



Determinants of the Own-Account Worker's Decision to Hire Employees: A Review

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Abstract. Given the increasing numbers of own-account workers in many European economies, an important question for policy makers is to what extent these own-account workers move on to become employers. Yet, empirical research on job creation by own-account workers hardly exists. This paper reviews a small stream of empirical literature which, by using the European Community Household Panel (ECHP), focuses on the determinants of the own-account worker's decision to hire employees. At the individual level, our review suggests the importance of both human capital and liquidity constraints for the decision of hiring employees. At an aggregated level, we find that own-account workers are less likely to hire employees during recessions. Finally, we also detect the importance of some factors at the environmental and institutional level such as a higher education level of employees and consumers, a higher expenditure on employment incentives and a lower degree of employment protection. The evidence from our review may be useful for governments aiming to create a more enabling micro- and macro-environment for employment growth.

Keywords: own-account worker, employer, self-employment, hiring, job creation, Europe.

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1. Introduction

The design during the last decades of a set of instruments directed at encouraging people to become self-employed has been a central issue within the European entrepreneurial promotion policy.² The strong need for economies to create new jobs due to the financial and economic crisis of 2008 has only stressed governments' attention to entrepreneurship. The aim to foster entrepreneurship, however, cannot be limited to temporally achieving a certain number of self-employed to reduce the level of unemployment. On the contrary, the objective also has to incorporate the achievement of mid and long-term effects in terms of both business survival and new jobs created by new and incumbent self-employed.

In this context it is crucially important to give a clear and accurate overview of the policy incentives and instruments that can help to achieve this target. An important route of stimulating employment may be to persuade own-account workers to take on employees. In this respect, Earle and Sakova (2000) highlighted the following:

It is useful to distinguish self-employed employers from own-account workers, those who work alone or with the cooperation only of unpaid family helpers, because the former represents clear cases of genuine entrepreneurship: they are creating jobs for others, implying that they have had some success in their business, that they have been able to hire capital and other inputs to work with their employees, and that they are most likely engaged in self-employment voluntarily. [...] By contrast, the status of own-account workers is much less clear: although some of them might be successful entrepreneurs, others might instead be displaced workers from declining firms and sectors, forced to engage in whatever activity necessary to ensure their survival. (Earle and Sakova 2000, p. 580).

Indeed, leaving aside some specific activities such as farming, that given their nature, are suited to own-account self-employment, the logical expansion of any entrepreneurial venture should result in a transition from own-account worker to employer. Therefore, the challenge should be to identify the key factors for building a climate where own-account workers can thrive by expanding their labour force. Yet remarkably, although there is a small literature on job creation by the self-employed in general (see e.g., Burke et al. 2002, and Cowling et al. 2004), empirical literature on job creation by own-account workers is practically non-existent. It is important to distinguish between job creation processes by own-account workers and employers as the former suffer from a *one-employee threshold* (Désiège et al., 2011) linked to the cost of managing a first employee

2. See, for instance the *European Charter for Small Enterprises* adopted in Lisbon in 2000, the *Green Paper: Entrepreneurship in Europe* presented in 2003, the *Action Plan: the European Agenda for Entrepreneurship*, presented in 2004, the *Small Business Act for Europe* presented in 2008, or the new *Europe 2020 strategy*, the EU's growth strategy for the present decade.

and to legal constraints, such as the restrictions on layoffs. Désiage et al. (2011), as cited by A. Millán et al. (2015, p. 322), argue that once an entrepreneur has experience with running a business with personnel (e.g. experience with financial planning to pay a salary every month, experience with administrative burdens associated with employing personnel, etc.), the step to employing more personnel may well be smaller. Désiage et al. (2011) also provide empirical evidence supporting this argument.

To shed light on this issue of job creation by own-account workers, this work presents an overview of some of our previous studies (Congregado et al. 2010; A. Millán et al. 2013, 2015; J.M. Millán et al. 2014; Román et al. 2014), which all deal with the determinants of the transition from own-account worker to employer in Europe. In particular, using micro data from the European Community Household Panel for the EU-15, the papers included in our review analyse the effects of individual-level factors (human capital and liquidity constraints) and macro-economic factors (business cycle, education levels of the population, employment protection legislation, and employment incentives) on hiring decisions by own-account workers.

Our review suggests that informal processes for the acquisition of human capital such as previous experience in the labour market, *venture-specific* work experience or intergenerational transfers, present stronger effects on the decision of hiring employees than do the processes associated with formal education. We also find evidence supporting the existence of liquidity constraints for business growth. As regards the economic conditions, we show that own-account workers are less likely to hire employees during recessions, which supports the *prosperity-pull* argument. Finally, we also detect the importance of some factors at the environmental and institutional level such as a higher education level of employees and consumers, a higher expenditure on employment incentives and a lower degree of employment protection.

The remainder of this paper is structured as follows. Section 2 provides some brief theoretical arguments about the role of some individual-level and aggregate-level variables on the own-account workers' decision to hire employees. Section 3 describes the data, methods and empirical results from our previous studies mentioned above. Finally, the concluding remarks of the study are put forth in Section 4.

2. Brief Theoretical Background

This section provides some brief theoretical arguments that explain the effects of individual and macro-economic factors on the individual decision of becoming self-employed with employees (employer) from own-account self-employment.

Individual factors

Human capital endowments are important not only in establishing a business but also in hiring other workers. These endowments take shape as entrepreneurial abilities to *perceive* and *exploit* business growth opportunities. These abilities can be influenced by many forms of human capital: education (Casson 1995), work experience (Shane 2003, p. 75) and knowledge of the market (Jovanovic 1982). Thus, entrepreneurs with higher endowments of human capital are expected to employ larger workforces (Lucas 1978; Brock and Evans 1986; Cowling et al. 2004). When concentrating on the role of liquidity constraints, one possible impediment for entrepreneurs before deciding to opt for growth is simply the lack of capital. If entrepreneurs cannot borrow to attain their profit-maximizing levels of capital, then those entrepreneurs who have substantial personal financial resources will be more successful than those who do not (Holtz-Eakin et al. 1994).

Macro-economic factors

Successfully exploiting business opportunities and, hence, employing other labour, not only depends on individual factors but also on aggregated ones. We refer here to the institutional and macro-economic environment in which entrepreneurs run their businesses.

As regards macro-economic conditions, individuals may opt for self-employment due to a lack of alternative employment options (*recession-push* argument). In contrast, individuals may enter self-employment when prospects in the economy are good (*prosperity-pull* argument). These theoretical arguments have been mainly constructed to explain entry decisions (see Parker 2011) but they do not necessarily fit well to predict hiring decisions. The extent to which employing new personnel is stimulated by recessionary situations seems limited. On the contrary, job creation by the self-employed seems more likely in situations of favourable business conditions and high demand for goods and services.

The education level of the population can also play a role in the decision to recruit additional staff. Thus, the education level of employees and consumers may shape both supply and demand functions of entrepreneurs' outputs. In particular, a higher share of educated employees may positively affect the entrepreneur's productivity whereas a higher share of educated consumers may lead to a higher level of demand for innovative products and services (J.M. Millán et al. 2014).

Concerning the impact of the institutional environment and, in particular, the role of labour market regulation, there is a heated debate in Europe (J.M. Millán et al. 2012; Román et al. 2011, 2013). Thus, differences in the degree of employment protection and the expenditures on employment incentives can influence the decision to become an employer. *First*, the risk for entrepreneurs of hiring an employee is bigger in situations of strong employment protection: if the firm wants to let the employee go (either voluntarily or involuntarily), the costs of dismissing the employee are relatively high. Strong employment protection

thus creates a disincentive for entrepreneurs to hire employees which, moreover, may be especially pronounced for smaller firms (Parker, 2007). *Second*, as one of the most important active labour market policies, the expenditure on employment incentives is, by definition, expected to increase hiring decisions. However, the economic literature offers four negative indirect effects that might outweigh the positive direct employment effects: *deadweight*, *displacement*, *temporary nature* and *substitution* (Bishop and Montgomery 1993; De Koning 1993; Dahlberg and Forslund 2005; Betcherman et al. 2010).

3. Empirical Evidence

This section aims to offer an overview of some of our previous works (Congregado et al. 2010; A. Millán et al. 2013, 2015; J.M. Millán et al. 2014; Román et al. 2014). These works provide an exhaustive empirical analysis of the individual (human capital and liquidity constraints) and aggregate-level determinants (business cycle, education level of the population, employment protection legislation, and employment incentives) of the transitions from own-account worker to employer in Europe. The literature on the specific impact of these phenomena on the post-entry performance of entrepreneurs (in general), is limited. This holds even stronger for the literature on the link with *job creation by own-account workers*, the topic of the works we are reviewing in this study.

Data

The reviewed papers use data from the European Community Household Panel (henceforth ECHP). The ECHP is a panel of households in the EU-15 covering the period 1994-2001.³ This panel offers information on 60,500 nationally representative households, which includes approximately 130,000 individuals aged 16 years and older. Every year, all members of the selected households in each country are interviewed about issues related to demographics, the labour market, incomes and living conditions. The same questionnaire is used for all countries, which makes the information directly comparable.⁴

Econometric framework

The reviewed papers mainly use random effects binary logit models that control for unobserved heterogeneity across individuals (Wooldridge 2002).⁵ In these models, the probability of switching from own-account worker in year t to employer in year $t+1$ is assumed to depend on a set of individual characteristics and economic variables, X , observed at time t . Thus, an individual i who is own-

3. The ECHP data are used with the permission of Eurostat (contract ECHP/2006/09, held with the Universidad de Huelva).

4. Additional details on the ECHP data can be found in Peracchi (2002).

5. In Congregado et al. (2010), multinomial logit models are applied.

account worker at time t will be observed as employer at time $t+1$ if the utility derived from his new role as employer exceeds that obtained from own-account work. Consequently, the probability of switching can be written as:

$$\Pr(Y_{i,t+1} = 1) = \Pr(U_{i,t+1}^{Emp} > U_{i,t+1}^{OA} \mid U_{i,t}^{Emp} \leq U_{i,t}^{OA}) = F(\beta' X_{i,t} + u_i)$$

where $Y_{i,t+1} = 1$ if the individual who was own-account worker in period t becomes employer in period $t+1$, and $Y_{i,t+1} = 0$ if the individual continues as own-account worker in period $t+1$. The vector $X_{i,t}$ represents individual characteristics and economic conditions in the year prior to moving into the new status, β is the associated vector of coefficients to be estimated, u_i is a disturbance term that includes the time-invariant unobserved heterogeneity (the person-specific effect), and $F(\cdot)$ is specified as the logistic cumulative distribution function.

Empirical results on individual level determinants

This subsection summarizes the main results of our empirical analyses on the individual level determinants of hiring decisions of own-account workers in Europe. In particular, we concentrate on the effects of variables capturing human capital and the possible presence of liquidity constraints.

With respect to human capital variables, first, we observe a robust positive relationship between higher education and the probability that own-account workers expand their labour force (Congregado et al. 2010; A. Millán et al. 2013, 2015; J.M. Millán et al. 2014; Román et al. 2014). Further, the presence of relatives working as self-employed is associated with a higher likelihood of hiring employees, which reflects the importance of intergenerational transfers of human capital for business growth (Congregado et al. 2010; J.M. Millán et al. 2014). Regarding job tenure, our results show both a positive linear (Congregado et al. 2010) and non-linear (U-shaped; A. Millán et al. 2013, 2015; Román et al. 2014) impact of the number of years of experience as an own-account worker on the probability of becoming a job creator, which suggests that also *venture-specific* work experience (i.e., work experience obtained in the own firm) is important for taking on personnel.

Concerning entrepreneurship experience in general, we find that own-account workers are more likely to become employers when they have been self-employed in the past (Congregado et al. 2010), which suggests that people learn from earlier self-employment experiences. Similarly, human capital acquired in previous spells of paid employment increases business growth chances for own-account workers as well (Congregado et al. 2010, A. Millán et al. 2015). Finally, as Congregado et al. (2010) stress in terms of the relative importance of human capital for business growth, informal acquisition of human capital (i.e., previous experience in the labour market or intergenerational transfers) presents stronger effects than do the processes associated with formal education.

When liquidity constraints are considered, results of the reviewed papers show that the incomes of own-account workers in the previous period have a positive effect on transitions to employership (Congregado et al. 2010). On the one hand, this result supports the existence of liquidity constraints for business growth⁶. On the other hand, it supports the idea that an own-account worker's successful development of an entrepreneurial venture should result in a transition to employer, which is the natural expansion of the business. Other proxies aiming to capture the role of liquidity constraints, such as home ownership, the income situation compared to last year, the ability to make ends meet (A. Millán et al. 2015) and having some money left to save considering a household's income and expenses (A. Millán et al. 2013, 2015; Román et al. 2014), also have a positive effect on transitions, further supporting the existence of liquidity constraints.

Empirical results on aggregate level determinants

This subsection concentrates on the effects of country-specific variables in the decision to hire employees with a special focus on four key elements: the role of economic conditions, education levels of the population, employment protection, and employment incentives.

With regard to macro-economic conditions, we observe that the *prosperity-pull* argument applies to those entering employership from own-account work, which supports the importance of expansionary periods for recruiting personnel or, in other words, our results show that own-account workers are less likely to hire employees during recessions.⁷ These results are robust, irrespective of the measure of the business cycle used, either the national unemployment rate (Congregado et al. 2010; J.M. Millán et al. 2014) or the GDP growth rate (A. Millán et al. 2015; Román et al. 2014).

With the purpose in mind of analysing the role of educational attainment at the macro level, in J.M. Millán et al. (2014) we incorporate as our main explanatory variable the share of the population holding tertiary education observed per country and year (source: Eurostat). This variable is defined as the percentage of the active population from 25 to 64 years with at least first stage of tertiary education (*International Standard Classification of Education –ISCED–* categories 5 and 6). Further, we also consider this educational attainment indicator at the regional level (observed at NUTS-1 level). In both cases, the result that stands out is the strong positive effect of the share of the population in

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6. It should be noted though that a higher income of the entrepreneur may also reflect a higher human capital level of the entrepreneur, possibly having a positive impact on job creation. To the extent that the income in the previous period was obtained from the current business, the effect may also reflect the viability of the business. To summarize, the positive effect of income on the transition to employership may only partly reflect liquidity constraints. However, we also note that the positive effect was also found for other proxies of liquidity constraints.
 7. This result does not imply, nor does it exclude, that the impact of recession periods on the probability of hiring personnel is different for own-account workers and small and medium-sized firms.

tertiary education. Thus, higher educated individuals in an economy may benefit own-account workers' performance (including expansion) by increasing the supply of high-skilled labour on the labour market and by acting as critical consumers demanding innovative products from entrepreneurs.

Regarding employment protection, in A. Millán et al. (2013) we include an *employment protection legislation index* as our main predictor (source: *OECD Employment Database*). This indicator is intended to measure the strictness of employment protection from less to more protected workers. As defined by the OECD, the employment protection legislation refers to regulations about hiring and firing, where higher values of the index reflect that it is more difficult (costly) to hire or fire employees. We find a negative impact of our index on the probability of switching from own-account worker to employer. Therefore, as argued by Parker (2007), a stricter degree of protection seems to impose sunk costs for self-employed workers who decide to take on employees, which, *ceteris paribus*, causes many own-account workers to refrain from hiring employees. Let us stress, however, that a stricter protection of workers is also observed to lower the number of job dismissals in A. Millán et al. (2013). These results suggest the existence of a trade-off of higher employment protection legislation in terms of benefits for those individuals who have a job (the 'insiders') and those who don't (the 'outsiders').

With respect to the effect of employment incentives on the individual decision to hire employees, in Román et al. (2014) we use the variable *employment incentives* (source: *OECD Employment Database*), which offers information on government expenditure on employment incentives as a percentage of GDP. Employment incentives are public programmes to facilitate the recruitment (and/or continuing employment in the context of restructuring or similar circumstances) of unemployed persons and other target groups (see Grubb and Puymoyen 2008 for additional details). Our results suggest that expenditures on employment incentives have a significantly positive impact not only on the likelihood of switching from own-account worker to employer but also on employment growth for firms of all sizes. This impact is, however, significantly smaller for smaller firms, suggesting that employment incentive programs are relatively less effective for own-account worker firms. On the other hand, when concentrating on the differential effects of incentive programs depending on the state of the economy, we find stronger effects of such incentives during recessionary periods, but only for firms without employees (i.e., own-account workers).

Summary of the empirical evidence

Table 1 summarizes the main contributions of the five papers reviewed in this work.

Table 1: Summary of the empirical evidence

Paper	Focus	Method	Main predictors	Main results
Congregado et al. (2010)	Hiring decisions by own-account workers.	Multivariate non-ordered discrete choice model: transitions from own-account work to (i) employership; (ii) paid employment; (iii) unemployment; and (iv) inactivity.	Human capital: formal education, previous experience in the labour market, relatives working as self-employed. Liquidity constraints: business earnings. <i>Source: ECHP, Eurostat.</i> Business cycle: national unemployment rate. <i>Source: OECD.</i>	Informal acquisition of human capital (previous experience as self- and paid employed and inter-generational transfers) presents stronger effects on the decision of hiring employees than do the processes associated with formal education. Business earnings have a strong positive effect on the likelihood of recruiting personnel. National unemployment has a strong negative impact on hiring decisions, which supports the <i>prosperity-pull</i> argument.
A. Millán et al. (2013)	Hiring decisions by own-account workers. Firing decisions by very small firms (1-4 employees).	Bivariate discrete choice models: transitions (i) from own-account work to employership; and (ii) from very small firms (employers with 1 to 4 employees) to own-account workers.	Employment protection legislation index (EPL). <i>Source: OECD Employment Database.</i>	Strictness of EPL is negatively related to both hiring and firing decisions, and hence, to labour mobility.
A. Millán et al. (2015)	Hiring decisions by own-account workers.	Bivariate discrete choice model: transitions from own-account work to employership.	Business cycle: national GDP growth rate. <i>Source: OECD Economic Projections.</i> Business cycle: reported household's general feeling about the present economic situation. <i>Source: ECHP, Eurostat.</i>	Positive cyclical effect on transitions from own-account worker to employer irrespective of the measure of the business cycle used (i.e., at either the macro or micro level).

Table 1: (continued)

Paper	Focus	Method	Main predictors	Main results
J.M. Millán et al. (2014)	Entrepreneurship success: hiring decisions by own-account workers; self-employment earnings and survival; survival as an employer.	Bivariate discrete choice models: (i) transitions from own-account work to employership; and (ii) survival as an employer. Multivariate non-ordered discrete choice model: self-employment survival to (i) paid employment; and (ii) non-employment (i.e., unemployment or inactivity). Censored regression model: self-employment earnings.	Share of the population holding tertiary education. <i>Source: Eurostat.</i>	Population's share of highly educated individuals has a positive impact on all measures of individual entrepreneurship performance.
Román et al. (2014)	Decision to hire employees.	Bivariate discrete choice models: probability of switching from a lower to a higher size-class firm.	Government expenditure on employment incentives as a percentage of GDP. <i>Source: OECD Employment Database.</i> Business cycle: national GDP growth rate. <i>Source: OECD Economic Projections.</i>	Expenditures on employment incentives have a significantly positive impact on hiring decisions for firms of all sizes. This impact is significantly smaller for smaller firms. Stronger effects of employment incentives during recessions, but only for own-account workers.

4. Conclusions and Discussion

Within the European entrepreneurial promotion policies, the relative weight of instruments oriented towards the workforce expansion of the self-employed is small, as compared to the importance of other measures aimed at facilitating the entry of the unemployed or other target groups into self-employment. The lack of useful guidelines within the existing entrepreneurship research might be argued as an important reason for this unbalanced distribution. To shed some light on this issue, this paper reviews a small stream of empirical literature which, by using the European Community Household Panel (ECHP), focuses on the micro and macro level determinants of the own-account worker's decision to hire employees. The main conclusions and implications of our review are summarized below.

First, our overview shows the importance of fostering processes for the acquisition of (entrepreneurial) human capital to favour job creation by the self-employed. In this respect, informal acquisition processes such as previous experience in the labour market, *venture-specific* work experience or intergenerational transfers, have been found to have stronger effects on the

decision of hiring employees than do the processes associated with formal education (Congregado et al. 2010). Furthermore, based on our finding that past spells of self-employment are an important driver behind the decision to hire employees, policy makers may consider reviewing the existing bankruptcy legislation with the aim of making restarting more attractive to entrepreneurs.

Second, we observe how liquidity constraints and recessions reduce the probability of transitioning from own-account worker to employer. Our results hence stress the value of facilitating access to credit in economic downturns for the smallest SMEs in order to mitigate the negative consequences of recessions on job creation by own-account workers. However, bearing in mind the relevance of human capital described above, suppliers of credit to entrepreneurs might consider the human capital levels of the applicants if the goal is to promote a type of self-employment that contributes to the job generation process (A. Millán et al. 2015).

Third, our review also shows that the probability of employing personnel is not only affected positively by the education level of the own-account worker but also by the share of highly educated individuals in the population. In consequence, educational policies may be viewed as an instrument to develop high-quality entrepreneurial businesses. In particular, an education system that results in a higher share of people with tertiary education levels will produce more productive entrepreneurs together with more productive employees where the latter will benefit the former and vice versa (J.M. Millán et al. 2014, p. 627).

Fourth, stricter employment protection is found to have a negative impact on the probability of switching from own-account worker to employer. As expected, stricter employment protection is also found to lower the number of job dismissals, so that the net effect of stricter employment protection is a lower level of labour mobility in an economy (A. Millán et al. 2013). This is a relevant finding since higher labour mobility is associated with higher levels of knowledge spillovers and productivity growth (see, e.g., Breschi and Lissoni 2001; Cooper 2001).

Fifth, it is found that expenditures on employment incentives have a positive impact on employment growth for firms of all sizes, although this impact is smaller for own-account worker firms. On the other hand, we detect the employment impact of incentive programs to be stronger during recessionary periods, but only for own-account workers (Román et al. 2014). Policy makers are hence confronted with a challenge: on the one hand there is pressure to cut government expenses during recessions, whereas on the other hand, when job creation by own-account workers is considered, expenses on employment incentive programs are especially effective during recessions.

Future research may focus on integrating the models from the five papers in one encompassing model. In particular, the way in which the papers deal with structural cross-country variations is slightly different. Four of the papers (Congregado, 2010; A. Millán et al., 2013, 2015, Román et al., 2014) include a

full set of country fixed effects dummies, thereby making sure that the coefficients for the respective macro-level variables of interest capture over-time variations. However, rather than including country dummies, J.M. Millán et al. (2014) control for cross-country variations by including a wider set of country-level control variables. Besides combining the various independent variables of interest from the five papers, an integrative model would have to include either a full set of country fixed effects dummies or a wider set of country-level control variables.

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