



# Self-employment, educational attainment and employment protection legislation<sup>☆</sup>

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## HIGHLIGHTS

- We use a theoretical model of self-employment and test its implications empirically.
- Our contribution is to allow for an interaction with educational attainment.
- Employment protection reduces self-employment rather for highly educated workers.
- Inclusion of interaction necessary to assess the effect of employment protection.

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## ABSTRACT

We analyse how educational attainment and employment protection influence an individual's decision to become self-employed. By altering expected income from dependent employment, employment protection is likely to affect an individual's choice of occupation, although such a link has not been established in the literature so far. We argue that an interaction between an individual's educational attainment and the institution of employment protection exists when it comes to the decision regarding whether to become self-employed. Based on survey data from OECD countries, we find evidence for a negative interaction, and conclude that only after taking this interaction into account can the effect of employment protection and educational attainment on self-employment rates be assessed.

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## 1. Introduction

In a large number of countries, self-employment has become an increasingly important policy instrument for promoting employment (see, for example, the strategy *Europe 2020* announced by the European Commission, 2010a; Blanchflower, 2004). Accordingly, various measures for promoting self-employment can be observed, such as the programme of “Self-Employment Assistance” in the US<sup>1</sup> or the

start-up grant (“Gründungszuschuss”) funded by the German Federal Agency of Labour<sup>2</sup> to encourage transitions from unemployment into self-employment.<sup>3</sup> Moreover, the economic literature on self-employment that has grown steadily over the last few decades has particularly flourished in recent years.<sup>4</sup> On the one hand, a large number of studies have modelled or estimated microeconomic factors influencing occupational choice, i.e., an individual's choice with regard to self-employment, such as age, gender, marital status, and educational attainment (see Parker, 2009, chapter 4 and the references cited therein). On the other hand, the effects of national institutions, particularly labour market institutions, have been scrutinised with respect to their influence on self-employment rates across countries (see Parker, 2009, chapter 17, or Ardagna and Lusardi, 2010).

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<sup>1</sup> See the homepage of the United States Department of Labor, <http://www.dol.gov/>.

<sup>2</sup> See <http://www.arbeitsagentur.de>.

<sup>3</sup> A number of current policy measures for promoting self-employment in European Union countries are briefly summarised in the report by the European Commission (2010b). Shutt and Sutherland (2003) discuss policy measures proposed to encourage self-employment in the UK.

<sup>4</sup> Parker's (2009) book on entrepreneurship constitutes a very comprehensive survey.

Employment protection legislation is, among other examples, a natural candidate for this latter type of analysis. Economic wisdom suggests that these regulations, while not necessarily affecting unemployment rates in a significant manner, should result in reduced labour market flexibility. This is reflected in less job creation and longer expected unemployment spells, but more secure jobs for those already employed (see, among many others, Bentolila and Bertola, 1990; Bertola, 1999; Mortensen and Pissarides, 1999). With self-employment constituting an alternative to unemployment (see, for example, von Greiff, 2009), reduced exit rates from unemployment might therefore increase the share of self-employed individuals in an economy. At the same time, in the presence of stringent dismissal regulations, firms might try to circumvent these rules by outsourcing tasks to people who are (maybe only formally) self-employed (see, e.g., Müller and Arum, 2004). In contrast, if self-employed individuals become employers themselves, employment protection might also negatively affect their expected income by limiting discretion regarding employment adjustments. Correlations between the self-employment rates and measures of the stringency of employment protection for different countries presented in the OECD Employment Outlook (OECD, 1999) are suggestive of a positive link between the two variables. However, more rigorous empirical investigations based on cross-country analyses mostly reject the validity of a positive relationship between self-employment rates and the stringency of employment protection legislation (Robson, 2003; Torrini, 2005; Kannianen and Vesala, 2005).

These findings constitute the starting point for our investigation. We argue that occupational choice is affected by the income difference between available employment opportunities. Both expected income from self-employment and expected income earned through dependent employment differ with respect to the level of education an individual has attained. In particular, the effect of employment protection on the difference in income levels is strongly affected by an individual's level of educational attainment. As a consequence, an interaction between individual educational attainment and the institution of employment protection should be taken into account when analysing the occupational choice decision. Furthermore, this may help to shed more light on the relationship between employment protection and occupational choice per se.

With regard to the relationship between educational attainment and expected income, van Praag et al. (2009), among others, find that returns to education may differ for workers and entrepreneurs.<sup>5</sup> For OECD countries, Blanchflower (2000) reports a U-shaped relationship between education and the probability of being self-employed, with the least educated individuals showing the highest likelihood. This has also been found in a recent paper by Poschke (2008), whereas Kim (2007), for instance, finds a positive relationship between educational attainment and the probability of choosing self-employment. In addition, Thomas (2009) reports a negative association between the likelihood that young labour market entrants aspire to become self-employed and academic success. With respect to employment protection, low-skilled individuals might be more prone than highly skilled workers to lose in terms of expected income (OECD, 2004; Burda, 2004). This may especially be the case if productivity investments are complementary to skill and employment protection increases firm-specific investment due to a longer expected job tenure (Belot et al., 2007; Wasmer, 2006). In a different setting, such an interaction between human capital, investment incentives and employment protection legislation is emphasised by Autor (2003) in his investigation of temporary help agencies in the US. Taken together, these findings might indicate that there is an interdependence between educational attainment and the institution of employment protection when analysing an individual's occupational choice, and it is this which we investigate in this paper.<sup>6</sup>

In the first part of the paper, we develop a theoretical model that outlines the underlying economic mechanisms operating in a framework of occupational choice. A more pronounced negative effect of employment protection on the probability of finding a job for less educated workers and higher returns from increased investment for highly educated workers indicate that employment protection may have a diverging effect on the respective incomes of less educated and highly educated workers in the labour market. Consequently, employment protection is less likely to promote self-employment for high levels of educational attainment. In the second part of the paper, we use data from the European Values Study and the World Values Survey combined with macro data from the OECD Labour Force survey and the IMF World Economic Outlook. Using linear probability and logit models, and accounting for the clustering of individuals in countries, we confirm the main hypothesis derived from the theoretical model. Indeed, the effect of educational attainment on the probability of being self-employed varies for different levels of employment protection legislation. Analysing this interaction effect, we show that stricter employment protection significantly reduces the probability of choosing self-employment for highly educated individuals in relation to the change in the probability for less educated individuals. Furthermore, controlling for the interaction between employment protection and educational attainment, we find for several specifications a significant positive effect of high educational attainment on the probability of an individual being self-employed. The effect of employment protection per se is less robust and most likely influenced by non-linearities.

The paper is structured as follows. The model from which we derive our hypotheses is outlined in Section 2. Section 3 presents the data and the descriptive statistics, and is followed by the empirical results in Section 4. Finally, Section 5 concludes.

## 2. The model

The model of occupational choice we employ to derive our hypotheses uses a one-period framework, and embodies features of the model developed by Belot et al. (2007), combined with search frictions in the labour market as described by, for example, Pissarides (2000). We consider an economy inhabited by a mass of risk-neutral individuals who are heterogeneous with respect to two attributes: first, their level of educational attainment, denoted by  $\alpha$ , which affects productivity when an individual is employed as a worker; and, second, skills relevant in the case of self-employment, denoted by  $s$ . The latter correspond to expected income in the event that the individual chooses self-employment and are distributed among individuals according to the cumulative distribution function  $H(s|\alpha)$ , possibly depending on educational attainment  $\alpha$ . In addition, the expected income from self-employment could depend on variables that are directly influenced by the level of employment protection, namely firms' employment levels, since these might determine demand for out-sourcing. For our analysis, we assume that the direct effects of firing costs on workers are stronger than those on self-employed individuals, and for parsimony we ignore any effect of firing costs on the expected income of the self-employed individuals in the theoretical model. This point is discussed in greater detail at the end of this section. The alternative to self-employment is to enter the labour market as a worker and search for a job; thus, workers who are employed obtain a wage  $w$ , while an unemployed worker's income is denoted by  $b$ .

In the labour market, firms offer jobs, thereby determining the number of positions in each labour market segment, where each segment corresponds to a specific level of educational attainment,  $\alpha$ , of workers. In order to start production, firms have to engage in a costly search for suitable applicants, i.e., the labour market is characterised by search frictions impeding the immediate encounter between applicants and jobs on offer. We measure search frictions as search costs incurred by a firm,  $k(h)$ , which depend on the hiring rate  $h$  in the corresponding segment of the labour market, i.e., the percentage share of workers hired in the segment. Search costs are an increasing and convex function of the segment's hiring rate, i.e.,  $k'(h), k''(h) > 0$ .

<sup>5</sup> See also, for example, Williams (2003) and for low-skilled workers, Lofstrom (2011).

<sup>6</sup> According to this argument, the change in self-employment rates results from reasons of "necessity" rather than "opportunity". This distinction is further analysed by, for example, Caliendo and Kritikos (2009).

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