degree (%) | 2.1 | 3.6 | 1.0 |
| Is Enrolled in High School or College (%) | 19.9 | 12.1 | 26.2 |
| Student Loans (%) | 30.5 | 33.2 | 28.4 |
| Race and Ethnicity | | | |
| Non-Hispanic White (%) | 53.9 | 56.0 | 52.3 |
| Black (%) | 14.2 | 12.7 | 15.4 |
| Hispanic (%) | 22.7 | 22.3 | 23.0 |
| Other (%) | 9.2 | 9.0 | 9.3 |
| **Parental Characteristics** | | | |
| Marital Status | | | |
| Never Married (%) | 8.8 | 9.2 | 8.6 |
| Married (%) | 76.6 | 74.6 | 77.8 |
| Separated, Divorced or Widowed (%) | 14.5 | 16.3 | 13.6 |
| Educational Attainment | | | |
| Less Than High School (%) | 28.5 | 32.9 | 26.2 |
| High School (%) | 12.6 | 12.8 | 12.5 |
| Some College (%) | 18.8 | 18.7 | 18.8 |
| College or Graduate Degree (%) | 40.1 | 35.7 | 42.5 |
| House Type | | | |
| Single Family, Town Home, or Duplex | 85.3 | 84.8 | 85.5 |
| Multifamily | 10.7 | 9.9 | 11.1 |
| Mobile Home or Other | 4.0 | 5.3 | 3.3 |
| Own (%) | 69.3 | 68.2 | 69.9 |
| # Rooms in House | 6.0 | 5.7 | 6.0 |
| | (2.5) | (2.6) | (2.5) |
| # People in Household | 3.4 | 2.7 | 3.8 |
| | (1.7) | (1.4) | (1.6) |
| Family Income (2021 $1K) | 133.2 | 125.9 | 136.6 |
| | (145.7) | (144.3) | (146.2) |
| Housing Equity | 188.9 | 194.1 | 186.4 |
| | (277.2) | (291.3) | (270.3) |

| | | | |
|---|---|---|---|
| Non-Housing Net Worth | 357.4 | 396.2 | 339.4 |
| | (1240.2) | (1356.6) | (1181.5) |
| **Market Characteristics** | | | |
| Rent-Income Ratio (%) | 20.4 | 20.2 | 20.5 |
| | (3.0) | (2.9) | (3.0) |
| Price-Income Ratio | 4.5 | 4.4 | 4.6 |
| | (1.7) | (1.6) | (1.7) |
| Median Annual Rent (2021 $1K) | 14.9 | 14.6 | 15.1 |
| | (3.9) | (3.8) | (4.0) |
| Median House Value (2021 $1K) | 344.7 | 331.7 | 354.6 |
| | (183.0) | (172.2) | (190.2) |
| Median Household Income (2021 $1K) | 72.7 | 71.8 | 73.4 |
| | (14.0) | (14.0) | (14.0) |
| Unemployment Rate (%) | 6.5 | 6.4 | 6.5 |
| | (2.0) | (1.9) | (2.1) |
| N | 4,083 | 2,137 | 1,946 |

Note: the standard deviations of continuous variables are reported in the parentheses below the means. The means of the binary variables (in percentage point) are reported, with the standard deviations suppressed in the table. The sample is the set of young adults from ages 18 to 29 (inclusive) from the 2021 PSID with information for all variables of interests. Means and standard deviations are weighted by the individual survey weights.

**Table 2. Logit Models of Co-residence: Marginal Probability of Young Adults (18-29) Who Live with their Parents, 2021**

| | Rent to Income | Price to Income |
|---|---|---|
| **Market Characteristics** | | |
| Affordability Factor (Rent-Income Ratio or Price-Income Ratio, Z transformed) | .018*** | .016*** |
| | (0.001) | (0.001) |
| Unemployment Rate (%) | .005*** | .004*** |
| | (0.001) | (0.001) |
| **Individual Characteristics** | | |
| Log Individual Wages (2021 $1K) | -.018*** | -.018*** |
| | (0.002) | (0.002) |
| Age | -.028*** | -.029*** |
| | (0.001) | (0.001) |
| Is Female | -.046*** | -.046*** |
| | (0.001) | (0.001) |
| *Race and Ethnicity (Non-Hispanic White = 0)* | | |
| Black | .025** | .031*** |
| | (0.004) | (0.004) |
| Hispanic | .038*** | .040*** |
| | (0.004) | (0.004) |
| Other | .044*** | .042*** |
| | (0.007) | (0.007) |
| *Marital Status (Never Married = 0)* | | |
| Married | -.283*** | -.282*** |
| | (0.006) | (0.006) |
| Separated, Divorced or Widowed | -.111*** | -.105*** |
| | (0.010) | (0.010) |
| *Have Children* | -.240*** | -.236*** |
| | (0.001) | (0.001) |
| *Employment Status (Employed = 0)* | | |
| Unemployed | .057*** | .062*** |
| | (0.006) | (0.006) |
| Not In Labor Force | -.013*** | -.013*** |
| | (0.004) | (0.004) |
| *Education (Less Than High School = 0)* | | |
| High School | .042*** | .043*** |
| | (0.005) | (0.005) |
| Some College | .048*** | .048*** |
| | (0.005) | (0.005) |
| College | .013** | .012** |
| | (0.006) | (0.006) |
| Graduate Degree | -.086*** | -.088*** |
| | (0.019) | (0.019) |

| | | |
|---|---|---|
| *Enrolled in High School or College* | .040*** | .037*** |
| | (0.004) | (0.004) |
| *Student Loan (No =0 )* | -.019*** | -.020*** |
| | (0.004) | (0.004) |
| **Parental Characteristics** | | |
| *Marital Status (Never Married = 0)* | | |
| Married | 0.045*** | .046*** |
| | (0.002) | (0.002) |
| Separated, Divorced or Widowed | 0.014*** | .010*** |
| | (0.001) | (0.001) |
| *Education (Less Than High School = 0)* | | |
| High School | -.040*** | -.038*** |
| | (0.005) | (0.005) |
| Some College | -.054*** | -.052*** |
| | (0.005) | (0.005) |
| College or Graduate Degree | -.002*** | -.002*** |
| | (0.000) | (0.000) |
| *House Type (Single Family= 0)* | | |
| Multifamily | -.033*** | -.040*** |
| | (0.005) | (0.005) |
| Mobile Home or Other | .001*** | .009*** |
| | (0.000) | (0.001) |
| *Own* | .063*** | .100*** |
| | (0.003) | (0.002) |
| *# of Rooms per Person in Household* | .014*** | .013*** |
| | (0.004) | (0.004) |
| *Log Family Income* | .012*** | .012*** |
| | (0.003) | (0.002) |
| *Log Housing Equity* | -.005*** | -.005*** |
| | (0.000) | (0.000) |
| *Log Non-Housing Wealth* | -.003*** | -.006*** |
| | (0.001) | (0.001) |
| State FE | Yes | Yes |
| Pseudo R2 | | |
| Sample Size | 4,083 | 4,083 |

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the state level are reported in parentheses. The sample is the set of young adults from ages 18 to 29 from the 2021 Wave of the PSID. Observations are estimated by Logit models weighted by individual weights.

**Table 3. Logit Models of Marriage-Childbearing Outcomes: Marginal Probability of Young Adults (18-29) Co-residence and Market Affordability, 2021**

| | Married | Has at least 1 Child |
|---|---|---|
| **A. OLS Results** | | |
| Co-Residence | -.144*** | -.159*** |
| | (0.004) | (0.006) |
| Rent-Income Ratio (z) | -.007*** | -.012*** |
| | (0.000) | (0.000) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.31 | 0.29 |
| Sample Size | 4,083 | 4,083 |
| Co-Residence | -.144*** | -.156*** |
| | (0.004) | (0.006) |
| Price-Income Ratio (z) | -.006*** | -.027*** |
| | (0.001) | (0.001) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.31 | 0.30 |
| Sample Size | 4,083 | 4,083 |
| **B. Instrument Results** | | |
| Co-Residence (IV) | -.126*** | -.141*** |
| | (0.008) | (0.010) |
| Rent-Income Ratio (z) | -.006*** | -.011*** |
| | (0.000) | (0.000) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.38 | 0.34 |
| Sample Size | 4,083 | 4,083 |
| F | 84.9 | 84.9 |
| Co-Residence (IV) | -.125*** | -.138*** |
| | (0.008) | (0.011) |
| Price-Income Ratio (z) | -.005** | -.023*** |
| | (0.001) | (0.001) |
| State FE | Yes | Yes |
| Pseudo R2/Adj. R2 | 0.38 | 0.35 |
| Sample Size | 4,083 | 4,083 |
| F | 85.1 | 85.1 |

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the state level are reported in parentheses. The sample is the set of young adults from ages 18 to 29 from the 2021 Wave of the PSID. Observations are estimated by Logit models weighted by individual weights. Co-residence (IV) is instrumented using the number of rooms per person in the household of the young adult's parents (not including the young adult themselves if co-residing). The other controls are the same as those reported in Table 2, except for the outcome itself.

**Table 4. Logit Models of Marriage-Childbearing Outcomes in 2021 for Individuals who were Young Adults (18-29) in 2011: Marginal Probability of Co-Residence (IV Results)**

| | Married | Has at least 1 Child |
|---|---|---|
| **Instrument Results** | | |
| Co-Residence in 2011 (IV) | -.157*** | -.194*** |
| | (0.013) | (0.027) |
| Rent-Income Ratio in 2021 (z) | -.004*** | -.024*** |
| | (0.001) | (0.005) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.34 | 0.36 |
| Sample Size | 3,764 | 3,764 |

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the state level are reported in parentheses. The sample is the set of young adults from ages 18 to 29 in 2011 for whom we observe outcomes in the 2021 Wave of the PSID. Observations are estimated by Logit models weighted by individual weights. Co-residence (IV) is instrumented using the number of rooms per person in the household of the young adult's parents (not including the young adult themselves if co-residing). The other controls are the same as those reported in Table 2 with the addition of 2011 individual and parental characteristics, except for the outcome itself, and affordability measures that are from 2021.

## Appendix

### *A. A Stylized Model of Young Adults' Co-residence And Testing Hypotheses*

#### *A1. Stylized Framework*

Consider two residence choices: (1) co-reside with parents ($co$), or (2) live independently ($ind$). The young adult's utility that depends on the residence choice $j$ can be derived from a standard consumption-saving problem.[14]

$$u_j(a) = \theta_j\left(r_f a + we - C_j\right), j \in \{co, ind\} \tag{3}$$

where $a$ indicates the housing and financial asset that captures the aggregate wealth of the young adult and their parents. In the case where labor is the only income source of young adults, asset $a$ reflects the housing and financial wealth of the parents. We assume the asset can be saved in a bond at an interest rate of $r_f$ to generate an income flow of $r_f a$. Labor income of the young adult consists of the market wage component $w$, multiplied by the idiosyncratic wage component $e$ that captures socio-demographic characteristics including employment, educational attainment, and marital status in the empirical analysis. $\theta_j > 0$ captures the preference for the residence choice $j$. The housing cost $C_j$ depends on the residence choice and takes the following form.

$$C_j = \begin{cases} \lambda uP & if\ j = co \\ uP = R & if\ j = ind \end{cases} \tag{4}$$

where $P$ and $R$ denote the property value and the rent respectively. $uP$ is the owner-equivalent rent that measures homeowner's housing cost, with $u$ to be the user cost.[15] The housing cost of a renter is the rent $R$, while the housing cost of co-residence is a fraction $\lambda \in [0,1]$ of homeowner's cost $uP$. A smaller $\lambda$ indicates that living with parents has greater benefit of saving on housing cost than living independently.

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[14] The utility is derived from a standard consumption-saving problem with infinite horizons where (1) the labor income $w$ and the risk-free rate $r_f$ are constant; (2) the utility function is linear in consumption, $U_i(c) = \theta_i(1-\beta)c$; (3) intertemporal discount factor is $\beta = 1/(1+r_f)$; (4) the asset and labor income can be used to purchase a bond to earn a gross return of $1 + r_f$.

[15] The user cost depends on the borrowing rate, the property tax rate, the maintenance and insurance cost, and the expected capital gain of the property.

A young adult makes residence choices based on the asset level and preference for residence. The parameter $\theta_{co}$ is not directly observable in the data, so we make a distributional assumption on $\theta_{co} = \theta \sim F_\theta(\theta)$ to capture heterogenous taste of co-residence in the population.

*A2. Co-residence Probability*

Statistically, co-residence probability should coincide with the share of young adults whose optimal choice is co-residence. Given the endowment $(a, e, \theta)$, we discuss two cases and characterize the condition under which co-residence is optimal. In the first case ($\theta \geq 1$), the preference for co-residence is strong so that co-residence is optimal regardless of the asset level. In the second case ($0 < \theta < 1$), whether co-residence is optimal depends on the asset level $a$. The second case which we will focus on from now on is relevant to the empirical analysis, as it highlights the tradeoff in the residence choice.

$$co \succ ind \Leftrightarrow \theta\left(r_f a + we - \lambda uP\right) > r_f a + we - R$$
$$\Leftrightarrow \frac{r_f}{w}a < \frac{1-\lambda\theta}{1-\theta}\cdot\frac{R}{w} - e \equiv G\left(\frac{R}{w}, e, \theta\right) \; or \; \frac{r_f}{w}a < \frac{1-\lambda\theta}{1-\theta}\cdot\frac{P}{w}\cdot u - e = G\left(u\cdot\frac{P}{w}, e, \theta\right) \quad (5)$$

We use the user cost formula ($R = uP$) that equates the rental rate and the owner-equivalent rent to rewrite the optimal condition of co-residence. Both the market factor ($P/w$, $R/w$) and the endowment ($a, e, \theta$) affect the residence choice. The function $G(\cdot)$ is increasing in the rent-income ratio $R/w$, the price-income ratio $P/w$ and the preference for co-residence $\theta$, and is decreasing in the idiosyncratic wage component $e$. The inequality shows that co-residence is optimal when the low asset level is sufficiently low. As asset is assumed to be positive, there exists a minimum level $\theta_0$ above which $G > 0$.

$$\theta_0(R/w, e) = 1 - \frac{1-\lambda}{e\frac{w}{R} - \lambda} \Rightarrow \frac{\partial\theta_0}{\partial(R/w)} < 0, \frac{\partial\theta_0}{\partial e} > 0$$

For $\theta < \theta_0$, inequality (5) does not hold, so co-residence is always sub-optimal. In Appendix Figure A1, we show by a numerical example how the affordability factor affects the choice boundary in (5) and thus the share of individuals choosing co-residence as the optimal living arrangement.

To capture the heterogeneity of asset holding, we assume the log financial income demeaned by the log market wage is normally distributed, $\ln r_f a - \ln w \sim N(\mu, \sigma^2)$, where $\mu$ and $\sigma$ controls the mean and the standard deviation of the log asset distribution, respectively. Given the individual

and market endowments $X$ and by the Law of Large Numbers, the co-residence probability is equal to the share of individuals whose asset and preference for co-residence $(a, \theta)$ satisfy inequality (5).

$$\Pr(j = co|X) = \int_{\theta_0}^{1} \Pr(j = co|\theta, X)\, dF_\theta = \int_{\theta_0}^{1} \Phi\left(\frac{1}{\sigma}\left[\ln G\left(\frac{R}{w}, e, \theta\right) - \mu\right]\right) dF_\theta \qquad (6)$$

where $\Phi(\cdot)$ denotes the cumulative density function of the standard normal distribution. Equation (6) shows that affordability factors could affect the co-residence probability through both the intensive and the extensive margins. First, the integrand $\Phi(\cdot)$ is increasing in the rent-income ratio for all $\theta \in (\theta_0, 1)$, suggesting that the set of individuals showing stronger preference for co-residence $(\theta > \theta_0)$ is more likely to choose co-residence (*i.e.* intensive margin). Second, the threshold $\theta_0$ is decreasing in the rent-income ratio, meaning that more individuals will opt into co-residence (*i.e.* extensive margin).

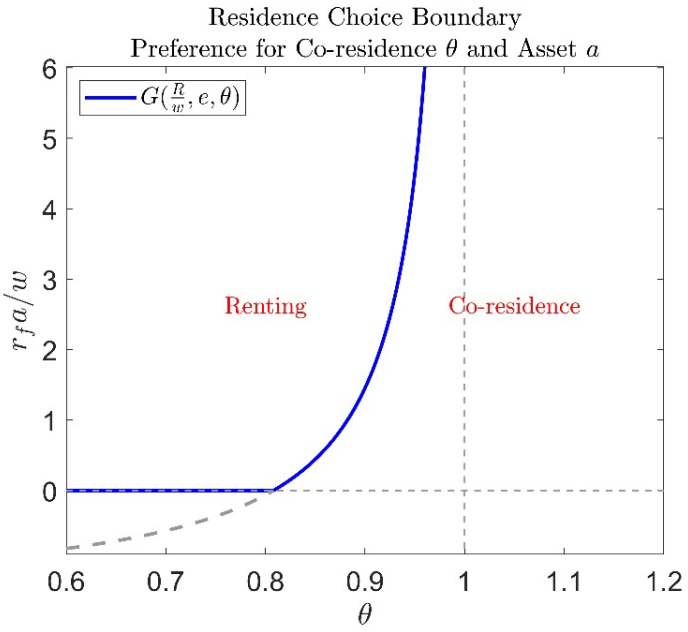


Figure A1. Residence choice boundary: co-residence vs Renting in the space of preference for co-residence $\theta$ and financial asset $a$ scaled by $r_f/w$. Parameters: $r_f = 5\%$, $R/w = 20\%$, $e = 1$, $\lambda = 0.05$, $u = 8\%$, $\theta_{rent} = 1$.

### *A3. Relationship between Affordability Ratio and Co-residence Probability*

We derive the following hypothesis to show the relationship between the co-residence probability and housing affordability factors.

**Hypothesis 1 (Impact of Affordability).** *The co-residence probability is increasing in the rent-income ratio $R/w$, and the price-income ratio $P/w$.*

$$\frac{\partial \Pr(j=co|X)}{\partial(R/w)} = \int_{\theta_0}^{1} \frac{1}{\sigma G}\frac{1-\lambda\theta}{1-\theta}\phi\left(\frac{\ln G-\mu}{\sigma}\right)dF_\theta + f_\theta(\theta_0)\Phi\left(\frac{1}{\sigma}\left[\ln G\left(\frac{R}{w},e,\theta_0\right)-\mu\right]\right)\left(-\frac{\partial\theta_0}{\partial(R/w)}\right) > 0$$

$$\frac{\partial \Pr(j=co|X)}{\partial(P/w)} = \frac{\partial \Pr(j=co|X)}{\partial(R/w)}\cdot\frac{\partial(R/w)}{\partial(P/w)} = \frac{\partial \Pr(j=co|X)}{\partial(R/w)}\cdot\left(u+\frac{P}{w}\frac{\partial u}{\partial(P/w)}\right) > 0$$

where $\phi(x) = \Phi'(x)$ is the probability density function of the standard normal distribution. Hypothesis 1 suggests that the less affordable the housing is, the higher the co-residence probability will be. The first equation indicates that the effect of the rent-income ratio is positive. The first term and the second term represent the intensive margin effect and the extensive margin effect on the co-residence probability, respectively. The marginal effect of the price-income ratio is positive, due to the positive effect of the rent-income ratio and the positive correlation between two affordability factors through the user cost formula $R/w = u\,P/w$. Here, we allow that the user cost can vary with the price-income ratio so that the ratio of two marginal effects $\partial(R/w)/\partial(P/w)$ is not necessarily a constant value $u$.

**Hypothesis 2 (Impact of Wealth).** *The lower the sum of the housing and financial wealth $a$ and the human capital $we/r_f$ , the higher the co-residence probability.*[16]

$$\Pr(j=co|X) = 1 - F_\theta\left(1-\frac{1-\lambda}{R^{-1}(r_f a+we)-\lambda}\right) \Rightarrow \frac{\partial \Pr(j=co|X)}{\partial \ln\left(a+\frac{we}{r_f}\right)} < 0$$

Hypothesis 2 tests the impact of the wealth measured by the sum of the asset $a$ and the human capital $we/r_f$. The latter is defined as the present value of the young adult's labor income. From the expression above, we show whether the negative relationship between the co-residence probability and the wealth depends on the assumption that co-residence results in the saving of the housing cost $\lambda \in (0,1)$. If $\lambda = 1$ (or $\lambda > 1$), the wealth level is expected to have no effect (or a positive effect) on the co-residence choice of the young adult.

[16] We integrate over the set of $\theta$ that satisfies the inequality in (5) to derive the expression.

## *B. Alternative Age Definitions of Young Adults*

### *B1. Young Adults 25-34*

**Table B1-A. Young Adults (25-34) Overall Sample and by Co-Residence Status**

| | Overall Sample | Not Co-Residing | Co-Residing |
|---|---|---|---|
| **Outcomes of Interest** | | | |
| Live with a Parent (%) | 23.3 | NA | NA |
| Married (%) | 36.2 | 44.0 | 10.4 |
| Has Child(ren) (%) | 41.5 | 48.4 | 18.9 |
| **Individual Characteristics** | | | |
| Age | 29.6 | 30.0 | 28.5 |
| | (2.9) | (2.9) | (2.8) |
| Is Female (%) | 47.3 | 50.0 | 38.6 |
| Marital Status | | | |
| Never Married (%) | 58.3 | 69.3 | 97.5 |
| Married (%) | 36.2 | 27.9 | 2.2 |
| Separated, Divorced or Widowed (%) | 5.5 | 2.9 | 0.4 |
| Employment Status | | | |
| Employed (%) | 71.2 | 71.7 | 46.0 |
| Unemployed (%) | 8.6 | 8.8 | 10.1 |
| Not In Labor Force (%) | 20.2 | 19.6 | 43.9 |
| Log Personal Income (2021 $) | 8.7 | 8.7 | 8.4 |
| Educational Attainment | | | |
| Less Than High School (%) | 15.1 | 13.7 | 33.0 |
| High School (%) | 22.9 | 26.4 | 21.5 |
| Some College (%) | 26.4 | 28.8 | 33.0 |
| College (%) | 28.9 | 27.6 | 11.6 |
| Graduate Degree (%) | 6.8 | 3.6 | 1.0 |
| Is Enrolled in High School or College (%) | 6.8 | 6.8 | 6.9 |
| Student Loans (%) | 31.2 | 32.5 | 27.0 |
| Race and Ethnicity | | | |
| Non-Hispanic White (%) | 54.0 | 56.0 | 52.3 |
| Black (%) | 12.9 | 12.7 | 15.4 |
| Hispanic (%) | 20.7 | 22.3 | 23.0 |
| Other (%) | 12.4 | 9.0 | 9.3 |
| **Parental Characteristics** | | | |
| Marital Status | | | |
| Never Married (%) | 7.9 | 9.2 | 8.6 |
| Married (%) | 77.8 | 74.6 | 77.8 |
| Separated, Divorced or Widowed (%) | 14.3 | 16.3 | 13.6 |
| Educational Attainment | | | |
| Less Than High School (%) | 36.3 | 32.9 | 26.2 |
| High School (%) | 13.4 | 12.8 | 12.5 |
| Some College (%) | 17.8 | 18.7 | 18.8 |
| College or Graduate Degree (%) | 32.5 | 35.7 | 42.5 |
| House Type | | | |
| Single Family, Town Home, or Duplex | 83.2 | 84.8 | 85.5 |
| Multifamily | 11.7 | 9.9 | 11.1 |
| Mobile Home or Other | 5.1 | 5.3 | 3.3 |
| Own (%) | 68.9 | 68.1 | 70.6 |
| # Rooms in House | 5.7 | 5.5 | 6.1 |
| | (2.6) | (2.6) | (2.4) |
| # People in Household | 2.9 | 2.4 | 3.7 |
| | (1.6) | (1.4) | (1.6) |
| Family Income (2021 $1K) | 114.3 | 114.6 | 113.8 |

| | | | |
|---|---|---|---|
| | (115.3) | (125.1) | (96.4) |
| Housing Equity | 201.4 | 223.4 | 164.1 |
| | (307.6) | (341.6) | (234.4) |
| Non-Housing Net Worth | 450.5 | 545.9 | 288.7 |
| | (1,629.7) | (1,908.7) | (969.3) |
| **Market Characteristics** | | | |
| Rent-Income Ratio (%) | 20.4 | 20.2 | 21.0 |
| | (2.9) | (2.9) | (3.0) |
| Price-Income Ratio | 4.6 | 4.5 | 5.0 |
| | (1.7) | (1.7) | (1.9) |
| Median Annual Rent (2021 $1K) | 15.1 | 14.8 | 15.9 |
| | (4.1) | (4.0) | (4.3) |
| Median House Value (2021 $1K) | 356.2 | 343.2 | 397.8 |
| | (196.7) | (186.6) | (220.5) |
| Median Household Income (2021 $1K) | 73.6 | 73.0 | 75.5 |
| | (14.9) | (14.5) | (15.7) |
| Unemployment Rate (%) | 6.5 | 6.4 | 6.8 |
| | (1.9) | (1.9) | (2.1) |
| N | 4,040 | 3,099 | 941 |

Note: the standard deviations of continuous variables are reported in the parentheses below the means. The means of the binary variables (in percentage point) are reported, with the standard deviations suppressed in the table. The sample is the set of young adults from ages 25-34 (inclusive) from the 2021 PSID with information for all variables of interests. Means and standard deviations are weighted by the individual survey weights.

**Table B1-B Logit Models of Co-residence: Marginal Probability of Young Adults (25-34) Who Live with their Parents, 2021**

| | Rent to Income | Price to Income |
|---|---|---|
| **Market Characteristics** | | |
| Affordability Factor (Rent-Income Ratio or Price-Income Ratio, Z transformed) | .036*** | 0.030*** |
| | (0.001) | (0.001) |
| Unemployment Rate (%) | .009*** | .011*** |
| | (0.001) | (0.001) |
| **Individual Characteristics** | | |
| Log Individual Wages (2021 $1K) | .015*** | .015*** |
| | (0.002) | (0.002) |
| Age | -.015*** | -.016*** |
| | (0.002) | (0.002) |
| Is Female | -.056*** | -.056*** |
| | (0.003) | (0.003) |
| *Race and Ethnicity (Non-Hispanic White = 0)* | | |
| Black | -.13*** | -.13*** |
| | (0.002) | (0.002) |
| Hispanic | -.020*** | -.010*** |
| | (0.001) | (0.001) |
| Other | .045*** | .043*** |
| | (0.007) | (0.006) |
| *Marital Status (Never Married = 0)* | | |
| Married | -.225*** | -.226*** |
| | (0.073) | (0.074) |
| Separated, Divorced or Widowed | -.173*** | -.172*** |
| | (0.011) | (0.011) |
| *Have Children* | -.167*** | -.164*** |
| | (0.001) | (0.001) |
| *Employment Status (Employed = 0)* | | |
| Unemployed | .075*** | .077*** |
| | (0.008) | (0.008) |
| Not In Labor Force | .143*** | .143*** |
| | (0.002) | (0.002) |
| *Education (Less Than High School = 0)* | | |
| High School | -.130*** | -.135*** |
| | (0.025) | (0.028) |
| Some College | -.152*** | -.161*** |
| | (0.013) | (0.013) |
| College | -.235*** | -.237*** |
| | (0.024) | (0.026) |
| Graduate Degree | -.117*** | -.126*** |
| | (0.017) | (0.018) |

| | | |
|---|---|---|
| *Enrolled in High School or College* | .073*** | .065*** |
| | (0.004) | (0.004) |
| *Student Loan (No =0 )* | -.093*** | -.089*** |
| | (0.002) | (0.002) |
| **Parental Characteristics** | | |
| *Marital Status (Never Married = 0)* | | |
| Married | .084*** | .083*** |
| | (0.002) | (0.002) |
| Separated, Divorced or Widowed | -.002 | -.003 |
| | (0.000) | (0.000) |
| *Education (Less Than High School = 0)* | | |
| High School | -.033*** | -.031*** |
| | (0.004) | (0.004) |
| Some College | -.013*** | -.003 |
| | (0.003) | (0.003) |
| College or Graduate Degree | -.110*** | -.107*** |
| | (0.023) | (0.018) |
| *House Type (Single Family= 0)* | | |
| Multifamily | -.122*** | -.128*** |
| | (0.012) | (0.013) |
| Mobile Home or Other | -.058*** | -.088*** |
| | (0.005) | (0.070) |
| *Own* | .110*** | .075*** |
| | (0.010) | (0.011) |
| *# of Rooms per Person in Household* | .066*** | .066*** |
| | (0.002) | (0.002) |
| *Log Family Income* | .027*** | .027*** |
| | (0.003) | (0.003) |
| *Log Housing Equity* | .008*** | .005*** |
| | (0.001) | (0.001) |
| *Log Non-Housing Wealth* | -.011*** | -.012*** |
| | (0.003) | (0.003) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.29 | 0.29 |
| Sample Size | 4,040 | 4,040 |

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the state level are reported in parentheses. The sample is the set of young adults from ages 25-34 from the 2021 Wave of the PSID. Observations are estimated by Logit models weighted by individual weights.

**Table B1-C. Logit Models of Marriage-Childbearing Outcomes: Marginal Probability of Young Adults (25-34) Co-residence and Market Affordability, 2021**

| | Married | Has at least 1 Child |
|---|---|---|
| **A. OLS Results** | | |
| Co-Residence | -.262*** | -.233*** |
| | (0.008) | (0.006) |
| Rent-Income Ratio (z) | -0.002*** | -.017*** |
| | (0.001) | (0.001) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.19 | 0.20 |
| Sample Size | 4,040 | 4,040 |
| Co-Residence | -.260*** | -.227*** |
| | (0.004) | (0.006) |
| Price-Income Ratio (z) | -.008*** | -.031*** |
| | (0.001) | (0.001) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.20 | 0.20 |
| Sample Size | 4,040 | 4,040 |
| **B. Instrument Results** | | |
| Co-Residence (IV) | -.142*** | -.161*** |
| | (0.008) | (0.010) |
| Rent-Income Ratio (z) | -.002*** | -.015*** |
| | (0.001) | (0.001) |
| State FE | Yes | Yes |
| Pseudo R2 | 0.27 | 0.26 |
| Sample Size | 4,040 | 4,040 |
| F | 97.1 | 97.1 |
| Co-Residence (IV) | -.136*** | -.159*** |
| | (0.008) | (0.011) |
| Price-Income Ratio (z) | -.006** | -.038*** |
| | (0.001) | (0.001) |
| State FE | Yes | Yes |
| Pseudo R2/Adj. R2 | 0.27 | 0.26 |
| Sample Size | 4,040 | 4,040 |
| F | 98.3 | 98.3 |

Note: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the state level are reported in parentheses. The sample is the set of young adults from ages 25-34 from the 2021 Wave of the PSID. Observations are estimated by Logit models weighted by individual weights. Co-residence (IV) is instrumented using the number of rooms per person in the household of the young adult's parents (not including the young adult themselves if co-residing). The other controls are the same as those reported in Table 2, except for the outcome itself.