BANCA D'ITALIA

EUROSISTEMA

Temi di Discussione

(Working Papers)

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November 2015

Number 1038

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ISSN 1594-7939 (print)
ISSN 2281-3950 (online)

Printed by the Printing and Publishing Division of the Bank of Italy

YOUNG ADULTS LIVING WITH THEIR PARENTS AND THE INFLUENCE OF PEERS

by Effrosyni Adamopoulou* and Ezgi Kaya**

Abstract

This paper focuses on young adults in the US living with their parents and studies the role of peers. Using data from the National Longitudinal Study of Adolescent Health we analyse the influence of high school friends on the nest-leaving decision of young adults. We achieve identification by exploiting the differences in the timing of leaving the parental home among peers, the individual-specific nature of the peer groups, and by including school and grade fixed effects. Our results indicate that there are statistically significant peer effects on the decision of young adults to leave parental home. This is true even after we control for labour and housing market conditions and for a comprehensive list of individual and family-of-origin characteristics that are not usually observed by the econometrician. We discuss various mechanisms and we confirm the robustness of our results through a placebo exercise. Our findings correspond with the increasing trend of young adults living with their parents that has been observed in the US during the last 50 years.

JEL Classification: D10, J12, J60, Z13.
Keywords: peer effects, friends, living arrangements, leaving parental home.

Contents

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1 Introduction[1]

The generation that reached adulthood around the turn of the 21^{st} century, also known as the "millennials", have recently received a lot of attention by the economics literature as they were the ones that experienced the Great Recession in the beginning of their professional careers (See for example Kahn, 2010; Oreopoulos et al., 2012). These studies show that high initial unemployment rates have negative short- and long-run effects on the labor market outcomes of those who graduated from college during the Great Recession. High youth unemployment rates during the Great Recession have also affected the living arrangements of young adults. In particular, the proportion of young adults living with their parents in the US has increased as unemployed young adults have seeked for insurance at their parental home either by not leaving it or by returning to it (Dyrda, Kaplan, and Ríos-Rull, 2012; Kaplan, 2012; Bitler and Hoynes, 2015; Hotz et al., 2015; Matsudaira, 2015). However, almost five years after the end of the Great Recession in the US, even though labor market conditions have greatly recovered, the proportion of young adults living with their parents remains high and in the age group 25-29 it keeps on increasing (Fry, 2015 and Figures 1a and 1b).

In this paper we study peer effects on the living-arrangements of young adults in a dynamic framework. We use a unique longitudinal dataset on a representative sample of adolescents in the US followed until young adulthood which contains detailed information on demographic and other individual characteristics, family of origin, labor and housing market conditions at the neighborhood[2] as well as high school friends.[3] In this way we are able to observe the living arrangements of the respondents and their friends (peer group) in the transition to adulthood. We achieve identification by exploiting the differences in the timing of leaving the parental home among peers and by controlling for school (network) and grade (cohort) fixed effects. The differences in the timing of nest-leaving between the respondents and their friends enable us to alleviate the reflection problem as we can identify who moved first and who followed her/his peers. Moreover, in our setting the definition of

[1] We are grateful to Nezih Guner for his valuable advice and guidance. Many thanks to David Card, Ana Rute Cardoso, Francesco Fasani, Lidía Farré, Joan Llull, Alfonso Rosolia, Giovanna Vallanti, the participants in the 2012 AIEL Conference in Caserta, in the 2012 SAEe in Vigo, and in the 2013 RSA in Bologna for useful suggestions. Ezgi Kaya acknowledges financial support from the Spanish Ministry of Science and Innovation through grant "Consolidated Group-C" ECO2008-04756 and FEDER. The views expressed in this paper are those of the authors and do not necessarily reflect those of the Bank of Italy. All the remaining errors are ours.

[2] Neighborhood is defined by census block unit.

[3] These adolescents were interviewed in 1994 while at high school and then again in 2001 while in young adulthood (average age 21.5). Therefore, they can be broadly defined as millennials.

the peer group is based on friendship nominations and is potentially different for each respondent. In this way we are able to exploit variation within schools/grades/neighborhoods. School fixed effects allow us to account for correlated effects, i.e., common factors that may have affected both the respondent and the friends. We find that there are positive and statistically significant peer effects in the living arrangements of young adults. According to our estimates having friends that are still all living with with their parents will increase the individual probability of living with parents by 5.9 percentage points relatively to having no friends that are still living with their parents. Although our analysis does not cover the Great Recession and the period after it, the existence of positive peer effects is in line with the increasing trend in the proportion of young adults living with their parents that has been observed in the US during the last 50 years (See Matsudaira, 2015 for a discussion of this trend). In the presence of peer effects, the increasing trend may persist regardless of the labor and housing market conditions.

Leaving the parental home is often associated with economic independence and family formation.[4] This is why there is a large literature that investigates its determinants. Some studies emphasize the importance of socioeconomic conditions. It is well documented that there are substantial gender, race, and socioeconomic class differentials in living arrangements. Women stop living with their parents earlier than men (Goldscheider and DaVanzo, 1985; Goldscheider and Waite, 1991; Ward and Spitze, 1992; White, 1994). In terms of racial or ethnical differences, African Americans and Hispanics are substantially more likely to live in extended families than non-Hispanic whites (Beck and Beck, 1989). Moreover, coresidents are more likely to come from relatively poorer and less educated families than non-coresidents (Rosenzweig and Wolpin, 1993). In our analysis, apart from gender and race, we are able to control for characteristics that are usually unobserved, such as self-esteem, and the intention of the respondents to leave parental home when they were adolescents. Regarding the family of origin, apart from information on family composition, financial situation, and parental education, we observe the quality of the respondents' relationship with parents and whether parents encouraged them to be independent during adolescence. Accounting for characteristics of the family of origin is important as both family and friends are likely to influence individual behavior (Fernández-Villaverde, Greenwood and Guner

[4] See Eurofound (2006) for the consequences of late emancipation of young adults on future geographic and job mobility and Esping-Andersen (1999), Manacorda and Moretti (2006), Giuliano (2007), and Chiuri and Del Boca (2010) for the possible consequences of the late emancipation of young adults in Southern Europe on the labor force participation, unemployment, and fertility rate.

2014).

Beside demographic and socioeconomic characteristics, housing market conditions and access to mortgage debt significantly affect the living arrangements of the youth (Haurin, Henderschott and Kim, 1993; Ermisch and Di Salvo, 1997; Ermisch, 1999; Martínez-Granado and Ruiz-Castillo, 2002; Martins and Villanueva, 2009; Modena and Rondinelli, 2011). Regional differences in labor market conditions are also likely to play a role (Card and Lemieux, 2000). In our data we have information on local housing and labor market conditions of the current residence and the original residence (parental home).

Other studies point out the strong heterogeneity across countries regarding the timing of leaving the parental home. What emerges in cross country comparisons is that young adults in the U.S. tend to leave parental home relatively earlier than their European counterparts.[5] Given that the cross-country heterogeneity in living arrangements is persistent, peer effects may have acted as a reinforcing mechanism. Our results are also related to the findings of Giuliano (2007) who finds that cultural norms influence the living arrangements of young adults using data on second-generation immigrants in the US. We complement her findings since peer pressure can be considered as another dimension of culture.

There is a growing literature that documents the importance of peer decisions and peer characteristics on individual behavior, mainly focusing on educational outcomes and risky health behaviors.[6] Recent studies also provide evidence on peer influence on marital decisions (Adamopoulou, 2012), fertility (Hensvik and Nillson, 2010; Ciliberto, Miller, Nielsen, and Simonsen, 2015; Yakusheva and Fletcher, 2015) and the probability of finding a job (Cingano and Rosolia, 2012; Cappellari and Tatsiramos, 2015). Although family formation, college attendance, and employment are all intermediate choices related with the nest-leaving decision, this is the first study that investigates peer group effects on living arrangements of young adults in a unified framework. Even after controlling for these mediating outcomes, we find a significant peer effect on living arrangements.

Our analysis also shades light on the underlying mechanisms. We find that complementarities between friends that move together to the same neighborhood may be just a small

[5] See Kiernan (1986) for an international comparison of young adults' living arrangements in Denmark, Great Britain and the United States; Yi, Coale, Choe, Zhiwu and Li (1994) for a comparision of year age-specific net rates of leaving home for men and women in China, Japan, South Korea, the United States, Sweden and France; Iacovou (2002) for living arrangements of young adults in Europe and the United States; Di Stefano (2008) for a discussion of the late youth emancipation in Italy.

[6] See for example Hoxby, 2000; Sacerdote, 2001; Calvó-Armengol, Patacchini and Zenou, 2009; Boucher, Bramoullé, Djebbari, and Fortin, 2014) for peer effects in educational outcomes and Gaviria and Raphael, 2001; Powell, Tauras and Ross, 2005; Lundborg, 2006; Clark and Lohéac, 2007; Cohen-Cole and Fletcher, 2008; Card and Giuliano, 2013; Fletcher, 2010 and 2011 for peer effects in health-related behaviors.

part of the story. We also reveal that more than half of the emancipated young adults still live within a 15 km radiant from their parental home. A placebo exercise using friends that left the parental home after the respondent reassures us that the peer effect is not due to correlated effects. We also find that popularity of the young adult favors emancipation but this does not undermine the peer effect in any way. Further robustness checks consistently suggest that there is a significant positive peer effect on the living arrangements of young adults. We then show that peer effects are not homogeneous across different demographic and socio-economic groups. In particular, we find evidence that females tend to conform to the social norm more than males and that peer pressure plays a very important role for non-whites or hispanics. However, the peer effect is not statistically significant for young adults coming from low-income families.

The remainder of the paper is organized as follows. The next section describes the data set used. Section 3 puts forth the identification strategy while Section 4 presents the main findings. Section 5 discusses the potential mechanisms and some mediating outcomes. Section 6 presents a placebo exercise and a number of robustness checks. The final section concludes.

2 Add Health data

The data we use in this paper bring together information on high school friends and their coresidence with parents during young adulthood from the National Longitudinal Study of Adolescent Health (hereinafter Add Health).[7] Add Health is a longitudinal study of a nationally representative sample of adolescents in grades 7-12 in the United States during the 1994-95 school year. In 1994-95 the study started with an in-school questionnaire that was administered to more than 90,000 students from 80 high schools and 52 middle schools. A subsample of them (around 20,000) were also asked to complete in-home interviews and were followed in three subsequent waves. The respondents answered questions about their family background, school performance, health-related questions as well as area of residence and other coresident members of the household. In the first wave respondents were asked to

[7]This research uses data from Add Health, a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the Add Health website (http://www.cpc.unc.edu/addhealth). No direct support was received from grant P01-HD31921 for this analysis.

nominate up to five best male and five best female friends. In the same wave, adolescents' parents were also interviewed about family and relationships, and as a result, we can obtain information on their characteristics as well. However, parents were not interviewed in the subsequent waves so it is not possible to update this information.

In this analysis, we use the in-home interview data on adolescents and the information about their friends in 1994-1995 (Wave I) when the adolescents were aged 12-19[8] and the follow-up data in 2002-2003 (Wave III) when the respondents have become young adults aged 19-26.[9] Given that the median age at leaving parental home is around 21-22 for females and 22-24 for males (Iacovou, 2002) we focus on coresidence with parents when they are at this age.[10] We determine the coresidence with parents using the information on the household roster in both waves. Young adults are defined as coresidents with parents, if at least one of the household members is identified as either father, mother's husband, mother's partner, mother, father's wife or father's partner and non-coresident otherwise.[11]

Our sample consists of respondents who completed both Wave I and Wave III in home-surveys and provided information on household roster in both waves. We restrict our sample to respondents who were living at least with one parent in Wave I.[12] In Wave III, we only consider the respondents that live in a private accommodation (with parents, with relatives or non-relatives or living alone) or in a dormitory and we exclude those that are homeless or live in group quarters, whose behavior might reflect necessity and not a voluntary decision. Finally, we restrict the sample to those who provided usable information for at least one nominated friend.

Add Health also includes regional level variables from the Census that correspond to the state, county, tract and block of residence of the respondents. We use the unemployment rate at the block of residence in Wave I as a proxy of the labor market conditions. Similarly,

[8] There were also a few outliers (around 2 per cent) aged 11, 20 or 21 years old.

[9] Add Health data have been used in the literature in order to analyze peer effects but most studies focus only on behaviors while respondents are still at school (Wave I). The only exceptions that study a more dynamic aspect of peer effects using subsequent waves of Add Health are Bifulco, Fletcher and Ross (2011), Patacchini, Rainone and Zenou (2012), Adamopoulou (2012) and Yakusheva and Fletcher (2015).

[10] Wave II in-home interviews were conducted in 1996, about one year after Wave I and adolescents in grades 8-12 (aged 13-20) were interviewed. Since in Wave II more than 90% of the adolescents were still below the legal age for children to be released from parental authority, we rather focus on the living arrangements in Wave III. On the other hand, Wave IV in home interviews were conducted in 2007-2009, almost 14 years after Wave I, and the respondents were 26-33 years old. However, it is unlikely that high school friendships are maintained for so many years after high school. Hence, we study peer effects in Wave III, only 8 years after Wave I, when friendships are more likely to still hold. There is very limited information on whether high school friends are still friends in Wave III. However, there is clearly a selection issue regarding the continuation of friendships after high school. Therefore, we consider all friends that the respondents nominated in Wave I.

[11] Mother and/or father can be biological, step, adoptive or foster.

[12] More than 94 percent of the adolescents in Wave I were living with at least one parent (14,247 of 15,088 valid cases).

we use a dummy for urban/rural areas and the proportion of vacant housing units at the block of residence in Wave I as proxies of the housing market conditions. The proportion of vacant housing units proxies housing costs through the demand for housing and is negatively correlated with the median gross rent of renter-occupied housing units that is available for a very reduced part of our sample.[13]

Information on friendships comes from Wave I (in-school or in-home questionnaire). In the analysis we use the in-home friendship nominations. As mentioned before, in Wave I, data collectors assigned an identification number to each student and provided a list of all students to the respondents in order to identify up to five male friends and up to five female friends.[14] We did not require that nominations were mutual when constructing the peer group of reference for each respondent. Those that the respondent nominated as friends are likely to influence him/her even if they, in turn, did not nominate him/her as a friend. As long as nominated friends were also interviewed (i.e. they were part of the random subsample who completed the in-home survey), one can construct for each respondent a set of friends with detailed Add Health information. Given that the data represent a subsample of students within schools, not all nominated friends are interviewed and as a result, the measures of friends' characteristics would be imperfect. However, this is less of a concern since the sampling scheme for the in-home interview was random.

In our dataset there are 4,045 respondents with non missing coresidence information that have at least one friend with non missing coresidence information as well. Our sample is reduced to 3,094 after dropping individuals with missing information on key demographic, individual, family of origin, labor or housing markets variables. On average, each respondent has 3.4 nominated friends for whom we also have available information. Table 1 shows the descriptive statistics for young adults that still coreside with their parents and for non-coresidents.[15] For the description of the variables see Table A.1 in the Appendix.

In line with findings from earlier studies Table 1 shows that there are substantial gender, racial and ethnic differences in living arrangements with males, non-whites or hispanic being more likely to live with the parents than females and non-hispanic whites. Parental

[13] In the data there are unique identifiers for the census block, tract, county and state of residence in each wave. However, all these are anonymous, so we cannot merge regional level variables from external sources.

[14] Respondents were also asked to nominate romantic partners out of the school roster. In the case that a friendship coincided with a romantic partnership this friendship was excluded from the friends' list.

[15] The category of coresidents includes also those that might have changed place of residence together with their parents and continued living with them in the new place of residence and the ones who might have moved out from parental home between Wave I and Wave III but have returned back home and co-reside with their parents in Wave III.

characteristics also make a difference in living arrangements of young adults; coresidents are more likely to come from financially-constrained families and to have less educated mothers compared to non-coresidents. However, young adults coming from one-parent families are less likely to live with the parent. Lastly, compared to non-coresidents, coresidents are more likely to live with their families in urban areas and to have had a good relationship with their parents during adolescence.

3 Identification

Identifying peer effects is a challenging task (See Blume et al., 2011 and Angrist, 2014 for a detailed discussion). Peer effects refer to individual behavior (in our case nest-leaving) being causally influenced by the peer group behavior. However, the individual and the peer group may behave in the same way because they are both subject to similar environments (correlated effects) or due to endogenous friendship formation (homophily or sorting). In our setting both the individual and her/his friends attend the same school and may have been affected by the same unobserved shock. Moreover, friendship creation is usually characterized by homophily, i.e., people tend to choose friends similar to themselves. Our identification strategy exploits some unique characteristics of the Add Health data, the richness of the available information, as well as the timing of friendship formation. In the data (in-school nominations) we can observe the whole network of friends (friends, friends of friends, etc.), which in most cases coincides with the school. Therefore, we are able to control for the correlated effects by including school fixed effects. School dummies may capture unobserved shocks that affected all students in each school (e.g. a new college in the nearby) or a piece of information that was shared among all members of the network (e.g. a new mobility promoting program). However, the respondents and their peers may be subject to similar environments other than the school. It is likely that they live in the same neighborhood and that in general they face similar local conditions that could affect their nest-leaving behavior. This is why we also control for labor and housing market conditions in the block of the original residence (parental home). The labor and the housing market conditions in the block of the original residence are exogenous variables. Unlike the destination that emancipated young adults choose where to move to, the block of the parental home was not a choice made by the youth.

Regarding homophily, one could argue that as adolescents grow up and become young

adults, they make new friends, and if they move out of the parental home, they are more likely to meet and choose friends that have also moved out of the parental home. In the current analysis we consider friends since high school and we study the living arrangements of the respondents 7-8 years after, assuming that high school friendships have been maintained. This may underestimate the peer effect but it also alleviates the concern of endogenous friendship formation. Moreover, we are able to control for an extensive list of characteristics of the respondents that are usually unobserved like self-esteem and the intention to leave parental home during adolescence that may have influenced the selection of friends during high school.

A problem similar to homophily is sorting. In particular, if a specific type of parents choose a specific type of school, adolescents would sort into schools according to parental characteristics that could affect living arrangements. In the analysis we control for household income, maternal education, but also for characteristics that are closely related to nest-leaving and are usually unobserved (amount of housework done by the adolescent, how good was the relationship of the adolescent with the parents, and whether the mother was encouraging the adolescent to be independent). Therefore, sorting is less of a concern in our study.

Another challenge is the so-called "reflection problem" (Manski, 1993). Peer group behavior is by definition the aggregation of individuals' behaviors and as such any causal interpretation is difficult. The problem arises as peers are likely to affect the respondent and at the same time the respondent is likely to affect her/his peers. In our setting we are able to exploit the differences in the timing of leaving the parental home among the individuals and their peers in order to overcome this problem. In Wave III, when the respondents are young adults, there is information on the date (month and year) of the move to the current address.[16] We assume for those respondents who are not living with the parents in Wave III, the date they moved out of the parental home for the first time coincides with the date of the move to the current address. In other words, if a respondent changed residence before moving to the current address we assume that she/he did so together with the parents and only the last move to the current address corresponds to individuals moving out of the parental home (Figure 2 depicts the details of our assumption). Actually, 72 per cent of the

[16] In Wave III the respondents were also asked to fill in a calendar of geographical mobility with all the states they have lived in and the month and year of the move. This calendar contains information about all the states that the respondent has lived in during his life, and the year and month of the move to each state. However, there is no information on other coresiding members (parents, partners or friends) so as to know whether the respondent moved together with the parents or not.

respondents moved to the current address in the last 3 years, i.e. between 1999 and 2001, when they were on average 21 years old. This coincides with the median age at which young adults leave parental home in the U.S. (Iacovou, 2002). Hence, our assumption is likely to hold.

In this way, we can use a dynamic framework and achieve identification as in Adamopoulou (2012), Cingano and Rosolia (2012) and Cappellari and Tatsiramos (2015).[17] In particular, by comparing the date of the move of the individuals and their friends, we treat as emancipated, only the friends that moved out of the parental home no later than the respondent. Friends that left the parental home after the respondent enter the regressions as non-emancipated since they were still living with the parents at the time the respondent moved out of the parental home. In order to obtain unbiased estimates we need to assume that the individuals are not forward looking. They are affected only by the past actions of their friends. A placebo exercise presented in Section 6 is supportive of this assumption.

Another feature that helps us overcome the reflection problem is the individual-specific nature of the peer groups in our setting. Peers are usually defined on the basis of some measure of proximity (neighbours, classmates, coworkers etc.) and the individual behavior is regressed on the behavior of everybody else but the respondent. In our case, peers are nominated friends, and as a result the peer group is likely to differ among respondents from the same school/grade/neighborhood. This generates more variation among people within the same school/grade/neighborhood.

4 Regression analysis

We are now able to implement our identification strategy on the outcome of interest, i.e. the coresidence of young adults with their parents. To determine the peer group effects on young adults' coresidence with parents, our full specification is as follows:

[17] Solutions that have been proposed in order to identify peer effects consist of using instrumental variables techniques or using panel data (See Bramoullé, Djebbari, and Fortin, 2009; Boucher et al., 2014). Examples of identification strategies with instrumental variables in a static framework include Ciliberto et al. (2015) that use the fertility of the siblings of one's colleagues as an instrument for the fertility of one's colleagues, and Fletcher (2011) that uses the alcohol consumption of the parents of one's classmates as an instrument for the alcohol consumption of one's classmates. De Giorgi, Pellizzari, and Redaelli (2010), and Patacchini, Rainone and Zenou (2012) exploit the information about the whole network of friendships and instrument the behavior of the respondent's friends with the characteristics of friends of friends who are not directly linked with the respondent.

$$l_{ist} = \overbrace{\gamma(\bar{l}_j)_{ist_-}}^{\text{peer effects}} + \underbrace{\sum_{m=1}^{M}\beta_m x^m_{ist_0}}_{\text{demo \& family}} + \underbrace{\sum_{n=1}^{N}\beta_n f^n_{ist_0}}_{\text{other indiv.char}} + \underbrace{\sum_{k=1}^{K}\beta_k b^k_{ist_0}}_{\text{block char.}} + \underbrace{\sum_{m=1}^{M}\theta_m(\bar{x}_j)^m_{ist_0}}_{\text{average peer demo \& family}} + \alpha_s + \varepsilon_{ist}, \quad (1)$$

where l_{ist} is the binary variable for the coresidence status of young adult i at time t (Wave III) who had attended high school s. l_{ist} takes the value 0 if a young adult who was living with at least one parent when she/he was adolescent, is not living with the parents anymore; and the value 1 if she/he continues living with at least one parent. $(\bar{l}_j)_{ist_-}$ is the percentage of peers (i's nominated friends, denoted with j) that live with their parents during young adulthood. This percentage is computed after taking into account the differences in the timing of nest-leaving between individual i and her/his peers. Therefore, peers that left the parental home after individual i are counted as coresidents with parents (we denote this adjusment with the subsctipt t_-). Given that the peer group is composed by nominated friends, the number and the identity of its members is individual specific. γ is the coefficient of interest, i.e. the peer effect that we are trying to estimate.

Our full specification includes a comprehensive list of controls that are predetermined (they are measured at Wave I that we denote with the subscript t_0). $\sum_{m=1}^{M} x^m_{ist_0}$ is a vector of demographics and family-of-origin characteristics that might affect the coresidence behavior of young adults. Those variables include gender, age, and race of the respondents as there are many gender and racial differences in living arrangements (Goldscheider and DaVanzo, 1985; Ward and Spitze, 1992; Chiuri and Del Boca, 2010; and Beck and Beck, 1989).[18] It also includes a dummy on whether parents were financially constrained, maternal education, a dummy for one-parent families, and the number of siblings. As shown in the literature these variables are influential in the coresidence behavior of young adults (Rosenzweig and Wolpin, 1993; Goldscheider and Waite, 1991; and White, 1994).

In addition to these standard demographic and family-of-origin variables, we include another set of individual characteristics, $\sum_{n=1}^{N} f^n_{ist_0}$ that are usually unobserved and refer to the relationship of the respondents with their parents during adolescence. The variables

[18] For the detailed description of variables see Table A.1 in the Appendix.

that we include are the amount of housework that the respondents used to do in Wave I, how good the respondents were considering their relationship with the parents at that time, whether the mother was encouraging the respondent to be independent during adolescence and a measure of the respondents' self-esteem during adolescence. Our prediction is that if the young adult had a bad relationship with the parents, used to do many household chores when she/he was young, had a mother that used to foster independence or had high self-esteem, this would make her/him less likely to continue living with the parents during young adulthood.

We augment our specification with the vector $\sum_{k=1}^{K} b_{ist_0}^k$ that contains labor and housing market variables at the block of the parental home. High housing cost (Haurin et al., 1993; Ermisch and Di Salvo, 1997; Ermisch, 1999; Martínez-Granado and Ruiz-Castillo, 2002; and Martins and Villanueva, 2009) and high unemployment rates (Card and Lemieux, 2000) are likely to discourage young adults' emancipation. In particular we include the unemployment rate that corresponds to the block of residence in Wave I (Census block level), a dummy for urban/rural areas and the proportion of housing units that were vacant in the block as a proxy of the housing cost. The proportion of vacant housing units proxies the housing cost through the demand for housing and is negatively correlated with the median gross rent.

The parameter vector θ_m captures the influence of the average peer demographics and average peer family characteristics on young adult's coresidence status. α_s are school dummies that control for network fixed effects. Networks are larger than the set of nominated friends as they include the friends of the friends, the friends of the friends of friends, etc.[19] In many cases the entire network of each student coincides with the school. Therefore, school dummies are a reasonable way to account for the network of young adults. Lastly, in the full specification we include grade dummies instead of the age of young adults. This also allows us to account for cohort fixed effects.

Table 2, column 1 presents the results of a linear probability model where we control only for demographics and characteristics of the family of origin and where we simply include state fixed effects. There is a large, positive, and statistically significant peer effect. The size of the peer effect decreases as soon as we include school dummies (Table 2, column 2). This shows that accounting for network fixed effects is crucial. The peer effect is robust to the inclusion of other individual characteristics that refer to the relationship of the respondents with their parents during adolescence (Table 2, column 3) and to labor and housing markets'

[19] See Jackson (2008) for further details.

characteristics (Table 2, column 4). In our preferred specification (Table 2, column 5) we also include grade (cohort) fixed effects instead of age, and the estimated coefficient of the peer effect is statistically significant and equal to 0.059.[20] According to our estimates an increase of one standard deviation in the percentage of friends that still live with their parents will increase the individual probability of living with the parents by 2.5 percentage points. This increase in peer behavior represents an increase in individual behavior of about 5.2 percent of its standard deviation (which is 0.49) which implies that the influence of peers on young adults' living arrangements is not negligible. Finally, when we also account for friends' characteristics, the peer effect is robust and increases slightly in size (Table 2, column 6).

But who are the ones who are influenced by their peers? Is there a group of individuals that is totally unaffected? In order to answer these questions we analyze separately different groups of individuals with respect to gender, household income, and race. Table 3, columns 1 and 2 present the estimates of the model (preferred specification) separately by gender. Although the magnitude of the peer effect is similar, its coefficient is statistically significant only for females. This finding may indicate that females tend to conform to the social norm (i.e. the peer behavior) more than males.

The results are more clear-cut in the case of household income and race/ethnicity. We run the model separately for young adults coming from relatively wealthy families (household income above the median) and for young adults coming from relatively poor families (household income below the median). There is a very large peer effect only on young adults that come from relatively wealthy families (Table 3, column 3). By contrast, the living arrangements of young adults coming from relatively poor families are completely unaffected by peers (Table 3, column 4). This result might reflect the fact that one can actually move out of the parental home only if there are enough financial resources. We repeat the exercise for Non-hispanic whites and for Non-whites or Hispanics (African, Native, Asian, or Hispanic Americans) and the results are striking (Table 3, columns 5 and 6). The peer effect is statistically significant only in the case of Non-whites or Hispanics and large in magnitude. This implies that peer pressure plays a more important role in the case of minorities compared to that of Non-hispanic whites.

[20] See Table A2 in the Appendix for the results of the full specification. Going through the coefficients, we observe that being a female, coming from one-parent family and doing a high amount of housework during adolescence decrease the probability of living with the parents during young adulthood. Housing conditions also affect living arrangements while the unemployment rate does not seem to matter.

5 Mechanisms and mediating outcomes

The empirical analysis has revealed a robust, positive, and statistically significant peer effect on the living arrangements of young adults. In this section we examine whether complementarities or the maintenance of friendship ties can be the underlying mechanisms and we treat couple formation, college attendance, and employment as mediating outcomes. In this way we can achieve a better understanding of the nest-leaving behavior and sort through a series of potential explanations.

5.1 Complementarities

A mechanism through which friends may enhance nest-leaving is complementarities. Sharing a house with a friend may reduce the cost of living for a young adult. Moreover, moving to a new neighborhood with a friend may facilitate the process of adapting to the new environment. We investigate whether this is the case using detailed information on the block of residence of the young adults in Wave III. Our data contain unique identifiers for each block of residence. In this way, we are able to compare the block of residence of the respondents with the ones of their friends. If a respondent does not live with the parents in Wave III and she/he shares the same block of residence with at least one of her/his friends, we can infer that the respondent either shares the house with this friend or at least they live very close so as to benefit from complementarities. We find that less than 7 per cent of young adults that do not coreside with their parents live in the same block as at least one of their friends. Excluding these individuals from the regression sample produces estimates (available upon request) very similar to the benchmark. Therefore, complementarities do not seem to be the main channel through which peer effects arise.

5.2 Maintenance of friendship ties

The maintenance of friendship ties is another possible channel for the peer effect. If a young adult moves away from parental home, the distance may destroy the ties with her/his high school friends. Therefore, if most of the friends of a young adult keep on living with their parents, the young adult may decide to do so in order to stay close and maintain the friendship ties with them. Belot and Ermisch (2009) use the BHPS for individuals in the age group 18-50 to investigate the role of friendship ties in residential mobility and find that the more friends an individual has, the less geographically mobile she/he is. Following

their paper, we include the number of friends that the respondent nominated in the school (out-degree) as an extra regressor in our preferred specification to examine whether the maintenance of friendship ties is a likely mechanism for the peer effect. Note that the out-degree is based on the complete list of in-school nominations, i.e., it includes also friends that did not participate in the in-home survey.[21] Table 4 presents the results. There is no statistically significant effect of the number of friends on the probability of living with the parents during adulthood while the coefficient of the peer effect is almost unaffected.

The reason why the maintenance of friendship ties is not the main mechanism behind the peer effect lies in the geographical distance between friends after nest-leaving. A young adult that leaves the parental home may move somewhere closeby and therefore at a short distance from her/his peers. In that case the destruction of friendship ties would not be a concern. Our rich data allow us to study also this possibility as there is information on the distance in kilometers between the Wave I and the Wave III locations. Actually, more than half of the respondents that do not coreside with their parents in Wave III live less than 15 km away from their place of residence in Wave I. Therefore friendship ties may be maintained after nest-leaving both in the case the respondent and his/her friends leave the parental home (each of them will be on average at 15 km distance from their original location) and in the case that only the respondent leaves and his/her friends continue coresiding with their parents in their original location. This piece of information is informative as it reveals that more than half of the emancipated young adults do not change city of residence when they move out of the parental home.

It seems that neither complementarities nor the maintenance of friendship ties is the main channel through which the peer effect in living arrangements operates. Therefore, other mechanisms such as the reduced stigma of living with parents during young adulthood or simply imitation among friends may lie behind the peer effect.

5.3 Couple formation, college attendance and employment

So far we analyzed the decision of young adults to leave the parental home without distinguishing between possible destinations. Youth emancipation often coincides with college attendance or couple formation. Moreover, the employment status of the young adult is

[21] In the in-school survey the respondents could nominate friends among all students in the schools (around 90,000) but only around 15,000 participated in the in-home survey in Wave III. In the analysis so far we considered only friends who participated in the in-home surveys as we needed to observe their behavior (living arrangements) in order to compute the peer effect. The in-degree and the out-degree are measures that consider all friends, including those whose behavior is unobserved.

also likely to play a role. We do have information on all these variables but we chose not to include them in the main regressions as they are clearly endogenous. Restricting the sample on respondents who are single or go to college would bias our results as peers are known to influence both the marital decisions (Adamopoulou, 2012) and the educational choices (Bifulco et al., 2011; Patacchini et al. 2012).

We follow Matsudaira (2015) and we control for these endogenous variables in order to examine whether peer influence on living arrangement takes place only through these intermediate outcomes. In the data youth emancipation is correlated both with the college and the marital decision, though not perfectly. More than 14 per cent of cohabiting and married young adults and around 40 per cent of college graduates or students in our sample still live with their parents. Table 5 presents the results of the living arrangements regression controlling for the endogenous variables observed in Wave III, namely, a dummy for single individuals, a dummy for college graduates/students, a dummy for employed individuals and its interaction with the dummy for singles. The coefficients of these variables are all statistically significant and have the expected signs. Most importantly, the peer effect on living arrangements is robust to the inclusion of these variables. Therefore, it seems that there is a direct peer effect on the decision to live with the parents even after controlling for potential mediating mechanisms.

6 Placebo and further robustness checks

One of the most important features of our identification strategy is the difference in the timing of leaving the parental home between the respondents and their friends. In all regressions we treated as emancipated, only the friends that left the parental home no later than the respondent. Friends that left the parental home after the respondent enter the regressions as coresidents with their parents. The rationale behind our strategy is that the respondents should be able to observe friends' behavior in order to imitate it afterwards. Friends that left the parental home after the respondent can actually be used in a placebo exercise. Throughout the analysis we have included school (network) fixed effects that should account for correlated effects. However, there may still be unobserved common factors that drive the behavior of both the respondents and their peers. The placebo exercise enables us to examine this possibility. For our placebo specification we keep all friends that coreside with their parents, discard those who left the parental home no later than the respondent

and treat as emancipated the friends that left the parental home after the respondent. This placebo peer group is ideal as it consists of nominated friends who shared many characteristics in common with the respondents and were subject to similar environments but left the parental home after them. We expect to find no statistically significant peer effect on the respondents' living arrangements as the living-arrangements choice of the peers was realized after the one of the respondents. Results are reported in Table 6, column 1. The coefficient of the peer effect in this placebo exercise is six times smaller than the one in the benchmark and it is not statistically significant. Note that if we do not include school dummies in the placebo exercise, the coefficient of the placebo peer effect turns positive and statistically significant (Table 6, column 2). These exercises demonstrate that throughout the analysis the inclusion of school dummies successfully accounts for correlated effects.

The richness of our data has allowed us to control throughout all the regressions for a long list of variables, that typically are unobserved by the econometrician. Nevertheless, we also ran a series of regressions including many more variables, namely, the physical appearance of the respondents (assessed by the interviewer) that may be related to couple formation, the IQ (Peabody Picture Vocabulary Test) and the GPA of the respondents that may affect their college and employment decisions, as well as the ratio of siblings that are of the same gender as the respondent and whether the respondents were the youngest amongst all siblings in order to capture the structure of the family of origin in a more refined way. These variables, like the rest of the controls, are predetermined since they are measured in Wave I. The peer effect survived the inclusion of all these extra regressors (Table 7, columns 1-4). Respondents that are more physically attractive or have higher GPA are less likely to live with the parents. The coefficients of the IQ and of the variables related to siblings were not statistically significant from zero. We also estimated a probit model and the marginal effects are very much in line with the OLS estimates.[22]

One last concern is that high school friendships may reflect non-cognitive skills of the individuals that can affect their living arrangements during young adulthood. One of them is popularity. In order to test this we proxy popularity with the in-degree, i.e., the number of times the respondent has been nominated by other students in the school and we re-estimate our preferred specification including this proxy. The peer effect remains statistical significant and is similar in size after controlling for popularity (Table 7, column 5). The coefficient of popularity is negative and statistically significant suggesting that individuals

[22] The marginal effect of the probit model associated to the peer effects is 0.066**.

that used to be popular during high school are less likely to live with their parents when they become young adults. If we assume that more successful young adults are less likely to live with the parents because they go to college, our findings are in line with Conti et al. (2013) that find that popularity at school is translated into higher earnings during adulthood.

Finally, some respondents were asked to nominate only the best male and the best female friend instead of five male and five female friends. Repeating the analysis considering for all the respondents the best male and best female friend[23] does not affect our results in any way (Table 8).

7 Conclusions

In this paper we use data from the National Longitudinal Study of Adolescent Health and we analyze the influence of high school friends on the nest-leaving decision of young adults. We achieve identification by exploiting the differences in the timing of leaving the parental home among peers, the individual-specific nature of the peer groups that are based on friendship nominations, and by including school (network) and grade (cohort) fixed effects.

Our results indicate that there are statistically significant peer effects on the decision of young adults to leave parental home. This is true even after we control for labor and housing market conditions and for a comprehensive list of individual and family-of-origin characteristics that are usually unobserved by the econometrician. According to our estimates having friends that are still all living with their parents will increase the individual probability of living with parents by 5.9 percentage points relatively to having no friends that are still living with their parents. We find evidence that females tend to conform to the social norm more than males and that peer pressure plays a very important role for non-white or hispanic young adults. However, the peer effect is not statistically significant for young adults coming from low-income families.

The existence of positive peer effects is in line with the increasing trend in the proportion of young adults living with their parents that has been observed in the US during the last 50 years. In the presence of peer effects, the increasing trend may persist regardless of the labor and housing market conditions. We confirm the validity of our results through a placebo

[23] The order of friendship nominations is not random. Instead, respondents nominated male/female friends in a decreasing order starting with the closest one. As a result, the first nominated male/female friend corresponds to the best male/female friend.

exercise and a series of robustness checks.

Our results have important policy implications since an increase in the proportion of young adults living with their parents is translated into reduced geographical mobility. Reduced geographical mobility of the youth can have severe consequences on unemployment and growth as vacant positions may not be filled and search frictions in the labor market may be exacerbated (OECD, 2005). Moreover, in the presence of peer effects, policies that target a specific group of people may have a snowball effect on other groups (Dahl et al., 2014). Therefore, policy makers should take the peer effect in living arrangements into account when evaluating policies that are intended to boost youth emancipation or mobility.

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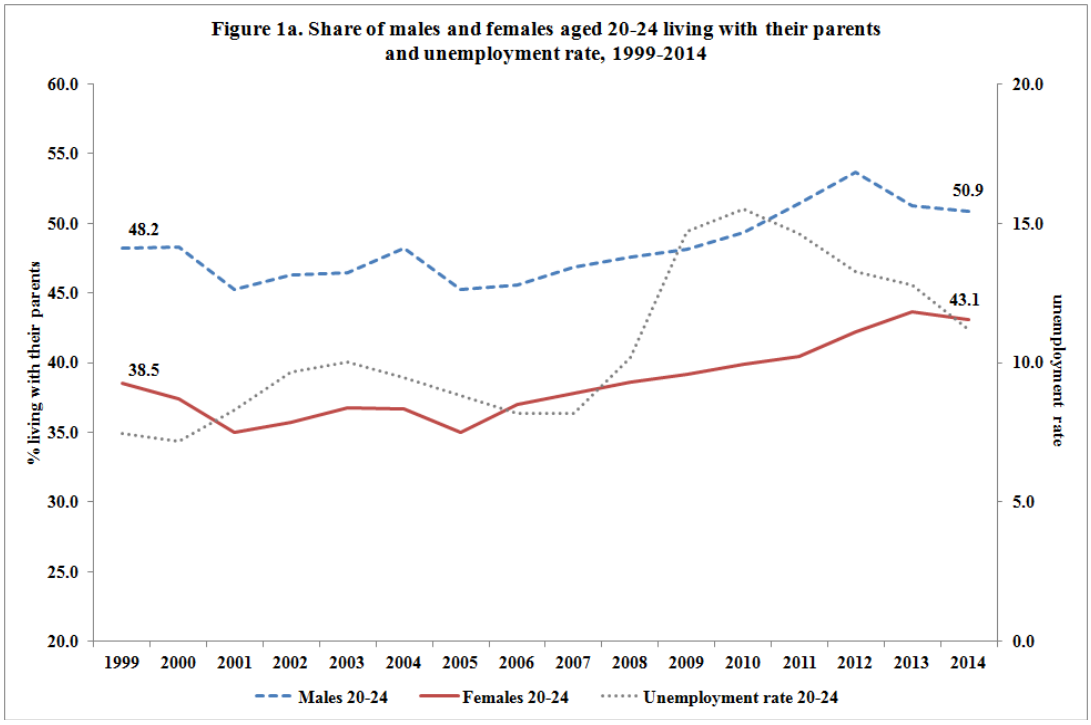
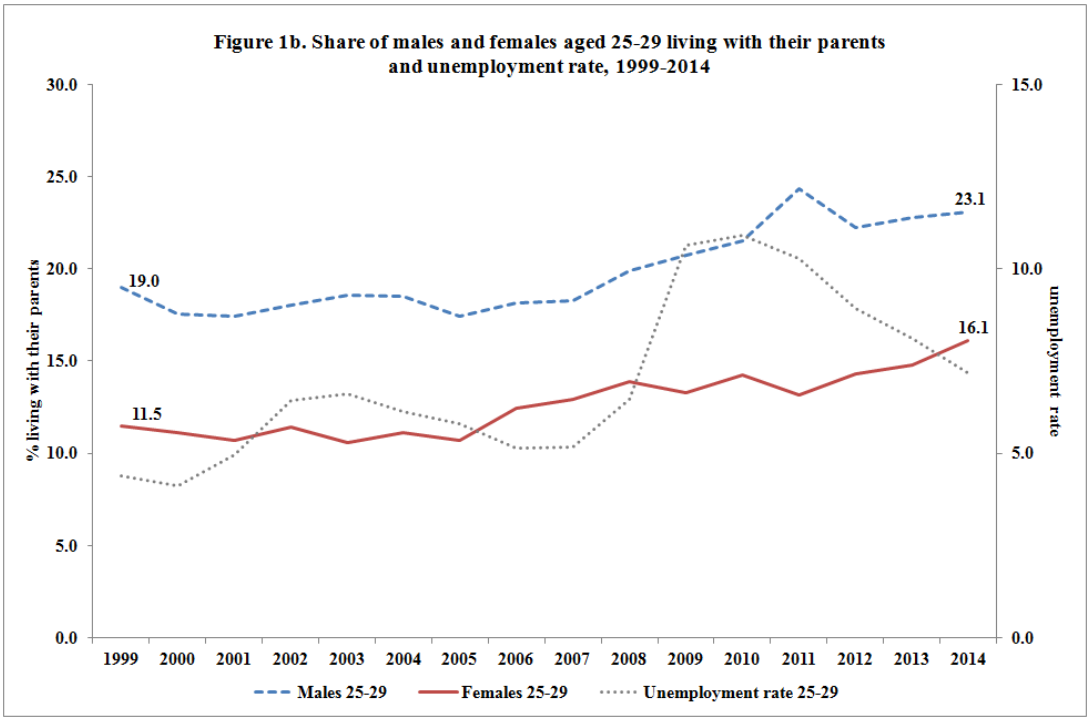
Figures

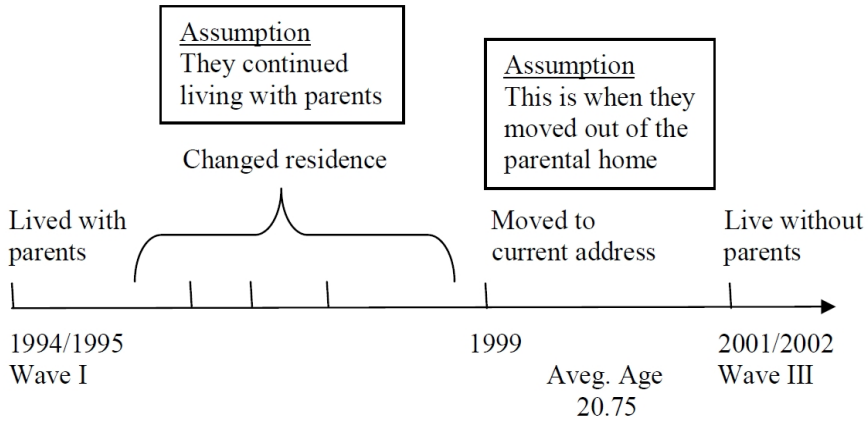
Figure 1. Living arrangements and unemployment rate.





Source: Current Population Survey Data on Families and Living Conditions and Labor Force Statistics.

Figure 2. Assumption for the timing of leaving the parental home.



Tables

Table 1. Descriptive statistics by coresidence with parents

Characteristic	Non-coresidents	Coresidents	All
% females	55.53	47.31	52.19
% Non-hispanic White	81.84	73.26	78.35
% African	9.74	12.08	10.69
% Hispanic	6.22	10.23	7.85
% Other (Asian or Native)	2.19	4.44	3.11
% financially-constrained families	14.54	15.53	14.94
Average maternal education	1.78	1.67	1.74
(4-scale category)	(0.98)	(0.99)	(0.99)
Average number of siblings	1.42	1.49	1.45
	(1.07)	(1.13)	(1.10)
% one-parent families	17.33	14.41	16.14
% good relationship with parents	79.72	85.10	81.91
Average amount of housework	2.14	2.03	2.10
(4-scale category)	(0.84)	(0.88)	(0.86)
Average self-esteem	4.02	3.90	3.97
(6-scale category)	(1.06)	(1.04)	(1.05)
Average maternal encouragement of independence	1.83	1.77	1.81
(5-scale category)	(0.86)	(0.87)	(0.86)
Average intention to leave	2.15	1.93	2.06
(5-scale category)	(1.18)	(1.19)	(1.19)
Average unemployment rate	0.07	0.07	0.07
% vacant houses	0.09	0.07	0.08
% urban	34.70	42.74	37.97
%	59.35	40.65	100.00
Number of obs.	1,788	1,306	3,094

Notes: Standard errors in parenthesis. The sample includes young adults who were living with at least one parent in Wave I, with non missing own and high school friends' coresidence information.

Corrected for the design effects of the Add Health sampling process.

Table 2. Determinants of living arrangements in young adulthood, benchmark

Definition of emancipated peers	Nominated friends who left parental home no later than the respondent					
	(1)	(2)	(3)	(4)	(5)	(6)
% peers living with parents	0.084***	0.059**	0.063**	0.062**	0.059**	0.068**
	(0.027)	(0.028)	(0.029)	(0.028)	(0.028)	(0.031)
Demographic characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Family of origin characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Other individual characteristics	No	No	Yes	Yes	Yes	Yes
Labor and housing market characteristics	No	No	No	Yes	Yes	Yes
Friends' characteristics	No	No	No	No	No	Yes
Wave I State fixed effects	Yes	No	No	No	No	No
School (network) fixed effects	No	Yes	Yes	Yes	Yes	Yes
Grade (cohort) fixed effects	No	No	No	No	Yes	Yes
No of observations	3,094	3,094	3,094	3,094	3,094	2,813
R^2	0.12	0.19	0.20	0.20	0.20	0.21

*** p<0.01, ** p<0.05, * p<0.1 (robust s.e. clustered at school level), cross sectional weight used.

Controls: Demographic characteristics: age, gender, race. Family of origin characteristics: maternal education, whether the parents were financially constrained, number of siblings, one-parent family. Individual characteristics: amount of housework used to do while an adolescent, how good was the relationship with the parents while an adolescent, how much the mother encouraged independence, intention to leave parental home while an adolescent, self-esteem. Labor and housing market characteristics: unemployment rate and proportion of housing units that were vacant at the block of residence during adolescence, urban area. Friends' characteristics: average demographic and family of origin characteristics of friends. Columns (5) and (6) include grade fixed effects instead of age. The sample is restricted to respondents who lived with at least one parent during adolescence. Adolescence refers to Wave I, young adulthood refers to Wave III.

Table 3. Determinants of living arrangements in young adulthood, heterogeneous effects

Definition of emancipated peers	Nominated friends who left parental home no later than the respondent					
	(1)	(2)	(3)	(4)	(5)	(6)
	Females	Males	Low income families	High income families	Non-hispanic whites	Non-whites or hispanic
% peers living with parents	0.054*	0.042	-0.009	0.072*	0.035	0.150***
	(0.032)	(0.051)	(0.042)	(0.042)	(0.034)	(0.055)
Demographic characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Family of origin characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Other individual characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Labor and housing market characteristics	Yes	Yes	Yes	Yes	Yes	Yes
School (network) fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Grade (cohort) fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No of observations	1,655	1,439	1,216	1,495	1,893	1,201
R^2	0.25	0.28	0.32	0.30	0.22	0.28

*** p<0.01, ** p<0.05, * p<0.1 (robust s.e. clustered at school level), cross sectional weight used.

Controls: Demographic characteristics: gender, race. Family of origin characteristics: maternal education, whether the parents were financially constrained, number of siblings, one-parent family. Individual characteristics: amount of housework used to do while an adolescent, how good was the relationship with the parents while an adolescent, how much the mother encouraged independence, intention to leave parental home while an adolescent, self-esteem. Labor and housing market characteristics: unemployment rate and proportion of housing units that were vacant at the block of residence during adolescence, urban area. Poor/rich families in columns (3) and (4) are defined as below/above the median household income. Non-whites or hispanic in column (6) are either African, Native, Asian or Hispanic Americans. The sample is restricted to respondents who lived with at least one parent during adolescence. Adolescence refers to Wave I, young adulthood refers to Wave III.

Table 4. Determinants of living arrangements in young adulthood, mechanisms

Definition of emancipated peers	Nominated friends who left parental home no later than the respondent
	(1)
% peers living with parents	0.069* (0.040)
Out-degree	-0.002 (0.005)
Demographic characteristics	Yes
Family of origin characteristics	Yes
Other individual characteristics	Yes
Labor and housing market characteristics	Yes
School (network) fixed effects	Yes
Grade (cohort) fixed effects	Yes
No of observations	2,206
R^2	0.23

*** p<0.01, ** p<0.05, * p<0.1 (robust s.e. clustered at school level), cross sectional weight used.

Out-degree: number of friends the respondent nominated.

Controls: Demographic characteristics: gender, race. Family of origin characteristics: maternal education, whether the parents were financially constrained, number of siblings, one-parent family. Individual characteristics: amount of housework used to do while an adolescent, how good was the relationship with the parents while an adolescent, how much the mother encouraged independence, intention to leave parental home while an adolescent, self-esteem. Labor and housing market characteristics: unemployment rate and proportion of housing units that were vacant at the block of residence during adolescence, urban area.

The sample is restricted to respondents who lived with at least one parent during adolescence and completed the in-school survey. Adolescence refers to Wave I, young adulthood refers to Wave III.

Table 5. Determinants of living arrangements in young adulthood, Wave III controls

Definition of emancipated peers	Nominated friends who left parental home no later than the respondent
	(1)
% peers living with parents	0.060** (0.027)
Single	0.224*** (0.057)
Employed	-0.118** (0.047)
Single*employed	0.169*** (0.059)
College	-0.061** (0.026)
Demographic characteristics	Yes
Family of origin characteristics	Yes
Other individual characteristics	Yes
Labor and housing market characteristics	Yes
School (network) fixed effects	Yes
Grade (cohort) fixed effects	Yes
No of observations	2,940
R^2	0.30

*** p<0.01, ** p<0.05, * p<0.1 (robust s.e. clustered at school level), cross sectional weight used.

Controls: Demographic characteristics: gender, race. Family of origin characteristics: maternal education, whether the parents were financially constrained, number of siblings, one-parent family. Individual characteristics: amount of housework used to do while an adolescent, how good was the relationship with the parents while an adolescent, how much the mother encouraged independence, intention to leave parental home while an adolescent, self-esteem. Labor and housing market characteristics: unemployment rate and proportion of housing units that were vacant at the block of residence during adolescence, urban area. The sample is restricted to respondents who lived with at least one parent during adolescence. Adolescence refers to Wave I, young adulthood refers to Wave III.

Table 6. Determinants of living arrangements in young adulthood, placebo

Definition of emancipated peers	Nominated friends who left parental home after the respondent	
	(1)	(2)
% peers living with parents	0.010 (0.030)	0.069** (0.028)
Demographic characteristics	Yes	Yes
Family of origin characteristics	Yes	Yes
Other individual characteristics	Yes	Yes
Labor and housing market characteristics	Yes	Yes
School (network) fixed effects	Yes	No
Grade (cohort) fixed effects	Yes	Yes
No of observations	2,468	2,468
R^2	0.24	0.11

*** p<0.01, ** p<0.05, * p<0.1 (robust s.e. clustered at school level), cross sectional weight used.

Controls: Demographic characteristics: gender, race. Family of origin characteristics: maternal education, whether the parents were financially constrained, number of siblings, one-parent family. Individual characteristics: amount of housework used to do while an adolescent, how good was the relationship with the parents while an adolescent, how much the mother encouraged independence, intention to leave parental home while an adolescent, self-esteem. Labor and housing market characteristics: unemployment rate and proportion of housing units that were vacant at the block of residence during adolescence, urban area. The sample is restricted to respondents who lived with at least one parent during adolescence. Adolescence refers to Wave I, young adulthood refers to Wave III.

Table 7. Determinants of living arrangements in young adulthood, robustness

Definition of emancipated peers	Nominated friends who left parental home no later than the respondent				
	(1)	(2)	(3)	(4)	(5)
% peers living with parents	0.056** (0.028)	0.059** (0.028)	0.054* (0.030)	0.059** (0.028)	0.069* (0.040)
Physical appearance	-0.025* (0.013)				
GPA		-0.032* (0.019)			
IQ			-0.044 (0.058)		
Youngest among siblings				0.009 (0.026)	
Ratio of same gender siblings				0.006 (0.024)	
In-degree					-0.008*** (0.003)
Demographic characteristics	Yes	Yes	Yes	Yes	Yes
Family of origin characteristics	Yes	Yes	Yes	Yes	Yes
Other individual characteristics	Yes	Yes	Yes	Yes	Yes
Labor and housing market characteristics	Yes	Yes	Yes	Yes	Yes
School (network) fixed effects	Yes	Yes	Yes	Yes	Yes
Grade (cohort) fixed effects	Yes	Yes	Yes	Yes	Yes
No of observations	3,081	3,075	2,907	3,094	2,206
R^2	0.21	0.21	0.21	0.20	0.23

*** p<0.01, ** p<0.05, * p<0.1 (robust s.e. clustered at school level), cross sectional weight used.

In-degree: number of times the respondent has been nominated. Controls: Demographic characteristics: gender, race. Family of origin characteristics: maternal education, whether the parents were financially constrained, number of siblings, one-parent family. Individual characteristics: amount of housework used to do while an adolescent, how good was the relationship with the parents while an adolescent, how much the mother encouraged independence, intention to leave parental home while an adolescent, self-esteem. Labor and housing market characteristics: unemployment rate and proportion of housing units that were vacant at the block of residence during adolescence, urban area. The sample is restricted to respondents who lived with at least one parent during adolescence and completed the in-school survey. Adolescence refers to Wave I, young adulthood refers to Wave III.

Table 8. Determinants of living arrangements in young adulthood, best friends only

Definition of emancipated peers	Nominated best friends who left parental home no later than the respondent
	(2)
% peers living with parents	0.060** (0.030)
Demographic characteristics	Yes
Family of origin characteristics	Yes
Other individual characteristics	Yes
Labor and housing market characteristics	Yes
School (network) fixed effects	No
Grade (cohort) fixed effects	Yes
No of observations	2,393
R^2	0.24

*** p<0.01, ** p<0.05, * p<0.1 (robust s.e. clustered at school level), cross sectional weight used.

Controls: Demographic characteristics: gender, race. Family of origin characteristics: maternal education, whether the parents were financially constrained, number of siblings, one-parent family. Individual characteristics: amount of housework used to do while an adolescent, how good was the relationship with the parents while an adolescent, how much the mother encouraged independence, intention to leave parental home while an adolescent, self-esteem. Labor and housing market characteristics: unemployment rate and proportion of housing units that were vacant at the block of residence during adolescence, urban area. The sample is restricted to respondents who lived with at least one parent during adolescence. Adolescence refers to Wave I, young adulthood refers to Wave III.

Appendix

Table A1. Definition of variables

Variable	Type	Values
Gender	binary	0 if male 1 if female
Hispanic	binary	0 if not Hispanic 1 if Hispanic
African American	binary	0 if not African American 1 if African American
Other	binary	0 if not Asian or Native American 1 if Asian or Native American
Number of siblings	continuous	[0, 12]
One-parent family	binary	0 if coresident with both parents 1 if coresident with only one parent
Maternal education	ordinal	0 Less than highschool 1 Highschool or similar 2 More than highschool 3 College or more
Financially constrained family	binary	0 otherwise 1 if parents had difficulty to pay the bills
Well with parents	binary	0 if bad relationship with both parents 1 if good relationship with at least one parent

Amount of housework	ordinal	0 not at all 1 1 or 2 times per week 2 2 or 3 times per week 3 5 or more times per week
Self-esteem	ordinal	The respondent considers her/his intelligence: 1 moderately below average 2 slightly below average 3 about average 4 slightly above average 5 moderately above average 6 extremely above average
Mother encouraged independence	ordinal	1 strongly agree 2 agree 3 neither agree nor disagree 4 disagree 5 strongly disagree
Intention to leave during adolescence	ordinal	1 not at all 2 very little 3 somewhat 4 quite a bit 5 very much
Unemployment rate (census block)	continuous	[0, 0.47]
Fraction of vacant houses (census block)	continuous	[0, 0.94]
Urban	binary	0 if parental home not in urban area 1 if parental home in urban area

Table A2. Full specification

% peers living with parents	0.059**	(0.028)
Female	-0.061**	(0.029)
African American	0.047	(0.050)
Hispanic American	-0.003	(0.050)
Other (Asian or Native American)	0.089	(0.065)
Number of siblings	-0.010	(0.011)
One-parent family	-0.082**	(0.041)
Maternal education	-0.001	(0.012)
Financially constrained family	0.000	(0.038)
Amount of housework	-0.046***	(0.014)
Well with parents	0.022	(0.037)
Self-esteem	-0.014	(0.012)
Mother encouraged independence	-0.014	(0.013)
Intention to leave during adolescence	0.003	(0.014)
Unemployment rate (census block)	-0.044	(0.427)
Fraction of vacant houses (census block)	-0.354*	(0.212)
Urban	0.078	(0.057)
School (network) fixed effects	Yes	
Grade (cohort) fixed effects	Yes	
No of observations	3,094	
R^2	0.20	

*** p<0.001, **p<0.05, *p<0.10, robust s.e. clustered at school level.

Cross sectional weights used.

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