

Emancipation under the great recession in Spain

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Abstract In this paper we document the behavior of emancipation over one of the biggest boom–bust cycles experienced by the Spanish economy. In principle, the economic difficulties faced by the Spanish youth during the last recession would have hampered a normal emancipation pace. However, we find that the proportion living away from parents among those aged 18–40 has not decreased but *increased* from 44 % during the boom (2005–2008) to 46 % during the bust (2009–2013). A simple decomposition reveals that this is mainly driven by the substantial rise in the emancipation rate among the full-time employed workers during the bust. To explain this change we discuss several factors such as macroeconomic conditions, rental subsidy policy, higher labor mobility, selection bias, reverse causation, time-lag in adjustment and secular trend.

Keywords Emancipation · Great recession · Labor market · Rental subsidy · Housing markets

JEL Classification J12 · H31 · R21

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1 Introduction

Establishing own home away from the parental home is one of the most important transitions one undertakes along the life course and is often considered as the beginning of a true adult life. Emancipation in the family context means to be free from and to be independent of parents. It implies independence in multiple aspects of life, economical, residential, decision-making and responsibility-assuming. Therefore, the age one emancipates depends on multiple factors, not only socio-economic ones but also emotional and psychological ones.

To start with, we may consider the decision of emancipation in terms of costs and benefits of separating from parents. Of course, the costs and the benefits can be both economical and non-economical. Furthermore, we have to consider the costs/benefits from both children's and parents' side as the decision of emancipation often involves a process of negotiation between them. From children's viewpoints, the main cost of emancipation is the loss of economies of scale in consumption usually financed by parents, while the main benefits are gains in personal freedom and intimacy. From parental viewpoints, the costs and the benefits may be more emotional than economical.¹ Presumably, rich parents can accommodate more easily their children longer time than the poor.² Given the parents' economic capacity, in turn, children in smaller-size families would be tolerated longer than those in larger families. This may be relevant in Spain as the fertility rate declined considerably during the period the cohorts of our analysis were born.³

Macroeconomic conditions are also likely to play important roles in determining emancipation patterns. Tight housing market and weak job market conditions are likely to retard transitions to emancipation. The effect of individual economic conditions is likely to be larger than that of general economic conditions, and recessions may exert additional negative effects on emancipation due to the perception of future uncertainty (Lee and Painter 2013). Knowing the emancipation pattern and its evolution is important to acquire better understanding about a wide variety of demographic and socio-economic conditions of a society and to predict their prospects in the future, such as family formation, fertility, age structure, housing demand, consumption and labor supply.⁴

The main purpose of this paper is to record and analyze the patterns of emancipation in Spain during the current crisis relative to the preceding boom. Has the recession retarded Spanish youth's emancipation? If so, how much? We

¹ Economic costs and benefits of co-residence would depend on the contribution of each member on the family living costs. From the parental side, there are further costs in terms of forgone benefits of potential rental income of the space occupied by children or due to the impossibility of downsizing their housing. In Spain, it seems that parents finance most part of living costs of co-residing children and that downsizing house after children's emancipation is uncommon.

² Manacorda and Moretti (2006) find supportive evidence for Italy, although they interpret their results as parental preferences, cohabitation with children being a normal good for parents.

³ Some detailed discussion from socio-demographic perspectives can be found in Holdsworth and Morgan (2005) and Billari and Liefbroer (2010).

⁴ Dyrda et al. (2012) explore the importance of cyclical pattern of emancipation for aggregate labor supply in the US.

compare the proportion of young people who are living away from parental home between the period of boom and that of bust. The period of boom is considered to be 2005–2008 and that of bust 2009–2013. The main contribution of our paper is the detection of a surprising counter-intuitive evolution of emancipation in Spain during the last economic cycle, the finding of a dominant behavioral effect and the attempt to explain this from diverse perspectives such as mobility, selection, reverse causation, time-lag and secular trend.

2 Background

Spain has experienced during the last 10 years one of the biggest boom–bust cycles. During the second part of 1990s and up until 2007 Spanish economy enjoyed a relatively long period of economic boom reaching the unemployment rate of 8 % in 2007, the lowest since 1980. A substantial part of this boom was found to be due to the real estate bubble which was forming during this boom period. Since the explosion of this bubble in 2008, the Spanish economy entered a deep recession reaching a startling 26 % of the unemployment rate in 2013, the highest in the modern era of Spain and unheard of in any developed countries of a similar size.

Current economic crisis has hit hardest young generations. In 2013, the unemployed outnumbered the employed among the youth under 25 years of age, and among those aged 25–29 one of each three labor market participants was unemployed. Even among those in their 30 s one of each four participants was jobless. The crisis also reduced substantially the wages earned by Spanish workers, especially young workers as most of them are inexperienced and temporal workers not eligible for the protection by the traditional worker-friendly labor market legislation.

This economic crisis, relatively long and unusually deep, is likely to have a profound impact on the Spanish society in numerous aspects. Living arrangement, in particular, youth emancipation is one of the socio-demographic changes that may be affected seriously by the current crisis. It seems reasonable to think that transitions to emancipation may be delayed for many young people mainly due to the lack of economic resources. Those who are unemployed or earning a small wage are unlikely to have economic capacity to live independently. Several studies have shown significant negative effects of unemployment on emancipation [Lee and Painter (2013) for the US and Martínez-Granado and Ruiz-Castillo (2002) for Spain] while Ermish (1999) showed positive effects on both leaving and returning to parental home in the UK.⁵

Even those who are working full-time with a reasonable wage may hesitate to emancipate if they feel unsure of the stability of their jobs. A study by Becker et al. (2010) provides evidence of job insecurity delaying emancipation. Furthermore, the

⁵ It should be noted that the results of all mentioned studies are not strictly comparable to ours as they analyze transitions to emancipation while we do co-residence status with parents. Furthermore, the positive effects of unemployment on home leaving in Ermish (1999) should be interpreted with caution as own income variable (highly correlated with employment status) is included and shows significant positive effects.

fact that the most common mode of emancipation in Spain is through owner-occupied housing suggests that many young people (and their parents) with traditional mentality may delay their time of emancipation. In addition, it may be the case that some individuals living on their own choose to move back in parental home when faced with a reduced economic capacity as in the case of unemployment.⁶

Another negative side can be found in the mortgage market situation. As most banks are under a serious liquidity problem due to excessive bad mortgage loans, the supply of mortgage loans has been quite limited during the past several years. The accessibility to mortgage loans has been found important in emancipation in the study by Martins and Villanueva (2009) which estimate that getting a mortgage loan increases the rate of leaving home by between 31 and 54 percentage points in Portugal.⁷

Housing costs, on the other hand, have undergone a substantial readjustment along the cycle. After reaching the maximum at the hike (2007) of the boom period, house price has been falling continuously since then. On average, it has fallen more than 30 % during the last 6 years according to the housing price index of the Spanish National Institute of Statistics (INE). Negative effects of higher housing prices on emancipation were found in Ermisch and Di Salvo (1997), Ermish (1999), Giannelli and Monfardini (2003) and Lee and Painter (2013) among others.

Against this economic background we first contrast the aggregate emancipation rates among the Spanish youth along the economic cycle. According to the data from the Spanish Labor Force Survey, among those aged 18–40 the proportion living away from parental home has not decreased but *increased* from 44 % during the boom to 46 % during the bust. This contradicts frontally to our conjecture which is widely shared among the Spanish population and it also contrasts with the case in the US documented in Lee and Painter (2013).⁸ This is even more surprising if we consider the secular trend of delay in emancipation during the last several decades. According to Vieira and Gamundi (2010), the mean age of emancipation has increased by 6 years between 1981 and 2001.

In order to understand this surprising evolution in the emancipation rate we proceed as follows. In the next section, we describe the data and present the evolution of labor market status of the young population and the emancipation rate by labor market status. We also use decomposition techniques to establish determinants of this evolution considering age, gender and labor market situation. These three variables are among the most important determinants of emancipation, typically showing higher rates of emancipation among those older, female for given age and employed. We will examine how the composition of young population has changed between the two periods and how the emancipation behavior has changed

⁶ Kaplan (2012) shows that in the US moving in and out of the parental home is a valuable insurance channel against labor market risk.

⁷ They exploit two reforms of a Portuguese program that subsidized interest rate on mortgages signed by low- and medium-income young adults. They use a unique dataset that merges a Labor Force Survey with administrative debt records.

⁸ Lee and Painter (2013) show that the rate of young adult men living at parental home has grown rapidly from 14 to 19 % from the beginning of the recession until 2011.

within each group. In Sect. 4, using regression methods we will examine the effects of relevant variables net of other correlated variables. Other variables we include are detailed labor market status and their interaction terms with cycle. The main result is that full-time employed workers has increased emancipation substantially during the bust overcompensating negative compositional effects. Attempts to explain this main finding are made in Sect. 5, which discusses the possibility of increased labor mobility, reverse causation, selection bias, time lag effects and secular trend. Final Section includes some conclusions and further reflections.

We think our study adds to the existing literature in several aspects. First, this paper focuses on the impact of the most recent and the deepest recession on youth emancipation in Spain. While some previous studies (Ermisch and Di Salvo 1997; Giannelli and Monfardini 2003) have included regional unemployment rates with similar purposes, none covered the recent great recession except for Lee and Painter (2013) which partially covers the case of the US where the recession was milder and shorter than in Spain. Second, instead of modeling the decision of working and studying jointly with the living arrangement decision as in Martínez-Granado and Ruiz-Castillo (2002) or Giannelli and Monfardini (2003), we focus on the effect of detailed job characteristics (full or part time, permanent or temporal, employee or self-employed) and labor market situation (work, inactive, unemployed or study) on emancipation during the recession and we find substantial differences. We also include a broader set of individual and aggregate variables than previous studies that may affect the living arrangement decision. Third, while most previous papers studied transitions out of parental home⁹ we examine co-residence status of young people with their parents. Our approach, because of its static nature, avoids some problems of panel data such as endogenous attrition and small sample size. More importantly, we are able to capture not only the transitions of those moving out of parental home but also of those returning, which may be important in the current recession. Fourth, we document relative importance of compositional effects and behavioral effects in explaining the evolution of emancipation rate. Finally, we offer several alternative explanations of our main findings to motivate further research.

3 Data and descriptive analysis

We use data from the Spanish Labor Force Survey (EPA) in order to calculate the emancipation rate.¹⁰ It is important to note here that we do not intend to explore transitions out of parental home, but we refer to the emancipation rate as the fraction of individuals who live on their own as opposed to those who live with their parents. It may be understood as the cumulative emancipation rate but taking into account those who return to parental home. Therefore, the emancipation rate in our study is

⁹ Ermisch (1999) examined the returns to parental home as well.

¹⁰ Although it seems most appropriate to use longitudinal data such as EU-Survey of Income and Living Conditions to study emancipation decisions, it has a problem of endogenous attrition that invalidates a robust analysis of this decision. Furthermore, the sample size is not large enough to observe a sufficient number of transitions.

the stock of individuals who live away from parental home which take into account both transitions, in and out of parental home.

The EPA has been carried out each quarter of year and includes a large number of individuals with detailed data on individuals' labor market information. We can also deduce emancipation status through the question asking the relationship with household head of each household member. We classify as emancipated those registered as head, spouse/partner of the head or unrelated member to the head and as no-emancipated those registered as child, grandchild, or other relative of the head (or his/her spouse). Although this classification is an approximation as it is based on self-reported information on the relationship among household members, we think the potential error would not be large enough to be worrisome.

Our sample does not include immigrants as their behavior may be different from the natives along the cycle. In general immigrants came on their own to work in Spain and they are more likely than natives to cohabit with other adults of similar age but without family links. After they settle they can create new households whose children may behave differently from the native population regarding living arrangements. In fact, many young immigrants decide to bring their parents to live with them when their labor market and economic situation become stable, contrary to the typical case among the natives. Furthermore, immigration is a very recent phenomenon in Spain starting in the beginning of the 2000s and during the current recession many immigrants returned to their home countries or moved to other countries which is likely to bias our estimation when they are included.

Figure 1 shows the emancipation rates by age separately for the expansion and the recession periods. We can see that in Spain emancipation is almost non-existent before age 18 and after 40 the emancipation rate stays relatively flat, showing that most emancipations occur between 18 and 40, hence we focus in that group of age. We can see here that the age profile during the recession is slightly above the one during the expansion.

On average the emancipation rate for the population aged 18–40 is about 2 percentage points higher during the bust (46.6 %) than during the boom (44.7 %). This is surprising given dreadful consequences of the recession on the labor market for the young population. It is likely that different forces contributed to the observed change in the aggregate emancipation rate in opposite directions. We focus on labor market status as it is expected to be one of the most important determinants of emancipation and has undergone a tremendous change during the last decade. Along with the effect of this compositional change we will examine also the effect of behavioral changes (emancipation rate for each given labor market status) to explain the observed change in emancipation rate. We consider three types of individuals according to their labor market status: non-participants, unemployed and employed.

Table 1 compares the labor market composition and the emancipation rate between the boom and the bust. The proportion of the unemployed among the sample of the aged 18–40 went up from 8.3 % in the period 2005–2008 to 19.4 % in the period 2009–2013, which is compensated almost entirely by the drop in the proportion employed. A slight decrease in the fraction of non-participants is also observed, which is likely to be driven by the cyclical pattern (added worker effect)

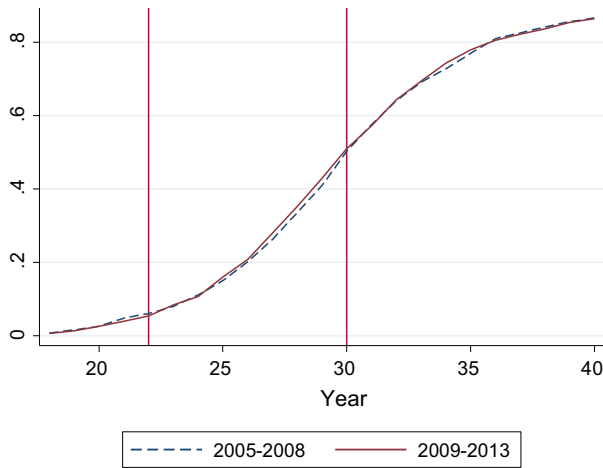


Fig. 1 Emancipation rate by age

Table 1 Labor market status distribution (%) and emancipation rate of those aged 18–40

	Boom (2005–2008)		Bust (2009–2013)	
	Distribution (%)	Emancipation rate (%)	Distribution (%)	Emancipation rate (%)
Non participants	25.1	28.7	24.6	20.6
Unemployed	8.3	33.7	19.4	37.8
Employed	66.6	52.1	56.0	61.1
All	100	44.7	100	46.6

Source: Spanish Labor Force Survey (EPA)

and the secular increasing trend of female participation in spite of the rising university enrollment rate during the recession.¹¹

By the labor market status, as expected, the highest emancipation rate is found among employed people and, among non-employed, unemployed people have a higher emancipation rate than non-participants. Between the boom and the bust, we find considerable differences in emancipation behavior by the labor market status. While for non-participants there is a substantial decrease in the emancipation rate from 28.7 to 20.6 %, for others increased emancipation rates are observed. The increase is particularly large among the employed, from 52.1 to 61.1 %.

It is clear from Table 1 that between the boom and the bust two contrasting changes were in operation: the compositional changes contributed negatively to the emancipation rate as the share of the unemployed increased while the behavioral

¹¹ In our sample of 18–40 years of age, the proportion of full-time student has increased from 13.6 to 16.4 % between the boom and the bust.

changes contributed positively mostly due to the higher emancipation rate among the employed during the bust than during the boom.

In the following, we compute the contribution of each factor to the evolution of emancipation rate in Spain by decomposing the total variation of the emancipation rate in behavioral and compositional changes. The decomposition is obtained as follows. Denote by w_j^0 the weight of the labor market group j during the expansion and w_j^1 its weight during the recession. We denote by E_j^0 and E_j^1 the emancipation rate of group j during the boom and the bust, respectively. We consider three labor market groups: non-participants, unemployed and employed. Then, we can write the change in emancipation rate during the bust relative to the boom as follows.

$$E^1 - E^0 = 0.5 \sum_j \left(w_j^1 + w_j^0 \right) \cdot \left(E_j^1 - E_j^0 \right) + 0.5 \sum_j \left(E_j^1 + E_j^0 \right) \cdot \left(w_j^1 - w_j^0 \right)$$

The decomposition allows us to disentangle the effects of the behavioral (the first term) and compositional (the second term) changes from the overall changes in emancipation rate.

We find that the compositional change by labor market status have accounted for the decline in emancipation rate by 2.2 points if the emancipation rate by labor market status had stayed constant at the average of the two periods (see Table 2). On the other hand, the behavioral change (different emancipation rates between the two periods for each labor market status) have accounted for the increase by 4.1 percentage points if we hold constant the composition at the average of the two periods. Overall, the emancipation rate has increased because of the dominant behavioral change overcompensating the negative effects of compositional change. The behavioral change is mainly due to the employed workers who show much higher emancipation rate during the bust than during the boom. Surprisingly, the emancipation rate has increased during the bust also among the unemployed.

As shown in Fig. 1, one important determinant of emancipation is age. The age composition (or simply average age) may have changed over the period of analysis as Spain has gone through considerable changes in the fertility rate. In fact, average age of the sample is about half a year higher in the bust than in the boom. Apparently, the higher average age has contributed to higher emancipation rate during the bust. To filter out potential bias due to different age composition between the two periods, we performed the same decomposition for each of four age groups, 18–25, 26–30, 31–35 and 36–40.

The average effect is substantially smaller than the effect for the whole population. This reflects that changes in the age composition of the population are partially driving the increase in the aggregated emancipation rate. The emancipation rate has increased for the age groups 26–30 and 31–35, but decreased for the other two age groups. Interestingly, in all age groups the compositional change has a negative effect on the emancipation rate and the behavioral change has a positive effect that is more pronounced for the group 26–35.

Finally, we explore differences across genders. As reported in the last panel of Table 2, the increase in the emancipation rate is higher for females than for males. In spite of that, it is worth noting that the size of both behavioral and compositional

Table 2 Total variation and decomposition

	Total	Behavioral	Compositional
All	1.9	4.1	-2.2
By age group			
18–25	-0.5	0.7	-1.2
26–30	0.8	2.3	-1.5
31–35	0.2	1.9	-1.7
36–40	-0.4	0.2	-0.6
By gender			
Men	1.8	6.6	-4.8
Women	2.0	2.6	-0.6

changes is higher for men than for women. Apparently, the crisis has hit young men much harder than young women as the construction sector was hit hardest. On the other hand, employed men seem to have increased their emancipation rate much more during the bust relative to the boom than employed women.

4 Multivariate analysis

In what follows we run a regression to control for confounding effect of correlated factors in determining the probability of emancipation. Given the importance of the behavioral changes (changing emancipation rate by labor market status) we consider a higher level of disaggregation of labor market status: students, other non-participants, unemployed workers, part-time workers, self-employed, full-time employees with a temporary contract and full-time employees with a permanent contract.¹² We also include interaction terms of labor market status with the recession period to capture the behavioral change over the cycle by the labor market status. We furthermore include the unemployment rate and house prices by region and time to control for regional and temporal differences in these macroeconomic conditions which are likely to be relevant to emancipation decisions. Therefore, the coefficient of the recession period should be interpreted as the effect of the recession period relative to the preceding boom period due to the factors other than included macroeconomic conditions and individual labor market status.

Finally, another important variable that we include is eligibility to rental housing subsidy program. This program, called “Renta Básica de Emancipación” (Basic rent/income for emancipation) was introduced in 2008. Employed workers or unemployed individuals receiving an unemployment subsidy aged 22–30 with personal gross income below 22,000 euros were eligible for the subsidy for 4 years at maximum. The subsidy was initially of 210 euros per month and was reduced to

¹² Although we are aware of the potential problems of bad control when individual labor market status variables are included along with the unemployment rate we decide to include them since our main interest is to explore the different behavioral changes by them. When we drop individual labor market status from the estimation, the effect of unemployment rate is significant and negative but small and the effect of the recession period becomes smaller but still significant and sizeable.

Table 3 OLS results of emancipation (1 = emancipated; 0 = not)

Variables	Male	Female
Recession period	0.0386***	0.0456***
Labor market status (re.: full-time permanent)		
Studying	-0.155***	-0.0976***
Inactive	-0.249***	0.0896***
Unemployed	-0.148***	-0.0275***
Part-timer	-0.123***	0.0310***
Full-time temporal	-0.086***	-0.0534***
Self-employed	0.001	0.0342***
Interaction: recession x		
Study	-0.0264***	-0.0369***
Inactive	-0.0266***	-0.0832***
Unemployed	-0.0111*	-0.0355***
Part-timer	-0.0108	-0.0357***
Full-time temporal	0.0044	-0.0011
Self-employed	-0.0142**	-0.0216**
Unemployment rate	-0.0003	0.0003
Log house price	0.0245**	0.0697***
Eligible to subsidy	0.0014	0.0017
Constant	-0.0059	-0.438***
Observations (N)	201,216	198,561
F-Statistics (7, N)	14.85	42.37
R-squared	0.433	0.461

Age and region dummy variables are included but not reported

F-test is with respect to the variables of Recession and its interaction terms

*** $p < 0.01$; ** $p < 0.05$;
* $p < 0.1$

147 euros from 2012 when the policy was modified as it did not admit new beneficiaries. This variable takes value 1 for those who were eligible for the subsidy at any year and zero otherwise. As we have information only on the age of individuals and the year of survey, we assigned as eligible to those aged 22–30 in 2008, 22–31 in 2009, 22–32 in 2010, 22–33 in 2011, 23–33 in 2012 and individuals aged 24–35 in 2013, those who would qualify at least one of the years the policy were in effect. It is important to control for its effect in order to isolate the effect of the recession on emancipation as the policy coincides with the recession period. According to Aparicio-Fenoll and Oppedisano (2015) this cash transfer had a positive effect on emancipation.

In Table 3 we report the coefficients of OLS¹³ regressions of emancipation (0 = not emancipated; 1 = emancipated) on age dummies, region dummies,

¹³ OLS estimation does not take into account of the dichotomous nature of the dependent variable (0 = not emancipated; 1 = emancipated) as in the models of logit or probit. However, the interpretation is convenient as we can interpret estimated coefficients as the effect of each variable on the probability of emancipation. In most cases the results are similar. Detailed discussion on the pros and cons can be found in Angrist and Pischke (2009).

recession period (0 = boom; 1 = recession),¹⁴ eligibility (0 = not eligible; 1 = eligible), each labor market status (reference being full-time employees with permanent contract) and the interaction of labor market status with the recession. We also include regional unemployment rate and house price as controls. We estimate separately for men and women in order not to confound potentially different effects of included variables by gender. Evidence on the existence of gender effects on parental home leaving decisions is found in Martínez-Granado and Ruiz-Castillo (2002) and more recently Chiuri and Del Boca (2010) find a common international pattern of differences between daughters and sons in this respect.

First, we observe both during the boom and the bust large differences by labor market status and some differences by gender. Among men, full-time permanent workers and the self-employed show the highest emancipation rate, full-time temporal workers showing about 9 % lower, part-time workers, the unemployed and students showing about 12–16 % lower,¹⁵ and inactive persons showing about 25 % lower. For women, the difference is much smaller by labor market status and some changes are observed between the boom and the bust. The highest emancipation rate is among the inactive population during the boom but it is among full-time permanent workers, part-timers and self-employed as well as the inactive women during the bust. This change may be due to endogeneity of labor market status with respect to emancipation among women (Martínez-Granado and Ruiz-Castillo 2002).¹⁶

Second, as for the macroeconomic variables, the coefficient of unemployment rate is insignificant and the coefficient of house price is positive while the coefficient of recession period is positive and significant. The insignificance of the unemployment rate is surprising since one would reasonably relate higher unemployment rates with lower income, greater labor market uncertainty and worse future income prospects that in principle should decrease the probability of emancipation. The positive coefficient of the housing price variable is also surprising, but one has to take into account that housing prices and accessibility to mortgage market which is not controlled for in our study have been highly correlated during the sample period. Our result is in contrast to that found in Lee and Painter (2013), Ermisch and Di Salvo (1997) and Ermish (1999) and we will discuss this Spanish oddity from the peculiar Spanish context in the next section. The positive coefficient of recession variable seem to suggest the existence of some

¹⁴ When we include each year as a dummy variable, we observe a clear step-wise increase with a jump occurring between 2008 and 2009. The coefficients were between -0.034 and -0.037 for each boom years and less than 0.01 in absolute terms for the bust years.

¹⁵ The effect of unemployment is comparable to the result of Lee and Painter (2013) who estimated a negative effect of 11 % in the US sample which includes both genders.

¹⁶ We are aware of the endogeneity problem here especially in the female sample. Given the fragile identification in the absence of adequate exclusion variables in the bivariate dependent variable models and individual labor market status being one of the variables of our main interest we decided to include them in our regression while keeping in mind this problem in interpreting the result. In the Appendix, however, we provide the results of a bivariate model of two simultaneous decisions, emancipation and working status. The sign and the size of the effect of the recession variable are robust to this alternative specification.

unobserved factors favoring emancipation during the bust for permanent contract full-time workers. We discuss this result later in more detail.

Third, we find no significant effect of the policy. Note that the effect is likely to be underestimated because it is constructed only by the age and the year and ignoring other requisites such as labor market status at the time of subsidy request. Furthermore, we need to be concerned of possible bias in the estimated coefficient of the variable. On the one hand, if underground economy is important in the rental market, it may be the case that the policy may have the effect of flourishing some rental contracts that were already there before the policy. Also, fictitious contracts (and fictitious emancipations although it is not necessarily true that they also respond in the survey fictitiously) may arise just to benefit from the rental subsidy. All these would overestimate the effect of the policy. On the other hand, some individuals who are not eligible because of their age, may benefit from the policy by sharing with other individuals who are eligible (think of a couple who wants to move to live together and only one of them qualifies for the subsidy). This would bias downward the effect of the policy. Overall, the policy has no significant effect but the bias mentioned above may be in operation invalidating the results. Our results differ in this respect from Aparicio-Fenoll and Oppedisano (2015). There are several potential reasons for this discrepancy. First, we consider a longer period of time, going from 2005 to 2013, instead of 2006 to 2009. Second, our definition of eligibility differs from them. We consider as eligible all individuals who were in eligible ages for the subsidy at any point in time prior to the survey when the policy was in effect, even if they were not at the time of survey. This may downward bias the estimated effect of the policy. Last, the variables of control included in our study are different from theirs.

Finally, with respect to the variable of our main interest, recession relative to boom, we find the estimated coefficient of 0.04 (4 %) for men and 0.05 (5 %) for women.¹⁷ These coefficients are interpreted as the effect (increase in emancipation) for permanent-contract full-time employees during the recession relative to the period of boom as they are the omitted category in both labor market status and interaction variables. For all other categories, the effect of recession is the sum of the coefficient of recession variable and that of the interaction term with each category. The effect of recession is similar for temporary-contract holders to that of permanent contract holders, but it is about 3 % for self-employed, male part-timers and unemployed and about 1 % or close to zero for all other categories except for non-participant (non-students) women for whom it is significantly negative (−4 %).

Therefore, the behavioral changes that account for the increased emancipation rate in the bust with respect to the boom are mainly due to the increase in the emancipation rate among full-time employees for both men and women and to a lesser extent to part-timers, self-employed and the unemployed among men.

There are both positive and negative plausible effects of the recession on the emancipation rate, some of which are already captured by the inclusion of the unemployment rate and the housing prices. The recession coupled with recent labor

¹⁷ The coefficient on the recession variable increases accordingly if we omit the eligibility variable from the regression as the policy was in effect mostly during the recession.

market reforms toward more flexible labor contracts could have affected young people not only in their current employment and job conditions but also in their prospects. The recession has given rise to a huge increase in the unemployment rate, particularly among the young population. This may be seen as a diminishing probability of getting a new job for those who are unemployed (or potentially unemployed in the future) and a higher probability of losing a job for those employed. This may reduce the incentives for young individuals to emancipate (precautionary delay of emancipation). This negative effect will be least felt among the workers with a permanent contract as their labor market stability is more or less intact.

Ups and downs in housing price (both property and rental price) during the current cycle are also likely to have affected young peoples' emancipation decision. Ongoing continuous decline of house price during the current recession may enable some individuals, especially those with a full-time job, to buy a house and emancipate. However, the expectation of further decline of house price will encourage people to wait. Furthermore, credit market conditions as well must have affected emancipation as housing market bubbles are closely related to credit market bubbles. During the recession borrowing conditions were tightened so that many young people just could not access to the credit market. On the other hand, mortgage loan interest rate has declined over time standing at a minimum level during the last few years. It is likely that tightening credit markets have affected less full-time workers whose economic capacity is stable. Hence the overall effect is difficult to predict and it is a quantitative question but it is possible that the positive effects dominated the negative effects of the recession on emancipation, in particular for full-time employed workers.

In the following section we argue that there are other alternative explanations to account for the fact we document here.

5 Alternative explanations

Our analysis above leaves us with an interesting open question: Why did full-time employed workers, self-employed and unemployed and part-time working men emancipate more during the recession? Below we discuss several factors.

5.1 Mobility

Given the difficulties to find a job during the recession, young individuals may be more willing to move to other regions away from their parents' region of residence in order to work or to find a job,¹⁸ in particular those with full-time job offers. This may foster new household formation. In fact, many Spanish workers have moved to foreign countries for work or in search of one during the current recession. If this is the case a positive effect of the recession on the emancipation rate would be found.

¹⁸ Ahn et al. (1999) find a significant positive effect of the exhaustion of unemployment benefits on workers' willingness to move for work in Spain.

Unfortunately, the survey of our data does not include those who migrate to other countries but only those who move within the country. We explore this possibility exploiting the individual information on the municipality of residence last year as reported in the survey. We find, however, that among those who started working in their current job less than a year ago the fraction of individuals who changed the municipality of residence during the last year is 4.0 % during the expansion, but 2.7 % during the recession. Hence, our hypothesis is not supported by the data.

5.2 Selection

The increase in emancipation probability during the recession among full-time employees, part-timers and the unemployed could be simply due to selection. The average quality of employed workers is likely to be different when 25 % of the active population are unemployed compared to when there are only 8 % unemployed. Provided that low quality workers are more likely to lose their jobs than higher quality workers, the average quality of employed workers is likely to be higher during the recession and similarly for the average prospects. A similar argument can be applied to the group of unemployed workers as the average quality of the unemployed is likely to be higher during the bust than during the boom. Furthermore, sunk costs involved in owning a house may explain partly the higher emancipation rate among the unemployed during the bust. These unemployed workers who were employed and emancipated as homeowners during the boom may be reluctant to sell or rent their houses in the event of unemployment to avoid the sunk cost (transaction costs, much lower house price and difficulties in renting their houses).

5.3 Reverse causation

It is possible that reverse causation between labor market status and emancipation operates here, which may explain a part of the observed increase in the emancipation rate. Some emancipated individuals may move back to their parental home when they face economic difficulty such as unemployment or reduced labor income. However, some may not have this option for some reasons. Emancipated individuals under such circumstances would try harder to remain employed during a recession than during a period of boom. They will be more willing to accept wage reductions or other changes in their job conditions in order to keep their job given that the transition to emancipation entails certain sunk cost that the individual tries to avoid again later (this was true especially for those who bought their houses with mortgage). If there are many workers under this circumstance, we may observe a higher emancipation rate among the employed (especially full-time workers) during the recession than during the boom.

5.4 Time lag

Another possible explanation for the increase in emancipation in Spain in spite of profound current economic crisis is the time lag that it may take for the crisis to

have effects on emancipation. The most frequent housing mode of emancipation in Spain is mortgaged owner-occupied housing (Gentile 2013). That is, most Spaniards buy their dwelling with mortgage to start their emancipated life. The process of buying and occupying a house with mortgage usually take some time, especially if the house is under construction at the time of purchase. It could take a few years before the buyer can move in. If this was the case for many people, it may explain partially the observed increase in emancipation during the bust as many people bought their houses under construction during the boom time (but still living with parents) and finally moving in (emancipating) a few years later (during the bust) when the house is completed. The figure below is consistent with this hypothesis as the emancipation rate has increased continuously during the boom years and early years of the crisis before it started to decrease in 2012. However, when we add lagged unemployment rates and house price as controls the coefficient of the lagged terms were not significant and those of other variables unchanged. In any case, we need to wait for more years to explore this hypothesis more rigorously.

5.5 Secular trend

One may suspect the increase in the emancipation rate during the recession as the result of a dominant secular trend. This is unlikely as the secular trend was the decreasing emancipation rate during the last several decades of the twentieth century mostly due to the increase in schooling during the same period (Vieira and Gamundi 2010) and the schooling enrollment in Spain has stayed virtually constant during the last decade. Furthermore, as seen in Fig. 2, the emancipation rate shows a downward movement since 2012. When we included time trend (both linear and quadratic terms) in our estimation, it turned out insignificant and almost no changes are observed in the estimates of other variables. In any case, we will have to wait to examine the possibility of a reversed secular trend.



Fig. 2 Emancipation rate by year for those aged 18–40

6 Final remarks

In this paper we document an increase in the aggregate emancipation rate among the Spanish youth aged 18–40. We find that a substantial behavioral change of full-time employees and, to a lesser extent, of the unemployed, self-employed and part-timers, is the driving force that overcame the strong negative effect of the dramatic compositional changes of the population.

We explored several factors to explain this change. Substantial decrease in housing (property and rental) price and low interest rates during the crisis may have facilitated emancipation among those whose economic capacity is more or less intact during the crisis, namely full-time workers. Cash subsidy program for rental housing for young people applied during the crisis also made emancipation easier, especially among the full-time workers. Other potential factors that may have contributed to the behavioral change among employed workers are selection, reverse causality or time-lag in adjustment. Another possibility is an increasing secular trend starting from the early 2000, which can be contrasted only with longer time series data in the future. However, Fig. 2 suggests that this possibility is unlikely.

Our findings are in contrast with what has been reported by Lee and Painter (2013) for the US economy, where emancipation decreased during the recession. This may be a signal of the peculiarity of the Spanish society that we would like to analyze further in the future.¹⁹

Finally, emancipation is a dynamic phenomenon as it is a transition from one state to another. Therefore, it can be studied most adequately with longitudinal data of individuals capturing the moment of transitions. Also, it will be better examined with the data which include detailed information of both parents and children as it depends on preferences and economic capacity of both of them.

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Appendix

In this Appendix we report two alternative models to the one we provide in Table 3 in order to explore the robustness of our results.

First, in Table 4 below we report the estimates of a probit model of the emancipation decision with the same covariates as in the OLS model in Table 3. The marginal effect of the recession variable is 0.0311 in the case of males and 0.0376 in the case of females. So they are both slightly smaller to the ones estimated with our benchmark model.

¹⁹ It may be related to the astonishing differences in the level of emancipation of young individual: in the US the emancipation rate for the age group 25–34 is about 89 %, whereas in Spain is only 35 %. Furthermore, homeownership rate for this group is about 48 % in 2007 in contrast to 73 % in Spain in 2004.

Table 4 Probit results of emancipation (1 = emancipated; 0 = not)

Variables	Male	Female
Recession	0.132*** (0.0182)	0.160*** (0.0195)
Studying	-0.990*** (0.0348)	-0.768*** (0.0279)
Inactive	-0.942*** (0.0244)	0.355*** (0.0157)
Unemployed	-0.511*** (0.0217)	-0.071*** (0.0188)
Part-timer	-0.409*** (0.0276)	0.133*** (0.0164)
Full-time temporal	-0.262*** (0.0134)	-0.167*** (0.0155)
Self-employed	-0.00422 (0.0157)	0.124*** (0.0239)
Recession x		
Studying	0.0295 (0.0431)	-0.0874** (0.0358)
Inactive	-0.0518 (0.0328)	-0.306*** (0.0223)
Unemployed	-0.00457 (0.0251)	-0.129*** (0.0232)
Part-timer	-0.0106 (0.0357)	-0.126*** (0.0223)
Full-time temporal	0.0175 (0.0198)	-0.00981 (0.0222)
Self-employed	-0.0404* (0.0227)	-0.0678** (0.0339)
Unempl. rate	-0.00219 (0.00147)	0.00108 (0.00148)
Log (house price)	0.112** (0.0507)	0.296*** (0.0512)
Age and region dummy variables are included but not reported	Eligible 0.0171 (0.0116)	0.0135 (0.0115)
Standard errors in parentheses	Constant -2.737*** (0.397)	-4.185*** (0.399)
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$	Observations 201,216	198,561

Second, in order to address the issue of endogeneity that arises regarding the labor market status of the individual in Table 5 we report the estimated coefficients of simultaneous equations of emancipation and working status using a bivariate probit model. To help the identification of the model we use house prices and eligibility to the rental subsidy that potentially affect the emancipation status but not

Table 5 Bivariate probit results of emancipation (1 = emancipated; 0 = not) and working status (1 = not working; 0 = working)

Variables	Male emanc	Male not working	Female emanc	Female not working
Recession	0.105*** (0.0163)	0.148*** (0.0142)	0.144*** (0.0149)	-0.0326** (0.0136)
Unempl. rate	-0.00978*** (0.00142)	0.0325*** (0.000982)	-0.00907*** (0.00123)	0.0173*** (0.000948)
Log house price	0.143*** (0.0473)		0.197*** (0.0391)	
Eligible	0.0231** (0.0109)		0.0124 (0.00880)	
Not working	0.254*** (0.0308)		1.299*** (0.0172)	
Rec* not working	-0.00298 (0.0176)		-0.183*** (0.0111)	
Educ 2		-0.0142** (0.00690)		-0.242*** (0.00649)
Educ 3		-0.150*** (0.00934)		-0.562*** (0.00834)
Constant	-3.702*** (0.370)	0.572*** (0.0249)	-4.603*** (0.305)	1.470*** (0.0290)
Observations	201,216	201,216	198,561	198,561
Rho	-0.469 (.0131)		-0.805 (.0108)	

Age and region dummy variables are included but not reported

Robust standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

the labor market status. In addition we include education dummies as covariates in the working equation. We find that the sign and the size of the effect of the recession variable are robust to this specification. The size of the marginal effect is 0.0262 for males and 0.0382 for females.

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