

Dependent self-employment as a way to evade Employment Protection Legislation

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Abstract

The combination of a strict Employment Protection Legislation (EPL) with an active self-employment promotion policy might become a breeding ground for what is called “false” self-employment. In fact, in this framework, employees’ traditional work is being outsourced to self-employed workers, just to omit employers’ social security contributions, to reduce tax liabilities or any adjustment cost due to this EPL. By using the European Community Household Panel for the EU-15 (ECHP, 1994-2001), we provide a tentative approach to investigate this phenomenon in Europe.

The objective of this paper is twofold. First, we test whether the strictness of EPL increases the probability of switching to self-employment inside the previous firm. And second, we also try to find differences in factors affecting the transitions from paid-employment to “false” and “true” self-employment.

Keywords: Self-employment, occupational choice, labour market institutions, outsourcing, EU-15

JEL classification: J21, J28, K31, L22

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1. Introduction

It is commonly argued that Employment Protection Legislation¹ (EPL) retards self-employment by disproportionately imposing burdens on the smallest firms. In a sense, EPL discourage individuals from becoming self-employed workers by imposing hiring and firing costs that smallest firms can often less afford. The available evidence lends only modest support to that notion that EPL retards self-employment. Kannianen and Vesala (2005) ran regressions using pooled quinquennial data from several OECD countries over the period 1978-98 and reported a significant negative relationship between self-employment rates and four different measures of EPL. However, subsequent research such as Robson (2003) and Torrini (2005) has been unable to replicate these findings. In fact, a topic of public discussion is whether traditional work done by employees is being outsourced to self-employed, just to omit payments for the social security, to reduce tax liabilities or any adjustment cost due to the EPL, the so-called phenomenon of “quasi” self-employment, “dependent” self-employment or “false” self-employment. This fact could explain, to some extent, the stylized fact that can be observed in figure 1, where we present in the horizontal axis the OECD overall EPL index² and in the vertical axis the self-employment rate of several OECD countries.

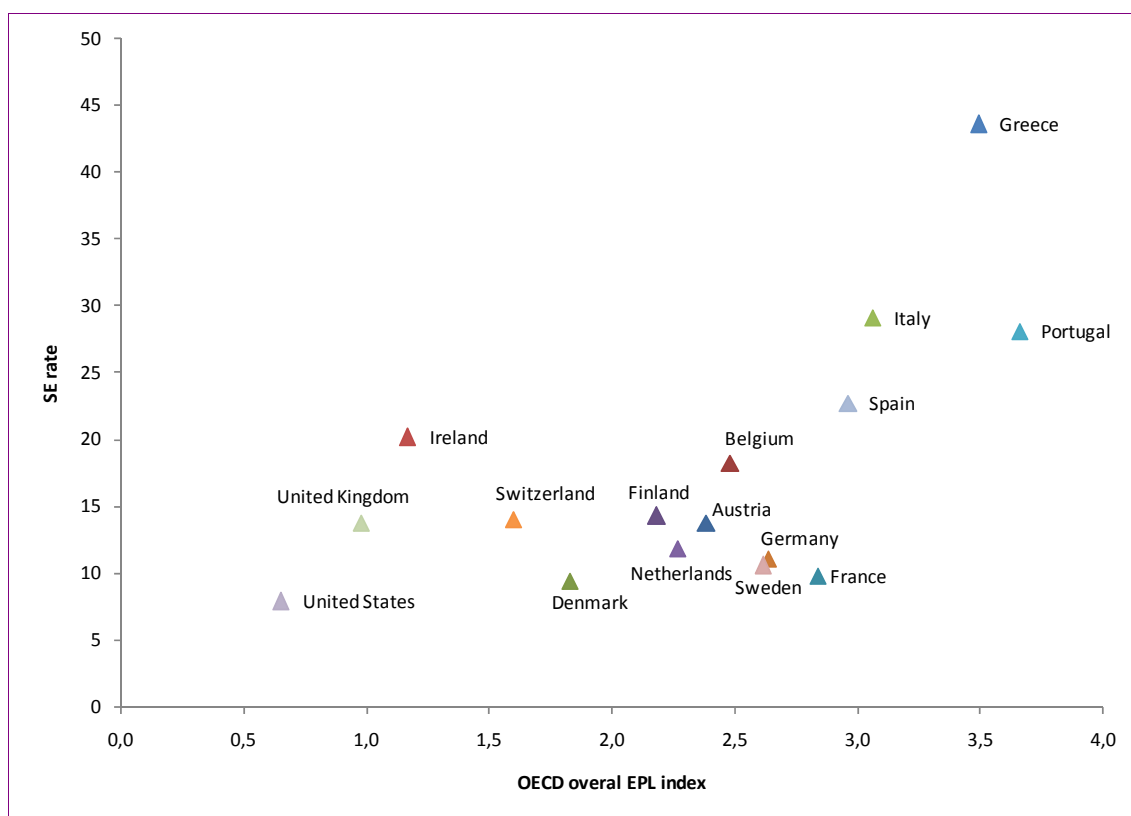


Figure 1: Employment Protection Legislation strictness and self-employment rates, 1998.
Source: OECD, Labour Market Programmes Database.

¹ EPL refers both to regulations concerning hiring (*e.g.* rules favouring disadvantaged groups, conditions for using temporary or fixed-term contracts, training requirements) and firing (*e.g.* redundancy procedures, mandated prenotification periods and severance payments, special requirements for collective dismissals and short-time work schemes). Various institutional arrangements can provide employment protection: the private market, labour legislation, collective bargaining agreements and, not the least, court interpretations of legislative and contractual provisions. Some forms of *de facto* regulations are likely to be adopted even in the absence of legislation, simply because both workers and firms derive advantages from long-term employment relations.

² A detailed description of this index can be found in Appendix B.

It seems that instead of supporting the existence of a negative relationship between EPL strictness and self-employment rates, there exists a positive one. Therefore, within this paper we are wondering if this “false” or “dependent” self-employment -as a way to evade EPL- is behind these unclear results.

Traditionally self-employment is equated with entrepreneurship and legally it is considered to be a form of independent contracting and thus outside the ambit of labour protection and collective bargaining. But the evidence suggests, however, that many of the self-employed, especially those who do not employ other workers, are much more like employees than they are like entrepreneurs³.

As OECD (2000) points out, several countries, at different times, have seen growing numbers of self-employed people. Some of the growth in self-employment may have been generated by the opportunities it offers to pay fewer taxes; some stems from changes in industrial organization, such as the increase in outsourcing; and some is no doubt simply a response to the new opportunities offered by OECD economies. In this paper we focus on the first case, self-employed people who work for just one company and, and whose self-employment status may be little more than a device to reduce total taxes and Social Security contributions paid by the firms and workers involved.

It is a well-known fact that governments in an increasing number of countries have sought to use self-employment to reduce unemployment and foster entrepreneurship. Most types of interventions were justified by the presence of barriers of entry into self-employment, (i.e. capital market failures; administrative burdens, and even the lower social security protection of the self-employed relative to wage earners). In connection to this and as a reaction to the high and increasing number of unemployed people, in Europe above all, a number of governments have introduced special policies to facilitate entry into self-employment for women, young people and unemployed people.

In this way, the expected effects of these policies, the reduction of the optimal firm size or even changes in the socio-demographic structure of the labour force has been considered as key elements for explaining the increased self-employment rates during the last two decades. However, the combination of these policies with a strict EPL could generate a non-desired effect. We will agree on that a high EPL for paid-employees—which may create a rigid framework for firms- combined with a deliberate and active promotion of self-employment, could turn into a distortion of occupational choice⁴.

In sum, some transitions from paid-employment to self-employment can be interpreted as the reaction to overly-rigid labour and product markets and high levels of taxation. In this framework, incentives to promote self-employment might have encouraged the development of “false” self-employment, that is, people whose conditions of employment are similar to those of employees, who becomes self-employed simply to reduce tax liabilities and Social Security payments, to improve the flexibility of the firm or to improve (or even maintain) their current

³ Fudge (2003)

⁴ In fact, at the same time as introducing policies to encourage self-employment, a number of governments have been concerned with the possible growth of “false” self-employment (work situations which are classed as self-employment primarily in order to reduce tax liabilities). A primary objective is to reduce the level of tax avoidance. While the main policy instruments involved are fiscal ones, labour market policies are also important, because incentives for “false” self-employment may also stem from overly strict labour protection laws. In addition, it has been suggested, for Germany, those policies to encourage self-employment, particularly those which encourage unemployed people to enter self-employment, may encourage the development of self-employed businesses with relatively low levels of resources and that part of these might be classed as a form of false self-employment (Pfeiffer 1999).

working conditions. From this perspective, the coexistence of a set of labour market rigidities introduced by strict EPL⁵ with an incentive spectrum designed to favour transitions to self-employment, might generate distortions in the occupational choice decisions and to have non-expected effects. This fact could explain, in some extent, the stylized fact that points out that stricter EPL is strongly associated with higher rates of self-employment.

The implications for the employment policy outcome and particularly for the efficiency of those policies designed to foster self-employment, make this a matter worthy of further research. It is very important to know whether the increasing rates of self-employment simply reflect the reaction of employers to higher costs of labour market regulation and taxation and therefore they would be an indicator of growing “dependent” self-employment, or if they reflect a genuine rebirth of entrepreneurial activity in these countries.

In this context, the aim of this paper is to provide some new empirical evidence about these workers who are outsourced in order to evade the more onerous elements of the EPL in contrast with workers who decide to switch to self-employment to capture a new profit opportunity. From this perspective only these last workers should be considered as “true” self-employed. By contrast, we will use the term “false” or “dependent” self-employed to refer to an individual who, objectively speaking, is an employee, but who, for reasons connected to the evasion of regulatory legislation and by using the incentive structures is tempted to switch from paid-employment to self-employment⁶. That is, we try to test whether the strictness of EPL increases the probability of switching to self-employment inside the previous firm, what we called “dependent” self-employment. And also, we try to find some differences between factors affecting transitions to “false” and “true” self-employment.

In sum, this paper aims to provide evidence to address three main questions: i) Do employers in countries with relatively more stringent EPL tend to evade these regulations making use of self-employment promotion policies?; ii) Which are the characteristics of the employees that are more likely to accept agreements with their employers and to become “dependent” self-employed workers?, and iii) What are the differences between those employees who become “false” self-employed and those ones who become “true” self-employed?

To carry out this task, and using microdata from the European Community Household Panel (ECHP) the EU-15, covering the period 1994-2001, we report estimates of a set of binary discrete models in which transitions from paid-employment to self-employment are explained by a set of observed individual characteristics and economic variables. Assuming that those transitions to self-employment inside the firm are those associated to the “false” self-employment phenomenon, we can explore the employment protection legislation effect –using both, aggregate and individual measures⁷- on this type of transitions and inquire about the role played by other elements.

The main findings of this paper are that EPL, business cycle and active labour market policies does matter for employees in their decision to become self-employed. Indeed, those individuals who live in countries with relatively more stringent EPL in recession periods (recession-push hypothesis) tend to be those where firms and workers make greater use of self-employment incentives to enhance labor flexibility. By contrast, “true” self-employment is related with prosperity periods (prosperity-pull hypothesis).

⁵ These measures are used as a way to capture potential sources of rigidities –i.e. dismissal costs or high payments to social securities- for the firm.

⁶ Some authors use the terms borderline employee and borderline self-employed. These terms refer to individuals whose status is, objectively speaking, so unclear that they cannot be easily classified as being in one group or another.

⁷ See Appendix B.

The rest of the paper is organized as follows. In Section 2 we review the theoretical links between EPL and self-employment, focusing in the costs and benefits of “false” self-employment for firms and workers. Section 3 summarizes previous findings of the empirical literature. Section 4 presents the econometric framework. In Section 5 we present the data used in our empirical analysis. Section 6 presents the empirical results on the transitions from paid-employment to self-employment focusing in these transitions arranged by employer and employees as a way to elude regulations, searching the most flexible and economical alternative for both. Finally, section 7 concludes.

2. Theoretical framework

A set of overlapping reasons has been put forward for the recent growth of the self-employment rate. Traditionally, economists relate self-employment growth with the deterioration of labour market conditions. However, more recently, researchers have been stressing out other reasons such as the market reaction to overly rigid labour and product markets and the high level of taxation, changes in industrial organization, the availability of new employment opportunities in OECD economies, and special policies directed to foster self-employment entry.

As well as the decomposition of capital into separate corporate entities in an endeavour to replicate efficient capital markets, managers of large firms have exhibited a greater interest in disintegration, by arranging aspects of production through subcontracting, franchising, concessions and outsourcing. By turning an employee into a subcontractor, the management of a large firm substitutes commercial contracts for employment relations⁸. In addition, the provision of services by independent contracting is a prevalent form of acquiring labour in many industrial sectors such as construction. Despite the form of the contractual relation in all these instances, however, in substance the workers frequently appear to be in an equivalent position of social subordination and economic dependence to that of ordinary employees, and so in need of those employment protection rights from which they are often excluded by virtue of having ceased to qualify as employees⁹.

Economic theorists have constructed formal models assessing how EPL is likely to affect labour market performance¹⁰. However, research on the impact of this regulation on self-employment and its composition is limited. A different degree of strictness of regulation governing employment versus self-employment (fixed-term contracts, dismissal costs, Social Security contributions, tax allowances) may affect the structure of employment. Stricter regulations for employment joint to an incentive structure designed to promote self-employment are likely to promote a shift from paid-employment to self-employment by means of mutually arrangements. This has the potential effect of distorting the optimal composition of employment between paid-employment and self-employment. In this way some traditional works done by dependent employees are being outsourced to “false” or “dependent” self-employed. In sum, this phenomenon will be the result of the interaction between stricter EPL and entrepreneurship promotion policies.

As we mentioned in the previous section, this paper explores the role of non-agricultural self-employment as a close alternative to paid-employment, and as the response to labour protection

⁸ This contractual arrangement not only applies to the rapidly increasing numbers of self-employed workers, but also to many other groups of marginal workers, such as temporaries, casuals, part-timers and homeworkers

⁹ Collins (1990)

¹⁰ Labour market regulation may have significant effects on employment growth (Bertola 1992; Bentolila and Bertola 1990; Layard and Nickell 1999; Millard and Mortensen 1997; Millard 1996; Nickell 1982), on employment rates (Scarpetta 1996; Layard and Nickell 1999), on unemployment (Kugler and Pica 2004), on productivity (Akerlof 1984; Piore 1986), or on wages and social assistance (Bentolila and Dolado 1994).

policies that affect the opportunity cost of entering and remaining self-employed, such as EPL and compulsory contributions to the social security system made by the self-employed.

Four general savings in labour costs may spring from external contracting. First, the owner of the business may avoid or reduce the quasi fixed costs¹¹ associated with employment, such as hiring and training. Second, the external contractor may be able to take advantage of lower wage rates outside the firm. Instead of being compelled to pay the relatively high rates of the firm's internal labour market, through vertical disintegration, the work may be performed at lower cost in the external market, taking advantage of non-union rates, regional differences and labour market segmentation. Third, the firm may be able to reduce or avoid the costs involved in compliance with employment protection rights. Finally, by the avoidance of long-term contractual relations with members of the organization, the owner of the business may be able to use his bargaining power to impose stricter contractual controls over performance and avoid the need for the expense of cooperative give and take typical of the long-term relational contracts of employment which predominate inside organizations.

This kind of outsourcing supposes not only a benefit for firms - a way of evading reaction to overly rigid labour and product markets and high levels of taxation- but for employees too, given that, subsidies or tax allowances designed for promote self-employment or even unemployment benefits, can compensate the losses derived to give up employees.

The key intent of EPL is to reduce economic uncertainty by enhancing job and income security. When a worker accepts to switch to self-employment –voluntarily or not- in order to evade employment protection legislation or tax, this transition could not imply an increase of uncertainty because the employer could guaranty the demand. Indeed, the transition can be design in a way that employee take advantage of some instruments designed to promote self-employment. In turn, this type of arrangement allow to employer to evade the most onerous elements of the EPL. Obviously, the bargaining power might be unequal. For this reason, the line between (illegitimate) 'evasion' and (legitimate) 'avoidance' of protective legislation may be a very fine one. The parties can 'collude' in adopting a particular working arrangement in order to evade tax or national insurance contributions.

From this perspective the increasing of outsourcing and subcontracting activities, could be considered more as a reaction to overly rigid labour and product markets and high levels of taxation than as phenomenon related with structural changes.

In this sense, over the last two decades, we have seen an increase in outsourcing and subcontracting activities, which appear to be replacing hierarchies in firms by market forms of governance. There is evidence that an increasing share of these outsourcing activities is based on contracts where the outsourced worker is both economically dependent on the firm she contracts with and in hierarchical subordination to it¹². Such relationships have been termed "dependent" self-employment or "dependent" outsourcing¹³. In the terminology of the European Industrial Relations Observatory (EIRO), in this paper we are interested in employment relationships which can be regarded as "bogus" self-employment, i.e. subordinate employment relations which are disguised as autonomous work, usually for fiscal reasons, or in order to avoid the payment of social security contributions and thereby reduce labour costs, or to circumvent labour legislation and protection, such as the provisions on dismissals. Therefore,

¹¹ Harvey (2003) claims that this shift towards dependent self-employment in the construction industry means that, firstly, payments for these workers are outside any wage bargaining, secondly, they lose their entitlements such as holiday pay, sick pay, unemployment benefit, and thirdly, they lose most employment protection for dismissal or disciplinary measures. These changes, together with the removal of the employer's obligation to pay any national insurance contributions when outsourcing, led to an overall reduction in labour costs through self-employment of roughly 20 to 30 per cent.

¹² ILO (2003), EIRO (2002), OECD (2000)

¹³ ILO (2003), EIRO (2002), Supiot (2001)

we refer to work relationships where subcontractors are formally self-employed, but their conditions of work are similar to those of employees. These workers do not have a labour contract, but supply their labour to their contractor on the basis of a private contract. They are however economically dependent on their contractor and face subordination (to some extent). Economic dependence basically means that the “dependent” self-employed worker takes the entrepreneurial risk. Subordination, on the other hand, refers to dependence in terms of time, place and content of the work. In sum, the “dependent” self-employed persons bear (part of) the entrepreneurial risk without having the entrepreneurial possibilities of independent self-employed persons because they do not appear on the external market since they have in most of the cases only one contractor¹⁴.

Once having defined the type of transitions we are interested in, some initial hypothesis we want to test may be formulated.

Hypothesis 1: The combination of a strict EPL and an active self-employment promotion policy may generate distortions in the occupational choice problem, increasing transitions from paid-employment to self-employment, by the formula of “dependent” self-employment. In that sense, when the work is outsourced as a result of mutually agreements between employers and employees, employers are allowed to evade the more onerous elements of the EPL and employees may take advantage of self-employment incentives and tax allowances.

Hypothesis 2: This second hypothesis refers to business cycle effects. In this sense, we expect that when unemployment rates increases the bargaining power of employees decreases with respect to their employer’s counterpart. In this framework the EPL gives employers an extra-incentive to outsource certain works. Hence, transitions from paid-employment to “false” or “dependent” self-employment are expected to be counter-cyclical. So that in this case, the recession push-hypothesis should be appropriated. On the other hand and by contrast, workers who switch to “true” self-employment are searching for new profit opportunities, so that this type of transitions are more likely to appear during expansion periods. That is, in that case it is the prosperity pull- hypothesis what apply.

Hypothesis 3: And finally, we expect that the potential value of the severance payment should be another incentive to arrange a transition from paid-employment to self-employment. In fact, employer and employee can simulate a dismissal in order to receive an additional compensation (unemployment benefit or even its capitalization) remaining a short term in this state before to complete the transition to self-employment.

Testing these hypotheses is the objective of this paper. Before of doing this, in the next section we review the previous empirical evidence.

3. Previous empirical evidence

Due to a lack of micro datasets that allow identifying “dependent” self-employed workers until recently, there are only few empirical studies that investigate this phenomenon.

There are several papers that confirm that the “dependent” self-employment phenomenon is a crucial one. In this sense, Delage (2002) points out that in 2000 in Canada fully 30% of the own-account self-employed worked in client locations or locations supplied by clients. Furthermore, 37% of the self-employed (35% of men and 46% of women) received support from their clients; 24% (20% of men and 37% of women) received equipment, tools, or supplies from their clients. Moreover, in 2000, 15% of the self-employed (18% of the own-account self-

¹⁴ Muehlberger and Pasqua (2006)

employed) reported that their last employer was one of their clients, of whom 51% obtained more than half of their annual revenue from work done for their last employer.

For the UK, Burchel et al. (1999) claim that around 30% of those in employment hold an unclear employment status, suggesting that the use of the wider concept of “worker” rather than that of “employee” would increase the number of persons covered by employment rights by 5% of all those in employment in the UK. More specifically, using a broader definition in labour law would include individuals who contract their own personal services to an employer without having a contract of employment and who are (to some degree) economically dependent on the employer, because they derive a substantial part of their income from this employer. Moreover, Meager (1991) shows that a substantial part of the rise in self-employment in the United Kingdom in the Eighties occurred in the construction industry, where arrangements involving “false” self-employment are common.

For Australia, Wooden and Van den Heuvel (1995) report that, in 1994, 40 per cent of self-employed contractors were dependent only on their current employer, and their numbers had grown during the 1990s. For the United Kingdom, Freedman and Chamberlain (1997) argue that the grey area between employee and self-employment status has been growing, drawing particular attention to workers whose business consists of providing only personal services without providing any equipment or taking on their own employees. These workers are considered to be present in significant numbers in the oil, construction and computer industries, and among homeworkers and teleworkers, actors, television workers and journalists. In a number of other countries, including Belgium, Germany and Italy, the growth in the numbers of self-employed contractors working for just one company has led to policy concerns over “false” self-employment. Many homeworkers fall into this latter category (Schneider de Villegas 1990, Felstead 1996)¹⁵.

On the other hand, there are studies that try to find empirically the factors that influence the “dependent” self-employment phenomenon. Most of these studies refer to Italy, where “dependent” self-employed workers are identified as individuals that work on the basis of a contract of continuous and coordinated collaboration (sometimes called “parasubordinati”). In a paper of Muehlberger and Pasqua (2006), these “dependent” self-employed workers in Italy are analysed using the fourth quarter of the Italian Labour Force Survey 2004. They investigated whether and how, these workers differ from employees and (independent) self-employed workers. They find that these collaborators are not low qualified workers, but young, highly educated professionals. The contracts of continuous collaboration are, however not a port of entry into the labour market nor do they find that these contracts are a vehicle to more stable jobs. However, they seem to be a possibility for women to work part-time. Berton *et al.* (2005) use the Italian INPS data for the year 1999 and analyses the probability of changing the labour market status from employee to collaborator and vice versa. They show that for employees the probability of becoming a collaborator increases with age (especially for managers), but decreases with a higher hourly wage. Part-time female workers and less qualified workers are less likely to become a collaborator. Accornero *et al.* (2001) report that almost 30% of the 500 enterprises considered in their research employ collaborators mainly because of labour cost reduction and only secondarily to increase labour flexibility. Finally, Bertolini (2005) shows that continuous and coordinated contracts are often offered to part-time workers, because dependent part-time work is relatively expensive if compared to dependent full-time work in Italy.

There is little empirical research on dependent forms of self-employment in other countries. In a study on the British construction industry, Harvey (2003) argues that the strong increase of “dependent” self-employment is based on two major shifts in British public policy. First, while public demand for construction has been reduced due to a decline of public consumption, the

¹⁵ OECD (2000)

incentives for private home ownership, which shows a more volatile pattern than public demand, have strongly increased, leading to more labour flexibility in the construction industry. Second, the 1980s and early 1990s have seen both an increase in unemployment and supply-side policy measures to foster self-employment (Robson 1998, Taylor 1999). The increase in the British self-employment rate during the 1980s has been explained by two different hypotheses. While the first stresses that the rise in self-employment was connected to the absence of opportunities for paid-employment, the other explains the strong increase in self-employment with supply-side measures as the reduction in the rate of income tax (Robson 1998, Taylor 1999). In this sense, Böheim and Muehlberger (2006) explore the British Labour Force Survey that allows identifying self-employed workers that have no employees and work only for one company. This paper analyses the characteristics of “dependent” self-employed workers with data from the British Labour Force Survey. They investigate if, and how, “dependent” self-employed workers differ from employees and (independent) self-employed workers. They find that these “dependent” self-employed workers have lower labour market skills and less labour market attachment. It is shown that “dependent” self-employed workers are a distinct labour market group which differs from both employees and independent self-employed individuals. Men, older workers, those with low education and a low job tenure have greater odds of working in “dependent” self-employment than their counterparts. They argue that dependent forms of self-employment are used by firms to increase labour flexibility. Their empirical results indicate that “dependent” self-employment is concentrated in the construction and financial service sectors. Men have a greater risk of “dependent” self-employment than women and their results suggest it is workers with little or no formal education who have a greater risk of “dependent” self-employment than those with more or higher formal education. They find that “dependent” self-employed workers show persistency in this labour market status, but also low job tenure with the same employer.

Analysing an Austrian microdataset, Heineck *et al.* (2004) find that roughly 1.6% of the Austrian labour force are self-employed working only for one company and being bound to the instructions of the company they contract with. Logistic estimates show that married persons and women with an increasing number of children are more likely to be “dependent” self-employed. “Dependent” self-employment seems to be associated with higher qualification for men, but low qualification for women. Moreover, the probability of being “dependent” self-employed increases with age. Especially older men are more likely to be “dependent” self-employed than their younger counterparts.

However, to our knowledge, only Centeno (2000) studies the effects of labour market rigidity on self-employment. Using panel data from a set of OECD countries he finds a non-linear relationship between flexibility and self-employment share. But our work is the first attempt to study by using microdata the phenomenon of “dependent” self-employment as a way to evade EPL in Europe.

4. Data

The data used come from the European Community Household Panel (ECHP).¹⁶ The ECHP is a panel of households referring to the EU-15¹⁷, covering the period 1994-2001. Every year all members of the selected households in each country are interviewed about issues relating to demographics, labour market, income and living conditions. The fact that a relatively long period of data is available allows us to study the influence of, not just personal and demographic

¹⁶ ECHP data are used in accordance with the permission of European Commission-Eurostat; contract ECHP/2006/09, held with the *Universidad de Huelva*.

¹⁷ France, Luxembourg and Sweden have to be excluded from our analysis because these countries present missing values in relevant variables, and Greece and Ireland due to missing values in EPL variables.

characteristics, but also changes in the business cycle. The same questionnaire is used for all countries, which makes the information directly comparable.

The individuals in our dataset are asked which is his/her main activity status -variable PE001- (paid-employed, self-employed, unemployed, retired, in education...) and the year of start of current job -variable PE011-. From this information, we can identify those paid-employed individuals switching to self-employment from period $t-1$ to period t , and declaring either t is their year of start of current job –which we associate to “true” self-employment- or declaring they started their current job while they still was paid-employed –which we associate to “dependent” self-employment-.

Despite the fact that women have lower self-employment rates, our samples include men and women aged 21 to 59. Workers in the agricultural sector are also excluded because this sector is structurally different from the rest of the economy.¹⁸ Moreover, all self-employed individuals which are not full-time workers, that is, working under 30 hours per week, are also excluded from our final sample.¹⁹ Regarding wealth variables, incomes are corrected by Purchasing Power Parity (comparability across countries) and Harmonised Consumer Price Index (comparability across time). Finally, as national unemployment rates are tested as determining factors of the entrants to self-employment, standardised unemployment rates for Europe need to be used to avoid comparability problems.

5. Econometric Framework

In order to provide a framework for the empirical, standard binary logit models are used. Thus, as usual, the probability of switching from the starting status to the final is assumed to depend on a set of observed individual characteristics and economic variables X at $t-1$.

Thus, an individual who is paid-employed at time $t-1$ will be observed in self-employment (or “dependent” self-employment) at time t if the utility derived from self-employment (or “dependent” self-employment) exceeds that obtained from paid-employment. Consequently, the probability of switching can be written as:

$$\begin{aligned} \Pr(Y_{i,t} = 1) &= \Pr(S_{i,t} = 1 | S_{i,t-1} = 0) = \\ &= \Pr\left(U_{i,t}^{QSE \text{ or } TSE} > U_{i,t}^{PE} \mid U_{i,t-1}^{QSE \text{ or } TSE} \leq U_{i,t-1}^{PE}\right) = \\ &= \Pr\left(\beta' X_{i,t-1} + u_i + \varepsilon_{i,t} > 0\right) = F\left(\beta' X_{i,t-1} + u_i\right), \end{aligned}$$

where $Y_{i,t} = 1$ if the individual who was paid-employed in period $t-1$ becomes self-employed (“true” or “dependent” self-employed) in period t , and $Y_{i,t} = 0$ if the individual continues as paid-employed in period t .²⁰ $S_{i,t-1} = 1$ indicates self-employment (or “dependent” self-employment) in time t and $S_{i,t-1} = 0$ paid-employment in time $t-1$.

¹⁸ The “agricultural industries”, defined to include agriculture, hunting, forestry and fishing, are structurally different from the rest of the economy, in that self-employment is the natural employment status in these industries.

¹⁹ We decided not to include part-time employment within our estimations. This is due to the fact that those individuals doing two jobs at the same time might face short-term problems in one of the two activities, and look for complementary incomes just for a specific period of time. That would make the determinants of the transitions of those individuals simultaneously doing both jobs different from the determinants of those who opt for a single activity. We believe, therefore, part-time self-employment needs to be independently analyzed.

²⁰ The labour force status is observed once per year. Thus, if there are additional changes in status within the year, they are missed. It is assumed that there are just a few of these, and that their exclusion does not affect the results.

However, when we compare those individuals switching from paid-employment to “false” self-employment with those switching to “true” self-employment, the probability can be written as:

$$\begin{aligned} \Pr(Y_{i,t} = 1) &= \\ &= \Pr(U_{i,t}^{QSE} | PE_{t-1} \geq U_{i,t}^{TSE} | PE_{t-1}) = \\ &= \Pr(\beta' X_{i,t-1} + u_i + \varepsilon_{i,t} > 0) = F(\beta' X_{i,t-1} + u_i), \end{aligned}$$

where $Y_{i,t} = 1$ if the individual who was paid-employed in period $t-1$ becomes “dependent” self-employed in period t , and $Y_{i,t} = 0$ if the individual who was paid-employed in period $t-1$ becomes “true” self-employed in period t .

For both kind of exercises, the vector $X_{i,t-1}$ represents individual characteristics and economic conditions in the previous year to move 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)²¹, $\varepsilon_{i,t}$ is a random error term representing not person-specific unobserved variables, and $F(\cdot)$ follows a logit distribution²² with:

$$F(z) = \frac{\exp(z)}{1 + \exp(z)}$$

6. Results

This section presents the main results of the empirical analysis of some transitions from wage-employment to self-employment in some European countries distinguishing between true transitions to self-employment versus transitions to “quasi”- “false” or “dependent” self-employment.

6.1 Transitions from Paid-employment to “true” Self-employment

The column (1) in the table A1 (see Appendix A) reports estimates of the probability of transition into “true” self-employment, conditional on being paid employed. Leaving aside the effects of demographic characteristics, education, sectoral patterns and previous labour experience, let us concentrate on the effects of business cycles and the employment protection legislation.

Regarding the business cycle effect, proxied by means of the unemployment rate, a negative relationship is obtained between unemployment rate and the probability of transition, supporting “prosperity-pull” argument.

Finally, when focusing on labour market institutions effects we obtain that EPL for regular employment decreases the probability of transition to self-employment, whereas EPL for

²¹ Assume we have two observations y_{i1} and y_{i2} of individual i taken at two different points in time. Consequently, u_{i1} and u_{i2} would not be independently distributed as they are measured for the same individual. They would tend to be quite similar. As a result, there is a tendency to underestimate the true error variation across all respondents and overestimate the statistical significance of our coefficients. That is the reason why u_i is assumed as a disturbance term that includes the time-invariant unobserved heterogeneity (the person-specific effect). In this sense, as we will work with random-effects models, this term will be assumed as a normally distributed random variable with mean 0 and variance u_n .

²² The same exercises have been reproduced by using a probit specification of $F(\cdot)$. However, this estimation does not alter our empirical conclusions in any significant way.

temporary workers increases it. On the other hand, the Social Security Legislation Index increases the probability of transition, whereas the expenditure on Active Labour Market Policies as well as an individual measure of the potential severance payment that corresponds to the employee in case of dismissal decreases it.

6.2 Transitions from Paid-employment to “dependent” self-employment

In this section, we are interested in the transitions from paid-employment to self-employment but in which the individual that transits declares himself as self-employed worker but maintaining relation with the same employer. It is what we term “dependent” self-employment.

We estimated binary logit models, where this probability of transition depends of a set of explanatory variables related to gender, human capital (age, experience, education), other personal characteristics (marital status, children), and family background (presence of self-employed relatives). Variables trying to measure incomes and trying to capture the business cycle are also included. And finally, we also include as regressors aggregate measures of employment protection legislation for regular and temporary work, social security laws and active labour market policies expenditure, as well as an individual measure of potential severance payment. We are interested in transitions from full-time paid employment to self-employment. From this initial sample, the subsample is selected of individuals who are full-time employees (defined as working 30 or more hours per week) during a particular year and either continue in the same state or switch into self-employment next year. Our final sample, after removing cases with missing data for any of the relevant variables, yields 155,910 observations of which 723 (0.47%) refer to this type of transitions.

The column (2) of Table A1 reports the logit estimates.

Let us now revise the business cycle effects on this type of transitions. In this case we find a positive relationship between unemployment rate and the probability of transition to “dependent” self-employment, supporting “recession-push” argument.

Finally, when focusing on labour market institutions effects we obtain that Employment Protection Legislation for regular employment as well as for temporary work increases the probability of transition to “dependent” self-employment. Moreover, Social Security Legislation Index and expenditure on Active Labour Market Policies increase the probability of transition, whereas our individual measure of the potential severance payment that corresponds to the employee in case of dismissal seems not to be significant in the case of transitions to “dependent” self-employment.

6.3. “True” Self-employment vs. “Dependent” Self-employment

In this section, we compare people who transit from paid-employment to the “true” self-employment with people who transit from self-employment to “dependent” self-employment (maybe by means of an arrangement with their employer).

We estimated binary logit models, where the probability of transition to “dependent” self-employment depends of the same set of explanatory variables as before. Again, we are interested in transitions from full-time paid employment to self-employment. From this initial sample, the subsample is selected of individuals who are full-time employees (defined as working 30 or more hours per week) during a particular year and either continue in the same state or switch into self-employment next year. Our final sample, after removing cases with missing data for any of the relevant variables, yields 1,544 observations of which 723 (47.41%) refer to “dependent” self-employment transitions.

The third column of Table A1 reports the estimates of the probability of transition into “dependent” self-employment, conditional on being in full-time paid employment. In this case, the significant coefficients give us information about what are the variables that affect in an opposite way to each kind of transition from paid-employment to self-employment that we are considering separately.

Now, we find evidence on a positive relationship between unemployment rate and the probability of transition to “dependent” self-employment (recession-push hypothesis), whereas labour market institutions effects shows that a higher EPL will derive in a higher “dependent” self-employment incidence.

7. Conclusions

In this paper, we analyze “dependent” self-employment as part of the outsourcing phenomena generated by the cocktail made up by the conjunction of rigid employment protection legislation and an active self-employment promotion policy. We investigated whether, and how, these workers differ from employees and (independent or true) self-employed workers.

Results seems to confirm that, the coexistence of a map of incentives designed to foster self-employment joint to a stringent employment legislation protection system is a breeding ground for mutually agreed transitions from waged employment to self-employment.

In these agreements employer make a pact with an employee guarantying the future demand (work in the same firm) and even simulating a false dismissal. In this way wage-worker is eligible for all types of incentives including the unemployment benefit and its capitalization.

Finally, the finding of two opposite business cycle effects between “true” and “false” reaffirms our main hypothesis, and point out to the need to correct policies to encourage self-employment, particularly those which encourage unemployed people to enter self-employment, may encourage the development of self-employed businesses with relatively low levels of resources and that part of these might be classed as a form of false self-employment introducing new measures.

“Dependent” self-employment has crucial implications for social and labour market policies. The employment status under which a person carries out her work matters because the access to employment rights depends on the employment status. For instance, self-employed persons are widely excluded from employment protection and social security law.

8. References

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Appendix A: Main Results

Table A1. Entering true and “dependent” self-employment with country dummies

| | (1) SELF-EMPLOYED (SE) | | (2) TRUE SELF-EMPLOYED (TSE) | | (3) DEPENDENT SELF- EMPLOYED (DSE) | | (4) (DSE vs. TSE) | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------|----------------------------------------------|----------------|----------------------------------------------|----------------|-------------------------------------------------|----------------|
| | Prob [SE _t PE _{t-1}] | | Prob [TSE _t PE _{t-1}] | | Prob [DSE _t PE _{t-1}] | | Prob [DSE _t vs. TSE _t] | |
| Number of observations | 157016 | | 156293 | | 156195 | | 1544 | |
| Number of transitions | 1544 | | 821 | | 723 | | 723 vs. 821 | |
| Variables | Coef. | t-stat. | Coef. | t-stat. | Coef. | t-stat. | Coef. | t-stat. |
| Constant | -6.7637 | -12.55*** | -7.2605 | -9.57*** | -8.2445 | -10.19*** | -1.2247 | -0.9 |
| Demographic characteristics | | | | | | | | |
| Male | 0.5735 | 8.13*** | 0.5416 | 5.91*** | 0.6572 | 5.95*** | 0.1199 | 0.7 |
| Age | 0.0317 | 1.28 | 0.0859 | 2.54*** | -0.021 | -0.57 | -0.0801 | -1.3 |
| Age (squared) | -0.0007 | -2.15** | -0.0015 | -3.33*** | 0.0001 | 0.19 | 0.0012 | 1.55 |
| Cohabiting ⁽¹⁾ | 0.3239 | 4.36*** | 0.4309 | 4.42*** | 0.1597 | 1.40 | -0.2319 | -1.35 |
| Number of children under 14 | -0.0298 | -0.89 | -0.0721 | -1.64* | 0.0301 | 0.6 | 0.1331 | 1.65* |
| Relative(s) working as self-employed | 0.6194 | 7.7*** | 0.6636 | 6.09*** | 0.5826 | 4.94*** | 0.1948 | 1.06 |
| Education | | | | | | | | |
| Secondary education ⁽²⁾ | 0.0425 | 0.61 | 0.1212 | 1.3 | -0.0344 | -0.33 | -0.1539 | -0.93 |
| University studies ⁽²⁾ | 0.2446 | 3.05*** | 0.2246 | 2.12** | 0.2759 | 2.26** | -0.0205 | -0.11 |
| Employment characteristics | | | | | | | | |
| Industrial sector ⁽³⁾ | -0.6065 | -7.06*** | -0.6873 | -6.02*** | -0.4948 | -3.84*** | 0.0784 | 0.4 |
| Financial services ⁽³⁾ | -0.2113 | -2.03** | -0.2265 | -1.67* | -0.1795 | -1.12 | 0.0892 | 0.36 |
| Wholesale, hotels, restaurants & transport ⁽³⁾ | -0.2585 | -3.11*** | -0.2836 | -2.58*** | -0.2592 | -2.08** | -0.0106 | -0.06 |
| Other services ⁽³⁾ | -0.9854 | -10.03*** | -1.052 | -8.04*** | -0.8781 | -5.93*** | 0.0459 | 0.2 |
| Hours of work | 0.0364 | 12.19*** | 0.0314 | 7.74*** | 0.043 | 9.86*** | 0.0118 | 1.64* |
| Indefinite contract ⁽⁴⁾ | -0.6322 | -8.94*** | -0.7013 | -7.29*** | -0.5516 | -5.38*** | -0.1687 | -1.05 |
| Previous experience | | | | | | | | |
| Observed previous spell(s) as self-employed | 2.5809 | 37.04*** | 1.1955 | 9.40*** | 3.5547 | 38.85*** | 2.1255 | 6.46*** |
| Observed previous spell(s) as unemployed | 0.0896 | 1.51 | 0.2836 | 3.66*** | -0.1296 | -1.42 | -0.4281 | -2.66*** |
| Incomes | | | | | | | | |
| Dwelling owner | 0.0227 | 0.37 | -0.0648 | -0.81 | 0.1402 | 1.44 | 0.1966 | 1.33 |
| Annual capital and property incomes (1 lag) | 0.0001 | 3.39*** | 0.0001 | 1.47 | 0.0001 | 3.09*** | 0.0001 | 1.58 |
| Monthly work incomes | 0.0001 | 0.61 | 0.0001 | 0.67 | 0.0001 | 0.46 | -0.0001 | -0.62 |
| Business cycle | | | | | | | | |
| Annual unemployment rate | 0.0202 | 1.23 | -0.0395 | -1.68* | 0.0837 | 3.56*** | 0.1199 | 2.62*** |
| Country | | | | | | | | |
| Austria ⁽⁵⁾ | -0.2751 | -1.12 | -0.4288 | -1.31 | -0.3095 | -0.79 | 0.2353 | 0.39 |
| Belgium ⁽⁵⁾ | -0.6441 | -3.22*** | -0.4043 | -1.62 | -1.229 | -3.31*** | -0.8928 | -1.71* |
| Denmark ⁽⁵⁾ | -0.0857 | -0.39 | -0.2146 | -0.73 | -0.0148 | -0.04 | 0.0945 | 0.17 |
| Finland ⁽⁵⁾ | 0.2935 | 2.16** | 0.0234 | 0.12 | 0.5803 | 3.11*** | 0.7055 | 2.1** |
| France ⁽⁵⁾ | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | |
| Germany ⁽⁵⁾ | -0.6001 | -3.53*** | -0.4527 | -1.99** | -0.9206 | -3.42*** | -0.4815 | -1.19 |
| Greece ⁽⁵⁾ | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | |
| Ireland ⁽⁵⁾ | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | |
| Italy ⁽⁵⁾ | 0.4727 | 4.05*** | 0.2472 | 1.48 | 0.7488 | 4.58*** | 0.8017 | 2.7*** |
| Luxembourg ⁽⁵⁾ | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | |
| Netherlands ⁽⁵⁾ | -0.5047 | -2.19** | -0.9325 | -2.92*** | 0.0223 | 0.07 | 1.028 | 1.71* |
| Portugal ⁽⁵⁾ | 0.2732 | 1.43 | 0.0634 | 0.24 | 0.5735 | 2.09** | 0.7002 | 1.48 |
| Sweden ⁽⁵⁾ | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | | <i>No observations</i> | |
| United Kingdom ⁽⁵⁾ | -0.5066 | -2.7*** | -0.0163 | -0.07 | -2.4632 | -5.92*** | -2.3945 | -4.07*** |
| Reference categories: (1) Non-cohabiting individuals, (2) No education or primary education, (3) Construction sector, (4) Non-indefinite contract, (5) Spain | | | | | | | | |
| Log likelihood | -7888.06 | | -5046.33 | | -3680.16 | | -879.75 | |

Notes:

(***) 1 % significance level; (**) 5 % significance level; (*) 10 % significance level

Table A2. Entering true and “dependent” self-employment with labour market institutions

| | (1) SELF-EMPLOYED (SE) | | (2) TRUE SELF-EMPLOYED (TSE) | | (3) DEPENDENT SELF- EMPLOYED (DSE) | | (4) (DSE vs. TSE) | |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------|----------------------------------------------|----------------|----------------------------------------------|----------------|-------------------------------------------------|----------------|
| | Prob [SE _t PE _{t-1}] | | Prob [TSE _t PE _{t-1}] | | Prob [DSE _t PE _{t-1}] | | Prob [DSE _t vs. TSE _t] | |
| Number of observations | 157016 | | 156293 | | 156195 | | 1544 | |
| Number of transitions | 1544 | | 821 | | 723 | | 723 vs. 821 | |
| Variables | Coef. | t-stat. | Coef. | t-stat. | Coef. | t-stat. | Coef. | t-stat. |
| Constant | -10.9492 | -16.44*** | -9.5075 | -10.40*** | -17.7465 | -15.24*** | -8.1946 | -5.2*** |
| Demographic characteristics | | | | | | | | |
| Male | 0.5481 | 7.65*** | 0.5386 | 5.75*** | 0.6388 | 5.67*** | 0.1242 | 0.75 |
| Age | 0.0194 | 0.78 | 0.0647 | 1.9* | -0.0144 | -0.38 | -0.0515 | -0.9 |
| Age (squared) | -0.0005 | -1.58 | -0.0011 | -2.59*** | 0.0001 | 0.09 | 0.0008 | 1.12 |
| Cohabiting ⁽¹⁾ | 0.2851 | 3.79*** | 0.4754 | 4.72*** | 0.0187 | 0.16 | -0.4232 | -2.59*** |
| Number of children under 14 | -0.0275 | -0.82 | -0.0647 | -1.46 | 0.0289 | 0.56 | 0.1272 | 1.69* |
| Relative(s) working as self-employed | 0.6284 | 7.7*** | 0.7029 | 6.31*** | 0.5577 | 4.61*** | 0.1557 | 0.89 |
| Education | | | | | | | | |
| Secondary education ⁽²⁾ | -0.0376 | -0.56 | 0.0194 | 0.22 | -0.1118 | -1.08 | -0.1799 | -1.19 |
| University studies ⁽²⁾ | 0.1189 | 1.51 | 0.1494 | 1.43 | 0.0774 | 0.63 | -0.1618 | -0.89 |
| Employment characteristics | | | | | | | | |
| Industrial sector ⁽³⁾ | -0.5643 | -6.51*** | -0.6592 | -5.64*** | -0.4354 | -3.33*** | 0.1698 | 0.89 |
| Financial services ⁽³⁾ | -0.1259 | -1.21 | -0.1469 | -1.07 | -0.0665 | -0.41 | 0.2251 | 0.97 |
| Wholesale, hotels, restaurants & transport ⁽³⁾ | -0.2243 | -2.68*** | -0.2533 | -2.26** | -0.2137 | -1.69* | 0.0136 | 0.07 |
| Other services ⁽³⁾ | -0.9252 | -9.25*** | -0.9826 | -7.33*** | -0.8144 | -5.36*** | 0.1155 | 0.52 |
| Hours of work | 0.0355 | 12.01*** | 0.0311 | 7.6*** | 0.0413 | 9.49*** | 0.0131 | 1.91* |
| Indefinite contract ⁽⁴⁾ | -0.5616 | -7.78*** | -0.6088 | -6.11*** | -0.4803 | -4.60*** | -0.1765 | -1.16 |
| Previous experience | | | | | | | | |
| Observed previous spell(s) as self-employed | 2.6067 | 38.11*** | 1.2391 | 9.53*** | 3.6397 | 40.02*** | 2.0104 | 12.92*** |
| Observed previous spell(s) as unemployed | 0.0641 | 1.06 | 0.2235 | 2.81*** | -0.1184 | -1.28 | -0.3031 | -2.24** |
| Incomes | | | | | | | | |
| Dwelling owner | 0.0331 | 0.53 | -0.0539 | -0.67 | 0.1631 | 1.66* | 0.2091 | 1.51 |
| Annual capital and property incomes (1 lag) | 0.0001 | 3.47*** | 0.0001 | 1.67* | 0.0001 | 2.87*** | 0.0001 | 1.65* |
| Monthly work incomes | 0.0001 | 0.41 | 0.0001 | 1.11 | -0.0001 | -0.25 | -0.0002 | -1.86* |
| Business cycle | | | | | | | | |
| Annual unemployment rate | 0.0017 | 0.21 | -0.0436 | -3.71*** | 0.0729 | 5.78*** | 0.0995 | 5.08*** |
| Labour Market Institutions | | | | | | | | |
| EPL index for regular employment | 0.0375 | 1.15 | -0.0497 | -1.15 | 0.3541 | 5.67*** | 0.3686 | 4.61*** |
| EPL index for temporary employment | 0.1249 | 4.7*** | 0.0905 | 2.39** | 0.2521 | 6.33*** | 0.1387 | 2.33** |
| Social Security Laws index | 5.8199 | 9.23*** | 3.7208 | 4.63*** | 9.7313 | 8.99*** | 6.2162 | 4.1*** |
| Expenditure on ALMP as % of GDP | 0.0014 | 0.02 | -0.3153 | -3.31*** | 0.886 | 5.76*** | 1.0645 | 5.4*** |
| Potential severance payment | -2.39e-06 | -0.74 | -1.87e-05 | -3.20*** | 3.39e-06 | 1.1 | 2.29e-05 | 2.73*** |
| Reference categories: (1) Non-cohabiting individuals, (2) No education or primary education, (3) Construction sector, (4) Non-indefinite contract | | | | | | | | |
| Log likelihood | -7445.59 | | -4798.72 | | -3421.97 | | -827.71 | |

Notes:

(***) 1 % significance level; (**) 5 % significance level; (*) 10 % significance level

Table A3. Marginal effects with country dummies

| | (1) | | | | (2) | | | | (3) | | | | (4) | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|----------------|-------------|----------------------------------------------|----------------------|----------------|-------------|----------------------------------------------|----------------------|----------------|-------------|-------------------------------------------------|----------------------|----------------|-------------|
| | SELF-EMPLOYED (SE) | | | | TRUE SELF-EMPLOYED (TSE) | | | | DEPENDENT SELF-EMPLOYED (DSE) | | | | (DSE vs. TSE) | | | |
| | Prob [SE _t PE _{t-1}] | | | | Prob [TSE _t PE _{t-1}] | | | | Prob [DSE _t PE _{t-1}] | | | | Prob [DSE _t (vs. TSE _t)] | | | |
| Number of observations | 157016 | | | | 156293 | | | | 156195 | | | | 1544 | | | |
| Number of transitions | 1544 | | | | 821 | | | | 723 | | | | 723 vs. 821 | | | |
| Predicted probability (y) | 0.00443468 | | | | 0.0026769 | | | | 0.0011074 | | | | 0.45173113 | | | |
| Variables | dy/dx | (dy/y)/dx-100 | t-stat. | Mean | dy/dx | (dy/y)/dx-100 | t-stat. | Mean | dy/dx | (dy/y)/dx-100 | t-stat. | Mean | dy/dx | (dy/y)/dx-100 | t-stat. | Mean |
| Demographic characteristics | | | | | | | | | | | | | | | | |
| Male | 0.0023 | 51.46% | 8*** | 0.64 | 0.0013 | 50.14% | 3.99*** | 0.64 | 0.0006 | 57.2% | 5.61*** | 0.64 | 0.0261 | 5.77% | 0.63 | 0.8 |
| Age | 0.0001 | 2.26% | 0.9 | 38.63 | 0.0002 | 6.74% | 1.89* | 38.64 | -2.33e-5 | -2.1% | -0.56 | 38.65 | -0.0121 | -2.68% | -0.84 | 36.67 |
| Age (squared) | -2.4e-6 | -0.05% | -1.68* | 1588.8 | -3.25e-6 | -0.12% | -2.48** | 1589.16 | 1.60e-7 | 0.01% | 0.3 | 1589.99 | 0.0002 | 0.05% | 1.15 | 1431.86 |
| Cohabiting ⁽¹⁾ | 0.0012 | 27.85% | 4.24*** | 0.76 | 0.0011 | 41.88% | 3.65*** | 0.76 | 0.0001 | 5.09% | 0.45 | 0.76 | -0.0957 | -21.19% | -2.33** | 0.77 |
| Number of children under 14 | -0.0001 | -2.87% | -0.84 | 0.61 | -0.0002 | -6.34% | -1.37 | 0.61 | 2.99e-5 | 2.7% | 0.53 | 0.61 | 0.0302 | 6.69% | 1.6 | 0.69 |
| Relative(s) working as self-employed | 0.0036 | 81.62% | 5.74*** | 0.07 | 0.0025 | 94.67% | 3.6*** | 0.07 | 0.0007 | 66.84% | 3.43*** | 0.07 | 0.0405 | 8.95% | 0.92 | 0.14 |
| Education | | | | | | | | | | | | | | | | |
| Secondary education ⁽²⁾ | 0.0002 | 3.87% | 0.53 | 0.37 | 0.0004 | 13.8% | 1.34 | 0.37 | -0.0001 | -6.24% | -0.59 | 0.37 | -0.0467 | -10.33% | -1.18 | 0.32 |
| University studies ⁽²⁾ | 0.001 | 22.26% | 2.47** | 0.28 | 0.0006 | 22.77% | 1.78* | 0.28 | 0.0002 | 21.82% | 1.6 | 0.28 | -0.0155 | -3.43% | -0.33 | 0.25 |
| Employment characteristics | | | | | | | | | | | | | | | | |
| Industrial sector ⁽³⁾ | -0.0023 | -52.38% | -7.31*** | 0.27 | -0.0016 | -59.73% | -4.11*** | 0.27 | -0.0005 | -41.56% | -3.7*** | 0.27 | 0.0285 | 6.31% | 0.59 | 0.23 |
| Financial services ⁽³⁾ | -0.0007 | -16.3% | -1.75* | 0.11 | -0.0005 | -18.26% | -1.49 | 0.11 | -0.0001 | -12.97% | -0.88 | 0.11 | 0.0317 | 7.02% | 0.54 | 0.13 |
| Wholesale, hotels, restaurants & transport ⁽³⁾ | -0.001 | -23.3% | -3.14*** | 0.2 | -0.0007 | -25.84% | -2.4** | 0.2 | -0.0003 | -22.79% | -2.06** | 0.2 | 0.0027 | 0.6% | 0.06 | 0.29 |
| Other services ⁽³⁾ | -0.0039 | -87.49% | -10.45*** | 0.34 | -0.0025 | -91.84% | -4.48*** | 0.34 | -0.0009 | -79.16% | -6*** | 0.34 | -0.0004 | -0.08% | -0.01 | 0.15 |
| Hours of work | 0.0002 | 3.72% | 11.74*** | 41.31 | 0.0001 | 3.16% | 4.43*** | 41.28 | 4.86e-5 | 4.39% | 8.65*** | 41.29 | 0.0034 | 0.76% | 2** | 45.12 |
| Indefinite contract ⁽⁴⁾ | -0.0036 | -80.08% | -6.61*** | 0.9 | -0.0025 | -94.05% | -3.8*** | 0.9 | -0.0007 | -61.78% | -3.82*** | 0.9 | -0.0348 | -7.69% | -0.91 | 0.76 |
| Previous experience | | | | | | | | | | | | | | | | |
| Observed previous spell(s) as self-employed | 0.0514 | 1158.15% | 13.51*** | 0.02 | 0.0062 | 233.41% | 3.65*** | 0.02 | 0.0351 | 3172.49% | 10.29*** | 0.02 | 0.4633 | 102.57% | 15.88*** | 0.26 |
| Observed previous spell(s) as unemployed | 0.0004 | 9.08% | 1.43 | 0.3 | 0.0008 | 29.7% | 2.86*** | 0.3 | -0.0001 | -12.72% | -1.42 | 0.3 | -0.0935 | -20.7% | -2.79*** | 0.4 |
| Incomes | | | | | | | | | | | | | | | | |
| Dwelling owner | 4.17e-5 | 0.94% | 0.15 | 0.7 | -0.0002 | -7.86% | -0.91 | 0.7 | 0.0001 | 11.59% | 1.22 | 0.7 | 0.0505 | 11.18% | 1.47 | 0.73 |
| Annual capital and property incomes (1 lag) | 1.17e-7 | 0.003% | 3.5*** | 359.89 | 4.98e-8 | 0.002% | 1.55 | 357.76 | 2.92e-8 | 0.003% | 2.82*** | 359.3 | 9.90e-6 | 0.002% | 1.63 | 634.93 |
| Monthly work incomes | 8.53e-8 | 0.002% | 0.58 | 1234.82 | 9.04e-8 | 0.003% | 0.78 | 1235.1 | 2.26e-8 | 0.002% | 0.4 | 1234.87 | -2.44e-5 | -0.01% | -0.89 | 1201.82 |
| Business cycle | | | | | | | | | | | | | | | | |
| Annual unemployment rate | 0.0001 | 2.08% | 1.26 | 8.71 | -0.0001 | -4.05% | -1.68* | 8.7 | 0.0001 | 8.6% | 3.59*** | 8.71 | 0.0294 | 6.51% | 3.02*** | 9.78 |
| Country | | | | | | | | | | | | | | | | |
| Austria ⁽⁵⁾ | -0.0011 | -24.02% | -1.22 | 0.07 | -0.001 | -37.75% | -1.64 | 0.07 | -0.0003 | -24.02% | -0.77 | 0.07 | 0.0804 | 17.79% | 0.57 | 0.04 |
| Belgium ⁽⁵⁾ | -0.0022 | -48.88% | -4.15*** | 0.07 | -0.0009 | -35.38% | -1.91** | 0.07 | -0.0008 | -75.18% | -5.23*** | 0.07 | -0.1719 | -38.06% | -1.72* | 0.03 |
| Denmark ⁽⁵⁾ | -0.0003 | -7.15% | -0.35 | 0.07 | -0.0006 | -21.2% | -0.88 | 0.07 | 3.44e-5 | 3.11% | 0.09 | 0.07 | 0.0498 | 11.02% | 0.39 | 0.05 |
| Finland ⁽⁵⁾ | 0.0015 | 33.58% | 1.9* | 0.06 | 2.45e-5 | 0.92% | 0.04 | 0.06 | 0.0009 | 77.12% | 2.44** | 0.06 | 0.1768 | 39.13% | 2.52** | 0.08 |
| France ⁽⁵⁾ | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | |
| Germany ⁽⁵⁾ | -0.0022 | -49.7% | -4.25*** | 0.16 | -0.0011 | -40.89% | -2.27** | 0.16 | -0.0008 | -68.86% | -4.39*** | 0.16 | -0.0935 | -20.7% | -1.04 | 0.09 |
| Greece ⁽⁵⁾ | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | |
| Ireland ⁽⁵⁾ | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | |
| Italy ⁽⁵⁾ | 0.003 | 68.12% | 3.63*** | 0.1 | 0.0008 | 29.3% | 1.3 | 0.1 | 0.0014 | 124.02% | 3.65*** | 0.1 | 0.1957 | 43.33% | 3.22*** | 0.16 |
| Luxembourg ⁽⁵⁾ | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | |
| Netherlands ⁽⁵⁾ | -0.0018 | -40.53% | -2.55** | 0.1 | -0.0018 | -67.2% | -3.38*** | 0.1 | 0.0001 | 5.73% | 0.16 | 0.1 | 0.2567 | 56.82% | 2.21** | 0.05 |
| Portugal ⁽⁵⁾ | 0.0014 | 32.2% | 1.35 | 0.12 | 0.0002 | 6.53% | 0.23 | 0.12 | 0.0008 | 73.25% | 1.71* | 0.12 | 0.1789 | 39.59% | 1.71* | 0.19 |
| Sweden ⁽⁵⁾ | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | | <i>No observations</i> | | | |
| United Kingdom ⁽⁵⁾ | -0.0019 | -42.08% | -3.22*** | 0.12 | -0.0001 | -3.32% | -0.14 | 0.12 | -0.0013 | -121.75% | -10.63*** | 0.12 | -0.4041 | -89.45% | -7.99*** | 0.09 |
| Reference categories: (1) Non-cohabiting individuals, (2) No education or primary education, (3) Construction sector, (4) Non-indefinite contract, (5) Spain | | | | | | | | | | | | | | | | |
| Log likelihood | -7410.82 | | | | -4793.82 | | | | -3395.69 | | | | -815.51 | | | |

Notes: (***) 1 % significance level; (**) 5 % significance level; (*) 10 % significance level

Table A4. Marginal effects with labour market institutions

| | (1) SELF-EMPLOYED(SE) | | | | (2) TRUE SELF-EMPLOYED (TSE) | | | | (3) DEPENDENT SELF-EMPLOYED (DSE) | | | | (4) (DSE vs. TSE)) | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------|----------------|-------------|----------------------------------------------|----------------------|----------------|-------------|----------------------------------------------|----------------------|----------------|-------------|-------------------------------------------------|----------------------|----------------|-------------|
| | Prob [SE _i PE _{t-1}] | | | | Prob [TSE _i PE _{t-1}] | | | | Prob [DSE _i PE _{t-1}] | | | | Prob [DSE _i (vs. TSE _i)] | | | |
| Number of observations | 157016 | | | | 156293 | | | | 156195 | | | | 1544 | | | |
| Number of transitions | 1544 | | | | 821 | | | | 723 | | | | 723 vs. 821 | | | |
| Predicted probability (y) | 0.00514791 | | | | 0.00280415 | | | | 0.00117608 | | | | 0.45760197 | | | |
| Variables | dy/dx | (dy/y)/dx-100 | t-stat. | Mean | dy/dx | (dy/y)/dx-100 | t-stat. | Mean | dy/dx | (dy/y)/dx-100 | t-stat. | Mean | dy/dx | (dy/y)/dx-100 | t-stat. | Mean |
| Demographic characteristics | | | | | | | | | | | | | | | | |
| Male | 0.0026 | 51.24% | 8.16*** | 0.64 | 0.0014 | 50.53% | 3.99*** | 0.64 | 0.0007 | 59.50% | 5.89*** | 0.64 | 0.0307 | 6.71% | 0.75 | 0.80 |
| Age | 0.0001 | 1.93% | 0.78 | 38.63 | 0.0002 | 6.45% | 1.83* | 38.64 | -1.69e-5 | -1.44% | -0.38 | 38.65 | -0.0128 | -2.79% | -0.9 | 36.67 |
| Age (squared) | -2.58e-6 | -0.05% | -1.58 | 1588.8 | -3.21e-6 | -0.11% | -2.38** | 1589.16 | 4.87e-8 | 0.00% | 0.09 | 1589.99 | 0.0002 | 0.04% | 1.12 | 1431.86 |
| Cohabiting ⁽¹⁾ | 0.0014 | 26.41% | 4.07*** | 0.76 | 0.0012 | 42.22% | 3.69*** | 0.76 | 2.19e-5 | 1.86% | 0.16 | 0.76 | -0.1053 | -23.02% | -2.6*** | 0.77 |
| Number of children under 14 | -0.0001 | -2.74% | -0.82 | 0.61 | -0.0002 | -6.46% | -1.41 | 0.61 | 3.4e-5 | 2.89% | 0.56 | 0.61 | 0.0316 | 6.90% | 1.69* | 0.69 |
| Relative(s) working as self-employed | 0.0043 | 83.04% | 5.95*** | 0.07 | 0.0027 | 96.68% | 3.65*** | 0.07 | 0.0008 | 71.76% | 3.6*** | 0.07 | 0.0388 | 8.47% | 0.89 | 0.14 |
| Education | | | | | | | | | | | | | | | | |
| Secondary education ⁽²⁾ | -0.0002 | -3.72% | -0.57 | 0.37 | 5.43e-5 | 1.94% | 0.22 | 0.37 | -0.0001 | -11.01% | -1.09 | 0.37 | -0.0445 | -9.72% | -1.19 | 0.32 |
| University studies ⁽²⁾ | 0.0006 | 12.15% | 1.47 | 0.28 | 0.0004 | 15.41% | 1.33 | 0.28 | 9.26e-5 | 7.87% | 0.62 | 0.28 | -0.0399 | -8.74% | -0.89 | 0.25 |
| Employment characteristics | | | | | | | | | | | | | | | | |
| Industrial sector ⁽³⁾ | -0.0026 | -50.09% | -7.13*** | 0.27 | -0.0016 | -57.66% | -4.06*** | 0.27 | -0.0005 | -39.72% | -3.54*** | 0.27 | 0.0423 | 9.24% | 0.89 | 0.23 |
| Financial services ⁽³⁾ | -0.0006 | -11.94% | -1.27 | 0.11 | -0.0004 | -13.84% | -1.11 | 0.11 | -7.62e-5 | -6.48% | -0.42 | 0.11 | 0.0561 | 12.26% | 0.97 | 0.13 |
| Wholesale, hotels, restaurants & transport ⁽³⁾ | -0.0011 | -20.93% | -2.85*** | 0.2 | -0.0007 | -23.50% | -2.21** | 0.20 | -0.0002 | -20.08% | -1.79* | 0.20 | 0.0034 | 0.74% | 0.07 | 0.29 |
| Other services ⁽³⁾ | -0.0042 | -81.98% | -10.09*** | 0.34 | -0.0024 | -86.90% | -4.41*** | 0.34 | -0.0009 | -73.22% | -5.62*** | 0.34 | 0.0287 | 6.28% | 0.52 | 0.15 |
| Hours of work | 0.0002 | 3.53% | 11.64*** | 41.31 | 8.69e-5 | 3.10% | 4.41*** | 41.28 | 4.86e-5 | 4.13% | 8.32*** | 41.29 | 0.0032 | 0.71% | 1.91** | 45.12 |
| Indefinite contract ⁽⁴⁾ | -0.0036 | -70.63% | -6.21*** | 0.89 | -0.0022 | -78.53% | -3.6*** | 0.90 | -0.0007 | -58.68% | -3.72*** | 0.90 | -0.0439 | -9.60% | -1.16 | 0.76 |
| Previous experience | | | | | | | | | | | | | | | | |
| Observed previous spell(s) as self-employed | 0.0576 | 1119.76% | 14.54*** | 0.02 | 0.0067 | 237.85% | 3.7*** | 0.02 | 0.0391 | 3323.92% | 11.07*** | 0.02 | 0.4558 | 99.62% | 16.21** | 0.26 |
| Observed previous spell(s) as unemployed | 0.0003 | 6.46% | 1.05 | 0.29 | 0.0006 | 23.37% | 2.43** | 0.30 | -0.0001 | -11.55% | -1.3 | 0.30 | -0.0749 | -16.36% | -2.25** | 0.40 |
| Incomes | | | | | | | | | | | | | | | | |
| Dwelling owner | 0.0002 | 3.27% | 0.54 | 0.7 | -0.0001 | -5.44% | -0.66 | 0.70 | 0.0002 | 15.78% | 1.7* | 0.70 | 0.0516 | 11.28% | 1.53 | 0.73 |
| Annual capital and property incomes (1 lag) | 1.32e-7 | 0.003% | 3.46*** | 359.89 | 5.33e-8 | 0.00% | 1.62 | 357.76 | 3.10e-8 | 0.00% | 2.82*** | 359.30 | 9.94e-6 | 0.00% | 1.65* | 634.93 |
| Monthly work incomes | 7.59e-8 | 0.001% | 0.41 | 1234.82 | 1.28e-7 | 0.00% | 1.1 | 1235.10 | -2.26e-8 | 0.00% | -0.25 | 1234.87 | -5.43e-5 | -0.01% | -1.86* | 1201.82 |
| Business cycle | | | | | | | | | | | | | | | | |
| Annual unemployment rate | 8.65e-6 | 0.17% | 0.21 | 8.71 | -0.0001 | -4.35% | -3.07*** | 8.70 | 8.57e-5 | 7.29% | 5.72*** | 8.71 | 0.0247 | 5.40% | 5.09*** | 9.78 |
| Labour Market Institutions | | | | | | | | | | | | | | | | |
| EPL index for regular employment | 0.0002 | 3.73% | 1.16 | 2.49 | -0.0001 | -4.96% | -1.13 | 2.49 | 0.0004 | 35.36% | 6*** | 2.49 | 0.0915 | 19.99% | 4.63*** | 2.62 |
| EPL index for temporary employment | 0.0006 | 12.42% | 4.71*** | 2.56 | 0.0002 | 9.03% | 2.15** | 2.56 | 0.0003 | 25.19% | 6.39*** | 2.56 | 0.0344 | 7.52% | 2.33** | 2.84 |
| Social Security Laws index | 0.0298 | 579.00% | 9.37*** | 0.71 | 0.0104 | 371.04% | 3.48*** | 0.71 | 0.0114 | 971.98% | 8.97*** | 0.71 | 1.5528 | 339.33% | 4.1*** | 0.73 |
| Expenditure on ALMP as % of GDP | 7.02e-6 | 0.14% | 0.02 | 1.06 | -0.0009 | -31.44% | -2.82*** | 1.06 | 0.001 | 88.50% | 6*** | 1.06 | 0.2642 | 57.74% | 5.43*** | 0.98 |
| Potential severance payment | -1.22e-8 | 0.000% | -0.74 | 6737.99 | -5.22e-8 | 0.00% | -2.71*** | 6738.88 | 3.98e-9 | 0.00% | 1.09 | 6752.69 | 5.67e-6 | 0.00% | 2.73*** | 5161.13 |
| Reference categories: (1) Non-cohabiting individuals, (2) No education or primary education, (3) Construction sector, (4) Non-indefinite contract | | | | | | | | | | | | | | | | |
| Log likelihood | -7445.59 | | | | -4798.72 | | | | -3421.97 | | | | -827.71 | | | |

Notes: (***) 1 % significance level; (**) 5 % significance level; (*) 10 % significance level

Appendix B: Data Description

Variable definitions are reported below.

Explained variables

Transitions from paid-employment to “dependent” self-employment:

Dependent variable equals 1 for individuals who are full-time waged workers in period $t-1$ and become “dependent” self-employed in period t . The variable equals 0 for individuals who are full-time waged workers in periods $t-1$ and t .

Transitions from paid-employment to self-employment:

Dependent variable equals 1 for individuals who are full-time waged workers in period $t-1$ and become self-employed in period t . The variable equals 0 for individuals who are full-time waged workers in periods $t-1$ and t .

“Dependent” self-employment vs. Self-employment

Dependent variable equals 1 for individuals who are full-time waged workers in period $t-1$ and become “dependent” self-employed in period t . The variable equals 0 for individuals who are full-time waged workers in period $t-1$ and become self-employed in period t .

Explanatory variables

Demographic characteristics:

| | |
|--------------------------------------|--------------------------------------------------------------------|
| Male | Dummy equals 1 for males. |
| Age | Age reported by the individual, ranging from 21 to 59. |
| Cohabiting | Dummy equals 1 for cohabiting individuals and 0 otherwise. |
| Number of children under 14 | Number of children aged under than 14 living within the household. |
| Relative(s) working as self-employed | Dummy equals to 1 if there are any in the household. |

Education:

| | |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| No education or primary education | Dummy equals 1 for illiterate, no schooling individuals, or individuals with primary schooling as highest education level achieved, and 0 otherwise. |
| Secondary education | Dummy equals 1 for individuals with secondary schooling as highest education level achieved and 0 otherwise. |
| University studies | Dummy equals 1 for individuals with university studies and 0 otherwise. |

Employment characteristics:

| | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction sector | Dummy equals 1 for individuals whose codes of main activity of the local unit of the business is F (construction), by the “Nomenclature of Economic Activities” (NACE-93). |
| Industrial sector | Dummy equals 1 for individuals whose codes of main activity of the local unit of the business are C (mining and quarrying), D (manufactures) and E (electricity, gas and water supply), by the “Nomenclature of Economic Activities” (NACE-93). |
| Wholesale, hotels, restaurants & transport | Dummy equals 1 for individuals whose codes of main activity of the local unit of the business are G (wholesale and retail trade; repair of motor vehicles, motorcycles and personal/household goods), H (hotels and restaurants) and I (transport, storage and communication), by the “Nomenclature of Economic Activities” (NACE-93). |

| | |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Financial services | Dummy equals 1 for individuals whose codes of main activity of the local unit of the business are J (Financial intermediation) and K (real estate, renting and business activities), by the “Nomenclature of Economic Activities” (NACE-93). |
| Other services | Dummy equals 1 for individuals whose codes of main activity of the local unit of the business are L (public administration and defense; compulsory social security), M (education), N (health and social work) and O-Q (other community, social and personal service activities; private households with employed persons; extra-territorial organizations and bodies), by the “Nomenclature of Economic Activities” (NACE-93). |
| Hours of work | Hours of work per week. |
| Indefinite contract | Dummy equals 1 for full-time waged-workers with indefinite contract and 0 otherwise. |
| Non-indefinite contract | Dummy equals 1 for full-time waged-workers with non-indefinite contract and 0 otherwise. |
| Observed previous experience: | |
| Previous spell(s) as employer | Dummy equals 1 for individuals with observed previous spell(s) as employer. |
| Previous spell(s) as own-account worker | Dummy equals 1 for individuals with observed previous spell(s) as own-account worker. |
| Previous spell(s) as unemployed | Dummy equals 1 for individuals with observed previous spell(s) as unemployed. |
| Previous spell(s) as inactive | Dummy equals 1 for individuals with observed previous spell(s) as inactive. |
| Incomes: | |
| Dwelling owner | Dummy equals 1 for households owning the dwelling in period $t-1$, and 0 otherwise. |
| Capital and property incomes (1 lag) | Capital and property incomes, and private transfers received during period $t-2$, converted to average euros of 1996, being corrected by Purchasing Power Parity (across countries) and Harmonised Consumer Price Index (across time). |
| Monthly work incomes | Work incomes earned during the previous month to the interview, converted to average euros of 1996, being corrected by Purchasing Power Parity (across countries) and Harmonised Consumer Price Index (across time). |
| Business cycle: | |
| Annual unemployment rate | Standardized annual unemployment rate (source: OCDE) |
| Country dummies: | |
| | <i>Dummies</i> equal 1 for individuals living in the named country, and 0 otherwise. The following countries are included: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom. (Spain is reference category). |
| Labour market institutions²³: | |
| EPL | Overall employment protection legislation index (source: OECD). |
| EPL regular employment | Employment protection legislation index for regular employment (source: OECD). |

²³ See a detailed description of these labour market institutions variables below.

| | |
|-------------------------------|-------------------------------------------------------------------------------------|
| EPL temporary employment | Employment protection legislation index for temporary employment (source: OECD). |
| Social Security Laws Index | Measure of Social Security benefits (source: Botero et al. (2004)). |
| Active Labour Market Policies | Expenditure on Active Labour Market Policies as a percentage of GDP (source: OECD). |
| Severance payment | Authors' calculation based on OECD Employment Outlook (1999), chapter 2. |

Description of Labour Market Institutions Variables

Employment Protection Legislation

The measure of employment protection developed by the OECD refers to the protection of regular employment and the regulation of temporary work and is intended to measure the strictness of EPL.

For each country, employment protection legislation is described along 18 basic items, which can be gathered in three main areas: (i) employment protection of regular workers against individual dismissal; (ii) specific requirements for collective dismissals; and (iii) regulation of temporary forms of employment. Starting from these 18 basic pieces of information, a four-step procedure has been developed for constructing cardinal summary indicators of EPL strictness that allow meaningful comparisons to be made, both across countries and between different years²⁴.

These basic employment protection legislation indicators are based on an exhaustive revision of the current regulation and the contractual and dismissal laws applying to both regular and temporary employees. All of them are shown in table B.1 below.

At the last step of the procedure, when forming for each country an overall summary indicator from the three subcomponents for strictness of regulation for regular contracts, temporary contracts and collective dismissals, the summary measure for collective dismissals was allocated just 40% of the weight assigned to regular and temporary contracts. The rationale for this is that the collective dismissals indicator only reflects *additional* employment protection that was triggered by the collective nature of a dismissal. In most countries, these additional requirements are quite modest.

Moreover, summary measures for collective dismissals are only available since the late 1990s. An alternative overall index, so-called version 1, has been thus calculated as an unweighted average of the summary measures for regular and temporary contracts only. While more restrictive than the previous one (so-called version 2), this alternative measure of the overall EPL strictness allows comparisons over a longer period of time (from the late 1980s to 2003 compared with the late 1990s to 2003).

In our analysis, it is used version 1 of overall index, as well as regular employment and temporary employment subindexes.

| Level 1 Scale 0-6 | | | Level 2 Scale 0-6 | Level 3 Scale 0-6 | Level 4 Scale 0-6 |
|----------------------|-------------------------|----------------|----------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|
| 1. | Notification procedures | (1/2) | Procedural inconveniences (1/3) | Regular contracts (Version 2: 5/12) (Version 1: 1/2) | Employment Protection Legislation overall summary indicator |
| 2. | Delay to start a notice | (1/2) | | | |
| 3. | Notice period after | 9 months (1/7) | Notice and severance pay for no-fault individual dismissals (1/3) | | |
| | | 4 years (1/7) | | | |
| 4. | Severance pay after | 20 years (1/7) | | | |
| | | 9 months (1/7) | | | |
| | | 4 years (1/7) | | | |
| | | 20 years (1/7) | | | |

²⁴ For a detailed description of this procedure, see also OECD (1999), *Employment Outlook*, Chapter 2, Annex 2.B.

| | | | |
|------------------------------------------------|-------|--------------------------------------------------------------|--------------------------------------------------------------|
| 5. Definition of unfair dismissal | (1/4) | Difficulty of dismissal (1/3) | |
| 6. Trial period | (1/4) | | |
| 7. Compensation | (1/4) | | |
| 8. Reinstatement | (1/4) | | |
| 9. Valid cases for use of fixed-term contracts | (1/2) | Fixed-term contracts (1/2) | Temporary contracts (Version 2: 5/12) (Version 1: 1/2) |
| 10. Maximum number of successive contracts | (1/4) | | |
| 11. Maximum cumulated duration | (1/4) | Temporary Work Agency Employment (1/2) | |
| 12. Types of work for which is legal | (1/2) | | |
| 13. Restrictions on number of renewal | (1/4) | | |
| 14. Maximum cumulated duration | (1/4) | Collective dismissals (Version 2: 2/12) (Version 1: 0) | |
| 15. Definition of collective dismissal | (1/4) | | |
| 16. Additional notification requirements | (1/4) | | |
| 17. Additional delays involved | (1/4) | | |
| 18. Other special costs to employers | (1/4) | | |

Table B.1: EPL summary indicators and weighting scheme.

Source: OECD (2004) Employment Outlook

Social Security Laws Index

Higher values of this variable by Botero et al. (2004) indicate higher worker protection. It measures social security benefits as the average of old age, disability and death benefits; sickness and health benefits; and unemployment benefits.

1. Old age, disability and death benefits measures the level of old age, disability and death benefits as the average of four normalized variables:
 - a. The difference between retirement age and life expectancy at birth;
 - b. The number of months of contributions or employment required for normal retirement by law;
 - c. The percentage of the worker's monthly salary deducted by law to cover old age, disability, and death benefits; and
 - d. The percentage of the net pre-retirement salary covered by the net old-age-cash-benefit pension.
2. Sickness and health benefits measures the level of sickness and health benefit as the average of four normalized variables:
 - a. The number of months of contributions or employment required to qualify for sickness benefits by law;
 - b. The percentage of the worker's monthly salary deducted by law to cover sickness and health benefits;
 - c. The waiting period for sickness benefits; and
 - d. The percentage of the net salary covered by the net sickness cash benefit for a two-month sickness spell.
3. Unemployment benefits measures the level of unemployment benefits as the average of four normalized variables:
 - a. The number of months of contributions or employment required to qualify for unemployment benefits by law;
 - b. The percentage of the worker's monthly salary deducted by law to cover unemployment benefits;
 - c. The waiting period for unemployment benefits; and
 - d. The percentage of the net salary covered by the net unemployment benefits in case of a one-year unemployment spell.

Active Labour Market Policies

This variable measures expenditure on Active Labour Market Policies as a percentage of GDP. The “active” programmes are those designed to help the unemployed back into work, as opposed to “passive” measures concerned with the payment of unemployment benefits and early retirement payments.

Public expenditure on labour market programmes is defined to include all public outlays, or outlay equivalents for relevant purposes, both public sector consumption and transfers to individuals and enterprises. No distinction is made between central, local government and quasi-public sources of finance, such as social insurance funded by compulsory contributions. The emphasis is on labour market programmes, as opposed to general employment or macroeconomic policies, and so the database includes only expenditure targeted on particular labour market groups. For example, reductions of taxes and social security contributions are included only when they are made in respect of particular labour market groups. Payroll-tax reductions for lower-paid workers are considered general employment policies and are not included.

It includes the following categories:

1. **Public Employment Services and administration** includes the following services: placement, counselling and vocational guidance; job-search courses; assistance with displacement costs; administering unemployment benefits; and all other administration costs of labour market agencies (at central and local level) including running labour market programmes.
2. **Labour market training** includes both course costs and subsistence allowances and is divided into two sub-categories: training for unemployed adults and those at risk; and training for employed adults. Special training programmes for youth and disabled are excluded (see below).
3. **Youth measures** include only special programmes for youth in transition from school to work. They do not cover young people’s participation in programmes which are open to adults as well. The two sub-categories are: measures for unemployed and disadvantaged youth, targeted principally on those who do not follow regular upper-secondary education or vocational education and are unsuccessful in finding jobs; and support of apprenticeship and related forms of general youth training, covering a variety of forms of training and work practice in enterprises.
4. **Subsidised employment** covers targeted measures to promote or provide employment for the unemployed and other priority groups (but not youth and the disabled). It is divided into: wage subsidies paid to private sector firms to encourage the recruitment of targeted workers or continued employment of those whose jobs are at risk (not including general employment subsidies); support of unemployed persons starting enterprises; and direct job creation (in public or non-profit organisations) to benefit the unemployed.
5. **Measures for the disabled** include only special programmes for the disabled and do not cover the total policy effort in support of the disabled. The two sub-categories are: vocational rehabilitation; and work for the disabled.

Severance payment

It is an individual measure of the potential severance payment that the worker would receive in case of dismissal.

Following the OECD (1999) Employment Outlook, chapter 2, this individual measure of severance payment is calculated using severance pay for individual dismissal of a regular employee with tenure beyond any trial period dismissed on personal grounds or economic redundancy but without fault. Information it is base mainly on legal regulation, but also, where relevant, on averages found in collective agreements or individual employment contracts.

To construct it we take into account individual employment duration, salary, type of contract and when it is necessary, age.

Table A. Number of observations within the labour market across the European Union

| | Total | No transitions | Transitions to SE | Transitions to TSE | Transitions to DSE |
|-----------------------|------------------------|------------------------|--------------------------|---------------------------|---------------------------|
| Austria | 11261 | 11193 | 68 | 51 | 17 |
| Belgium | 10356 | 10307 | 49 | 38 | 11 |
| Denmark | 10704 | 10634 | 70 | 46 | 24 |
| Finland | 8970 | 8851 | 119 | 44 | 75 |
| France | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> |
| Germany | 24868 | 24734 | 134 | 97 | 37 |
| Greece | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> |
| Ireland | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> |
| Italy | 16416 | 16163 | 253 | 99 | 154 |
| Luxembourg | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> |
| Netherlands | 16038 | 15960 | 78 | 41 | 37 |
| Portugal | 19589 | 19298 | 291 | 150 | 141 |
| Spain | 20149 | 19802 | 347 | 129 | 218 |
| Sweden | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> | <i>No observations</i> |
| United Kingdom | 18665 | 18530 | 135 | 126 | 9 |
| Total | 157016 | 155472 | 1544 | 821 | 723 |

Table B1. Descriptive statistics of the transitions from employment to self-employment

| | All observations | Non switching observations | Switching to TSE observations | Switching to DSE observations |
|-----------------------------------------------------------------|------------------------|----------------------------|-------------------------------|-------------------------------|
| Number of observations | 157016 | 155472 | 821 | 723 |
| Demographic characteristics | | | | |
| Females | 36.3 % | 36.5 % | 21.9 % | 17.3 % |
| Average age | 38.6 years | 38.6 years | 35.8 years | 37.7 years |
| Age 21-30 years | 24.7 % | 24.7 % | 34 % | 28.6 % |
| Age 31-40 years | 32.6 % | 32.5 % | 36.4 % | 33.8 % |
| Age 41-50 years | 28.6 % | 28.7 % | 21.9 % | 24.3 % |
| Age 51-59 years | 14.1 % | 14.1 % | 7.7 % | 13.3 % |
| No education / Very basic education | 35.4 % | 35.3 % | 38.1 % | 47.9 % |
| Primary schooling / Secondary schooling | 36.9 % | 36.9 % | 34.8 % | 29.3 % |
| University studies | 27.7 % | 27.7 % | 27.1 % | 22.8 % |
| Cohabiting | 76.5 % | 76.5 % | 78.4 % | 75.4 % |
| Average number of children under 14 | 0.61 children | 0.61 children | 0.68 children | 0.7 children |
| Relative(s) working as self-employed worker(s) | 6.8 % | 6.8 % | 13.3 % | 15.1 % |
| Employment characteristics | | | | |
| Construction sector | 8 % | 7.9 % | 18.4 % | 20.1 % |
| Industrial sector | 27.3 % | 27.3 % | 22.8 % | 23.1 % |
| Financial services | 10.8 % | 10.7 % | 14.1 % | 12 % |
| Wholesale, hotels, restaurants & transport | 20.3 % | 20.2 % | 28.4 % | 30.3 % |
| Other services | 33.6 % | 33.9 % | 16.3 % | 14.5 % |
| Indefinite contract | 89.9 % | 90.1 % | 78.1 % | 72.9 % |
| Average hours of work per week | 41.3 hours | 41.3 hours | 44.5 hours | 45.8 hours |
| Previous experience | | | | |
| Previous spell(s) as self-employed worker | 1.9 % | 1.7 % | 9.5 % | 45.6 % |
| Previous spell(s) as unemployed | 29.6 % | 29.5 % | 42 % | 37.3 % |
| Incomes | | | | |
| Dwelling owner | 69.9 % | 70 % | 68.9 % | 77.2 % |
| Receiving capital and property incomes | 42.3 % | 42.3 % | 42.4 % | 40.1 % |
| Average annual capital and property incomes | €359 | €357 | €471 | €820 |
| Average annual capital and property incomes (those who receive) | €850 | €843 | €1,112 | €2,045 |
| Average monthly work income | €1,234 | €1,235 | €1,225 | €1,174 |
| Country | | | | |
| Austria | 7.2 % | 7.2 % | 6.2 % | 2.4 % |
| Belgium | 6.6 % | 6.6 % | 4.6 % | 1.5 % |
| Denmark | 6.8 % | 6.8 % | 5.6 % | 3.3 % |
| Finland | 5.7 % | 5.7 % | 5.4 % | 10.5 % |
| France | <i>No observations</i> | | | |
| Germany | 15.8 % | 15.9 % | 11.8 % | 5.1 % |
| Greece | <i>No observations</i> | | | |
| Ireland | <i>No observations</i> | | | |
| Italy | 10.5 % | 10.4 % | 12.1 % | 21.3 % |
| Luxembourg | <i>No observations</i> | | | |
| Netherlands | 10.2 % | 10.3 % | 5 % | 5.1 % |
| Portugal | 12.5 % | 12.4 % | 18.3 % | 19.5 % |
| Spain | 12.8 % | 12.8 % | 15.7 % | 30.1 % |
| Sweden | <i>No observations</i> | | | |
| United Kingdom | 11.9 % | 11.9 % | 15.3 % | 1.2 % |
| Labour market institutions | | | | |
| EPL index for regular employment | 2.5 | 2.5 | 2.5 | 2.7 |
| EPL index for temporary employment | 2.6 | 2.6 | 2.5 | 3.2 |
| Social Security Laws index | 0.7 | 0.7 | 0.7 | 0.7 |
| Expenditure on ALMP as percentage of GDP | 1.1 | 1.1 | 0.9 | 1 |
| Potential severance payment | €6,737 | €6,753 | €3,941 | €6545 |