Socio-Economic Review, 2019, Vol. 0, No. 0, 1–42
doi: 10.1093/ser/mwz027
Article

Article

The diversity of labor market institutions and entrepreneurship

Selin Dilli[1,2,*]

[1]University of Groningen, Leeuwarden, The Netherlands and [2]Utrecht University, Utrecht, The Netherlands

*Correspondence: selin.dilli@rug.nl

Abstract

Substantial literature demonstrates that flexible labor market institutions promote entrepreneurial activity. We re-evaluate this finding by considering the complementarity between institutions as advocated by the varieties of capitalism literature. We study the relevance of labor market regulations, wage-setting institutions and social security, and their complementarity for different types of entrepreneurial activity in 19 European countries and the USA. Two findings stand out. First, the four distinct bundles of labor market institutions characterizing Europe support different forms of entrepreneurial activity, and that innovative entrepreneurial activity also exists in less-flexible and -regulated labor market arrangements. Second, the relationships between single labor market institutions and entrepreneurial activity vary across the four institutional constellations. Therefore, to promote entrepreneurship in Europe, there is a need for tailored reform strategies that consider the diversity of the institutional constellations.

Key words: labor market institutions, entrepreneurship, varieties of capitalism

JEL classification: K31, O57, L26

1. Introduction

Almost a century ago, Schumpeter (1934) identified innovation as a major engine of economic growth and entrepreneurs as the agents of the innovation process. A growing body of evidence supports this view that the economic benefits of entrepreneurship range from innovation to job creation to knowledge spillovers in fields from research to technology (Acs *et al.*, 2014). Since the mid-1990s, European policy makers who once viewed Silicon Valley with skepticism have also begun to recognize the benefits of an entrepreneurial economy (Audretsch, 2007). The Entrepreneurship 2020 Action Plan highlights that Europe needs more entrepreneurs if it is to realize more growth and create new jobs (European Commission, 2013). Despite the recognized social and economic benefits of

entrepreneurship, there is still no consensus among either policy makers or academic scholars on strategies for achieving this goal.

The levels and types of entrepreneurial activity still vary significantly across countries today (Simón-Moya *et al.*, 2014). For example, according to the 2018 Global Entrepreneurship Index developed by the Global Entrepreneurship and Development Institute (2019), the USA is the most entrepreneurial society in the world, and many European countries score worse than the Western offshoot countries on this index. According to the same index, in Europe, the Nordic countries perform well in terms of their entrepreneurial environments following the Western offshoots, whereas many of the Mediterranean and Eastern European countries have a poorer performance than the other European economies. Moreover, despite the increasing number of entrepreneurs in many European countries in the last decades, only few are innovative and ambitious to grow their businesses (Henrekson and Sanandaji, 2014). Stam (2014), for instance, refers to this rise in self-employment and new firm formation in contrast to the stagnation of innovation as the 'Dutch Entrepreneurship Paradox'. Thus, finding ways to increase the number of innovative entrepreneurs remains a challenge for Europe.

Existing works document that country-level conditions, including socio-economic factors such as economic development, human capital, sectoral differences (Millán *et al.*, 2013) and demographic characteristics (Wennekers *et al.*, 2007), determine new venture creation. In past decades, scholars have argued for a primary role of the formal and informal institutional conditions of countries in explaining the cross-national differences in entrepreneurial activity. This school of thought demonstrates that institutions determine the incentives for entrepreneurs to discover new resources or trading partners to obtain resources. Where institutions are such that the payoff for productive entrepreneurship is relatively low, entrepreneurs will tend not to be alert to those opportunities (Boettke and Coyne, 2009, p. 158). The institutional structure also determines the country-level socio-economic and demographic conditions that influence entrepreneurial activity. Among formal institutions, those that enable easy access to finance, property rights, and a legal environment for starting up a business, as well as the size of the state sector are crucial for entrepreneurial activity (Estrin *et al.*, 2013; Stenholm *et al.*, 2013). Among informal institutions, attitudes towards risk-taking, social networks, trust, individualism and self-expressive values influence innovation and entrepreneurship (Shane, 1993; Ardichvili *et al.*, 2003; Bruton *et al.*, 2010).

Given the crucial importance of institutions that have proven successful in the US, such as venture capital, policy makers have suggested introducing them to the European context. However, despite efforts, the share of venture capital remains limited in the majority of European countries (European Commission, 2013, 2016). Stimulating a more entrepreneurial culture, introducing tax incentives and providing entrepreneurial education are a few of the other suggestions that were mentioned in the European Commission (2013) report on how to stimulate an entrepreneurial society in Europe. Among institutional explanations, labor market institutions, which are the focus of this study, have received substantial attention by both policy makers and scholars. For example, the European Commission (2013) has called for action in modernizing labor markets by simplifying employment legislation and developing flexible working arrangements to stimulate entrepreneurial activity in Europe. Despite this attention, the evidence in the literature about the role of labor market institutions in entrepreneurship is inconclusive. While previous studies demonstrate that labor protection, wage-setting institutions and social security arrangements are important

for entrepreneurial activity (e.g. Parker and Robson, 2004; Kanniainen and Vesala, 2005; Henrekson *et al.*, 2010), previous research has arrived at opposite conclusions with respect to the direction of their effects (Román *et al.*, 2011a, p. 2). Therefore, the main aim of the current study is to (re-)evaluate whether and which changes in labor market institutions can help achieve the goal of a more entrepreneurial society in Europe.

We argue that there are three main reasons for the discrepancy in the literature. First, the previous literature studies the relevance of different labor market institutions, such as the presence of a minimum wage or the ease of hiring and firing employees, separately. However, according to the influential varieties of capitalism (henceforth VoC) framework, it is the complementarity of institutions and not single institutions that influences business performance (Schneider *et al.*, 2010). Because of institutional complementarities, one-size-fits-all reform strategies are unlikely to be successful (Hall and Soskice, 2001). For example, flexicurity policies, which seek a balance between flexible labor market arrangements and social security to promote competitiveness, have become important to the European Commission (Cazes and Verick, 2010). While the introduction of this model has been successful in Austria, its adoption has been more challenging in the context of Central and Eastern Europe (Viebrock and Clasen, 2008). This means that a viable reform approach requires the identification and elimination of a combination of institutional bottlenecks (Acs *et al.*, 2014). Second, given the existence and persistence of institutional complementarities (Hall and Thelen, 2009), policies targeted at a single institution must be compatible with existing institutional patterns that are historically embedded. The current empirical evidence, however, does not provide insight into whether and how the flexibilization or deregulation of labor markets would influence entrepreneurial activity across different institutional constellations. Third, many of the earlier studies do not consider heterogeneity among entrepreneurs, i.e., those who are 'high-impact' entrepreneurs contributing to economic growth and innovation versus self-employed or small business owners, who are influenced differently by labor market institutions (Román *et al.*, 2011a; Millán *et al.*, 2013).

To shed light on these issues, this paper uses the VoC framework to test whether and how the relations between different labor market institutions and entrepreneurship change depending on the varieties of institutional configurations in 20 Western developed economies between 2002 and 2014. Using pooled ordinary least squares (OLS) regression techniques, we provide empirical evidence on how the links between labor market institutions and different types of entrepreneurial activity change depending on the varieties of institutional structure.

Two important findings stand out. First, the four distinct institutional constellations in labor market institutions that characterize these 20 Western industrialized countries support different forms of entrepreneurial activity. For example, the Mediterranean market economies (MMEs), characterized by high employment protection, a moderate level of regulation in wage-setting institutions and high social security, perform moderately well in terms of total early-stage entrepreneurial activity (TEA), but these economies have significantly fewer innovative entrepreneurs with high growth aspirations. In contrast, coordinated market economies (CMEs), which have less employment protection but more centralized wage-setting institutions and higher levels of social security than MMEs, have fewer entrepreneurs but perform well in terms of the establishment of new ventures in high-tech sectors. Second, the institutional constellations help explain the links between each dimension of labor market institutions and entrepreneurship. For instance, deregulation or flexibilization policies in labor market institutions seem to be a useful strategy mainly in liberal market economies

(LMEs), whereas increased social security can be a better strategy for MMEs and Eastern European market economies (EMEs) to stimulate innovative entrepreneurial activity (IEA). As such, our findings call for a more nuanced perspective on one-size-fits-all policies and instead demonstrate that the VoC framework, a rarely used framework in the entrepreneurship literature, provides useful insight into which tailored policy strategies can help stimulate entrepreneurial activity in Europe.

This article proceeds as follows. Section 2 discusses the VoC theory and the entrepreneurship literature in terms of the role of labor market institutions to develop our hypotheses. Section 3 introduces the methodology. Section 4 discusses the results, and Section 5 concludes by discussing the implications of our findings.

2. Literature overview

To develop a better understanding of how and when institutions influence entrepreneurial activity, we should first define entrepreneurship and identify the diversity among entrepreneurs. Here, we follow Dilli *et al.* (2018) and Wennekers and Thurik (1999), who define entrepreneurship as a multidimensional concept involving two major stages: (a) 'new entry' and (b) 'innovativeness'. First, new entry involves the effort to create a viable business that results from an individual's occupational choice to work on his or her own account (Estrin *et al.*, 2013). Second, firms differ in the extent of their innovative nature. Schumpeter (1934) was the first to refer to the entrepreneur as an innovator whose function is to carry out and introduce new combinations and products to the market. The *Schumpeterian type of entrepreneurial activity* involves risk taking, the activity of introducing 'new combinations' of productive means in the marketplace, and a propensity for growing the business as well as engagement in high-tech sectors. While the technological intensity of some ventures is highly innovative in a Schumpeterian sense, having the potential for creative destruction, other ventures are less technologically advanced (Dilli *et al.*, 2018). Next to the innovative nature of the firm itself, the contribution to the innovation process of employees—who act as entrepreneurs within an organization (i.e. intrapreneurship)—is relevant to consider here, as intrapreneurship can be a crucial driver of innovation, and the way labor markets are structured would directly shape the incentives for employees to contribute to the innovative nature of firms.

There is wide agreement among policy makers and scholars that institutional context influences both the supply and type of entrepreneurial activity in an economy but in different manners (see Van Der Zwan *et al.*, 2013 for an overview). For instance, Baumol (1990) argue that changes in institutions would primarily determine the allocation of entrepreneurs between productive activities, such as innovation, and unproductive activities, such as rent seeking, whereas they would play a more limited role in the supply of entrepreneurs. In a cross-country comparison of 43 countries, Stenholm *et al.* (2013) show that while a supportive regulative environment is crucial for the formation of new firms, it matters very little for innovative, high-growth new ventures. Among the institutional factors, both formal institutions, such as the easiness of business regulations, better access to finance and educational opportunities, as well as informal institutions, such as individualism and uncertainty acceptance, have received substantial attention as factors that stimulate entrepreneurial activity (Shane, 1993; Storr, 2012).

In an institutional framework of entrepreneurship, labor market institutions deserve attention because they have direct implications for both enterprises and business formation (Henrekson *et al.*, 2010). The labor market institutions that are identified as relevant for entrepreneurship can be grouped under three pillars: (a) the regulation of labor markets, (b) wage-setting institutions and (c) social security systems (Kanniainen and Vesala, 2005; Román *et al.*, 2011a; Henrekson, 2014). Nevertheless, despite the evidence on the role of labor market institutions in entrepreneurial activity, with few exceptions (e.g. Kanniainen and Vesala, 2005; Henrekson *et al.*, 2010), the earlier literature generally tests the relevance of one dimension of labor market institutions on one type of entrepreneurial activity and reaches contradictory conclusions.

To develop a better understanding of how labor market institutions can influence different patterns of entrepreneurial activity across Europe, we first discuss the mechanisms of how and why each dimension of labor market institutions can stimulate different levels and forms of entrepreneurial activity in line with our definition above, namely, (a) entry rate and (b) innovativeness captured by firms' ability to introduce new products, engagement in high-technological sectors, their employees' entrepreneurial activity and aspiration to grow. We then elaborate on the VoC framework to argue for why the links (i.e. the directions and strengths) between each pillar of the labor market institutions and different types of entrepreneurial activity are likely to change depending on the institutional constellations belonging to each country.

2.1 Regulation of labor markets

There is a large body of evidence indicating that labor market institutions regulating *rules regarding employment* (e.g. the easiness of short-term hire-fire policies) can influence the supply of entrepreneurial activity at the entry level in a country in two opposing manners. On the one hand, stringent labor market institutions can cause an agent to be less likely to choose to start a business because these institutions have the effect of reducing the risk of earnings in paid employment relative to the risk of self-employment income (Kanniainen and Vesala, 2005; Golpe *et al.*, 2008). On the other hand, rigid labor market institutions can increase the level of entrepreneurial activity. In stricter labor markets, employers may circumvent the effects of regulations on their ability to hire and fire employees by contracting with self-employed workers (Parker, 2007; Román *et al.*, 2011b). According to Van Praag and Van Stel (2013, p. 352), these opposite effects can be explained by the U-shaped nature of the relationship. In their view, under strict labor protection, 'outsiders' (i.e. a low-skilled labor force) would start new firms out of necessity as it is harder for them to find paid jobs, whereas for 'insiders' with high skills, the opportunity costs of starting up a business would be high due to the high wages and security of their paid labor, therefore discouraging opportunity-driven entrepreneurship. Flexible labor market arrangements, on the other hand, would stimulate opportunity-driven entrepreneurship as the relative costs and risks of becoming self-employed would be reduced compared to paid employment. As a result, the level of entrepreneurial activity would be similarly high in countries such as the USA, where labor market regulations are very flexible and a large share of entrepreneurs are opportunity driven, and in countries such as Italy, where the majority of entrepreneurs are necessity driven and labor market institutions are strictly regulated.

In terms of IEA, strict labor markets can also have opposing effects. Strict hiring and firing regulations can increase the costs of innovation, as labor adjustments such as reshuffling

of the workforce or downsizing are often needed after innovation and, as a result, decrease the incentives for IEA (Tressel and Scarpetta, 2004). Proponents of this view argue that flexible labor market arrangements would stimulate radical types of innovation, which rely on employees with general skills who adapt easily to constantly changing supplier–producer relationships (Herrmann and Peine, 2011). These skills would be more common in flexible labor market arrangements because employees would change jobs frequently and invest in general training to increase their employability (Hall and Soskice, 2001). However, various scholars have challenged this view. For instance, according to this school of thought, stringent labor laws provide firms with a commitment device to not punish short-run failures of their employees and pursue risk-taking radical innovative activity (Kleinknecht *et al.*, 2014). Such laws would also encourage firm-specific skills, which help employees to autonomously develop improvements in production that translate into incremental innovations (Dilli *et al.*, 2018). Thus, strict employment regulations can stimulate higher entrepreneurial employee activity (EEA), through which they contribute to IEA.

In terms of growth aspirations, strict labor market regulations can hamper the growth processes of new entry firms because they make the hiring or firing of new employees costly for the employer (Henrekson *et al.*, 2010; Millán *et al.*, 2013). Moreover, such regulations may deter individuals with higher growth expectations from entering self-employment in the first place if they think their business will be prevented from reaching optimal size (Van Stel *et al.*, 2007). Nevertheless, Kleinknecht (1998) argue that innovative firms usually have higher growth rates and hence less need to fire people, which means that greater ease in firing people would primarily give a competitive advantage to non-innovators and their decision to grow the firm.

2.2 Wage-setting institutions

With respect to wage-setting institutions, the general view is that in countries where wage bargaining is more centralized and labor unions are stronger, there would generally be fewer entrepreneurs, of whom fewer would engage with innovative activity and thus would have lower growth aspirations. Bruce and Mohsin (2006) demonstrate that in the USA, the minimum wage rate is a substantial barrier to entry. When wage bargaining is centralized and ignores the cost of setting up a firm, it tends to increase firms' inability to recoup the sunk costs of entry and, as such, to increase the risk of failure (Kanniainen and Leppämäki, 2009, p. 293). Similarly, stronger union power is argued to lead to smaller numbers of entries because, by pushing up the wage rate, union actions lead individuals to abstain from entrepreneurship and to instead enter into wage labor (Braunerhjelm *et al.*, 2010).

However, while fewer entrepreneurs can be expected in a centralized wage-setting environment, there is less clear evidence on why those who engage in entrepreneurial activity would engage in less-innovative businesses. According to the scholars who argue for a negative relationship, the compressed wage structure hinders young firms in using salaries as an incentive to recruit new innovative employees and, as a result, hampers the innovation process of companies (Braunerhjelm and Henrekson, 2015, p. 19). A movement away from a standard wage rate applying to all workers under centralized wage bargaining to a more decentralized wage structure means that wages are determined more in accordance with individual productivity and local conditions (Dahl *et al.*, 2013). This can increase the incentives for employees to contribute to the innovative activity of the firm. However, according to the opponents of this view, centralized wage setting can facilitate firm-sponsored on-the-job training by reducing the variability of wages offered across firms and therefore reduce

the scope for poaching and can contribute to incremental innovation (Kılıçaslan and Taymaz, 2008). Wage compression coupled with stationary minimum wages can increase the supply of skilled laborers because higher wages for unskilled workers decrease the demand for unskilled labor. Consequently, workers will have incentives to invest in education and training to increase their employability (Kılıçaslan and Taymaz, 2008, p. 480).

Based on the previous literature, a negative link can be expected between regulated wage-setting arrangements and entrepreneurs with growth aspirations because wage setting increases the labor costs for the entrepreneur as it compresses the lower tail of the wage distribution, and many entrepreneurs work with less-skilled workers (Davidsson and Henrekson, 2002). However, following the reasoning of Kleinknecht (1998), for firms that are involved in more high-tech sectors and are innovative, the role of centralized wage-setting institutions in their growth intentions can be more limited as they would have the resources to hire new employees.

2.3 Social security

In terms of the link between social security arrangements and the quantity of entrepreneurial activity, one school of thought argues that generous social benefits, such as unemployment, pension benefits and health insurance, increase perceptions of the risk involved in establishing a business and decrease incentives to start up a new venture (Wennekers *et al.*, 2007; Parker, 2007; Hessels *et al.*, 2007). Another school of thought claims that generous social security arrangements can increase the supply of entrepreneurial activity at the country level as a generous welfare system makes it less costly for an entrepreneur to bear uncertainty, especially in case of business failure (Hessels *et al.*, 2007). The empirical evidence in the literature seems to support the former view supporting the negative link, rather than the latter (see Hessels *et al.*, 2008 for a review). [1]

In addition to their relevance for the rate of entrepreneurship, a country's social security arrangements are likely to affect the allocation of entrepreneurs' engagement across productive and unproductive activities (Henrekson, 2005). Hessels *et al.* (2008, p. 328) argue that countries with generous social security do not emphasize the individual's responsibility for their own survival, which may hamper ambitions to strive for innovation and growth. Nonetheless, there are also reasons to believe that a generous social system can stimulate Schumpeterian-type entrepreneurial activity. For instance, this type of entrepreneurial activity requires risk, and as mentioned above, some social security can create a safety net in the event of business failure (Hessels *et al.*, 2007). Recent years have also witnessed the creation of various governmental funds to support innovative entrepreneurs. For instance, since 2014, Danish Growth Capital, a government investment, has aimed to improve access to risk capital for entrepreneurs and SMEs by creating a fund-of-funds using pension funds (OECD, 2015). Spain and Slovakia dedicate an important share of their social spending to business startup programs (OECD, 2016).

High social security and spending, however, can hamper businesses' growth aspirations. Higher levels of social security often imply higher wage costs because employers normally must pay at least part of the social security contribution for their employees. This cost may further limit entrepreneurs' aspirations for growth of their firms because it may be costly for them to hire employees (Hessels *et al.*, 2008, p. 328).

1 While the contributions of employees and employers to social security are relevant factors for entrepreneurial activity, we cannot make this distinction due to a lack of data.

2.4 The VoC framework, labor market institutions and entrepreneurial activity: hypotheses

The previous section illustrates that a consensus is yet to emerge on how labor market institutions influence various forms of entrepreneurial activity. Using insights from the VoC literature, we argue that this is because earlier studies consider single labor market institutions and neglect the fact that each country has evolved its own particular institutions, which are complementary. The core idea of complementarity is that the presence of one institution increases the efficiency of the other institutions within a given system (Amable, 2003, p. 6). According to this concept, the complementarity between labor market institutions, finance, inter-firm and know-how institutions as well as informal institutions is the most influential factor in determining any type of business activity and explains the differences between countries' economic performance, such as innovation patterns and income inequality (Hall and Soskice, 2001; Schneider and Paunescu, 2012). Looking at these institutional dimensions, the VoC literature identifies four distinct types of institutional constellations among the Western affluent economies: LMEs composed of the USA, UK, and Ireland; CMEs exemplified by Germany; MMEs including Italy, France, Spain and Greece; and EMEs (e.g. Poland) (e.g. Amable, 2003; Dilli *et al.*, 2018; Schneider and Paunescu, 2012).

To date, with few exceptions (e.g. Dilli *et al.*, 2018), the VoC literature mostly focuses on established firms. However, there are a number of reasons why the concept of institutional constellations can improve our understanding of how labor market institutions influence various forms of entrepreneurship. First, the existence of complementarities implies that, rather than a single institution, there might be different combinations of labor market institutions associated with 'good' entrepreneurial performance. Second, rather than studying their direct effects, the interaction of each labor market institution with the four institutional constellations can better demonstrate the implications of a change in each labor market institution for entrepreneurial activity. This is because, given their complementarity, the efficiency of flexible employment regulations should increase with the existence of deregulated wage-setting institutions and low social security, as all three would provide a different form of flexibility to the firm (Amable, 2003; Kleinknecht *et al.*, 2012). While the first type of labor market institution should allow firms to adjust the size of their labor force through easier hiring and firing, the latter two would determine wage costs and flexibility, which concerns the responsiveness of wages to economic shocks (Kleinknecht *et al.*, 2012). Moreover, the VoC literature indicates that each labor regime also has supportive finance, know-how and inter-firm institutions as well as distinct informal rules. Informal rules, for instance, establish formal institutions and their operating procedures and set up common expectations among actors based on past experience to coordinate effectively (Hall and Soskice, 2001). Because informal institutions change slowly over time (Boettke *et al.*, 2008), the institutional constellations are also likely to persist,[2] which makes it important to analyze the change in each labor institution separately for each institutional constellation. Various studies also argue that entrepreneurs' intentions and cognitive ability help identify opportunities and are directly shaped by their cultural environment (Ardichvili *et al.*, 2003;

2 The VoC framework has been criticized for being too static, and a few studies conclude that a number of European countries have experienced a shift between the different typologies of institutional constellations (e.g., Schneider and Peunescu 2012). However, this debate is beyond the scope of the current study and therefore is not discussed here.

Arenius and Minniti, 2005; Arentz *et al.*, 2013). Thus, in institutional constellations where the cultural environment as well as different formal institutional dimensions are more favorable to entrepreneurial activity, a change in a single labor market institution coherent with the existing institutional structure is expected to bring higher returns to entrepreneurial activity. If the rules introduced by each institution contradict each other, they cannot reach an equilibrium (Amable, 2003, p. 53). While the differences in other formal and informal institutions of the four constellations are also relevant for explaining the variation in countries' entrepreneurial performance,[3] given the aim of this article, our focus below is mainly on how the four institutional constellations differ with respect to their labor market institutions and their implications for entrepreneurial activity.

In LMEs, labor markets are the least regulated, with relatively unrestrictive individual-dismissal regulations. Wages are determined at the firm level, with almost no coordination among different agents, and social security is the most limited compared to other institutional constellations (Scarpetta, 2014; Ulku and Muzi, 2015). With flexible labor arrangements, reduced competitive wage rates due to decentralized wage bargaining and lack of social security, the risks of becoming an entrepreneur compared to paid employment would be reduced, consequently increasing the incentives for individuals to start a business. Moreover, in LMEs, the combination of low costs, flexibility of hiring and firing of employees, lower social security premiums and firm-level wage bargaining can give entrepreneurs the flexibility to recoup the cost associated with innovation when discovering a new product, and entrepreneurs would be more likely to grow their businesses. However, due to less-attractive wage employment conditions and a competitive salary scale determined based on personal performance, many employees would be interested in pursuing their innovative activity by setting up their own business rather than within the organization they work for. As a result, compared with the other institutional constellations, LMEs are expected to have the highest level of entrepreneurial activity and the most Schumpeterian-type entrepreneurial activity, which are innovative and include growth aspirations but perform moderately in EEA.

Returns on flexibilization in labor market regulations, decentralization of wage institutions and lowering social security to stimulate entrepreneurial activity are also expected to be higher in LMEs, as the overarching market-based formal and informal institutional frameworks would increase the efficiency of the shift towards liberal labor market regimes. For instance, LMEs have an individualistic, risk-taking and short-term-oriented cultural context (Lundin *et al.*, 2015). In such a cultural context, individuals would be more likely to quickly identify opportunities to start their own business when the conditions in paid labor become less attractive due to changes in each single labor market institution. Thus, in LMEs, we expect the positive links between flexible labor market arrangements, decentralized wage-setting institutions and lower social security to be stronger for all three types of entrepreneurial activity.

Conversely, in CMEs, the labor market regulation for permanent employment is moderate. In contrast to LMEs, wage negotiations are more centralized, and social security is generous and provides a safety net during times of unemployment, providing the time to search for a new job in wage employment (Hall and Soskice, 2001). As a result, 'insiders' would be fairly well protected and have higher wages, making entrepreneurship a less attractive option. Moreover, because temporary employment is relatively deregulated in CMEs, employers can choose a temporary workforce rather than contracting with self-employed

3 For a review on this topic, please refer to Dilli et al. (2018).

workers, which is one of the reasons why rigid labor market institutions are expected to stimulate entrepreneurial activity. As a result of this combination making wage employment more attractive, we expect to find fewer entrepreneurs in CMEs than LMEs. In terms of innovative forms of entrepreneurial activity, however, there are numerous reasons why CMEs can perform as well as LMEs. First, increased labor costs can stimulate the adoption of labor-saving innovations (Kleinknecht *et al.*, 2014). Second, in CMEs, entrepreneurs can use the high wages to attract talented employees, and the rigid labor market institutions would encourage employees pursue risky innovative activity. Third, the rigid labor market institutions can increase the investment of the firm in employee training, which can contribute to innovative activity. Akkermans *et al.* (2009), who examine the innovation patterns between LMEs and CMEs, show that there is no clear-cut evidence that LMEs are more radically innovative than CMEs; instead, the difference is attributable to where the innovation takes place. While innovations occur more often in industries related to chemicals and electronics, CMEs perform well in machinery and transportation. However, Akkermans *et al.* (2009) also observe that the innovations in LMEs are more original and do not use earlier patents. Therefore, in terms of IEA, while CMEs can perform less well in terms of entrepreneurial activity that introduces a new product to the market, CMEs are expected perform as well in the establishment of new ventures in high-tech sectors and to perform better in EEA than LMEs. In terms of firm growth, fewer entrepreneurs would have growth aspirations in CMEs than in LMEs due to the high labor costs and difficulty of firing new employees in CMEs.

Flexibilization policies targeted at one of the three labor market institutions are expected to have no effect or even a negative effect on stimulating an increase in the amount of entrepreneurial activity or the number of entrepreneurs with growth aspirations, as they would contradict the present institutional structure. In the case of the supply of entrepreneurial activity, this is also because the institutional structure in CMEs stimulates long-term commitment, less risk taking in the market and trust between employer and employees (Lundin *et al.*, 2015), which would make the employees less likely to pursue a career as entrepreneurs in the short run. Moreover, given that the combination of a rigid labor market together with high wages can give a comparative advantage to CMEs in innovation, changes in any dimension of labor market institutions are expected to hamper IEA more in CMEs than LMEs.

MMEs have the most rigid labor regulations compared to the rest of the institutional clusters. While the level of social security is lower than in CMEs, it is higher than in EMEs and LMEs. Wage setting is more deregulated than in CMEs and shows similar levels to LMEs and EMEs. Bargaining coverage is often extended through provisions, whereas weak trade unions can control large parts of the labor market without being representative of large parts of the workforce (Hassel, 2014, p. 11). In MMEs, as a result of the very rigid labor regulations, employers would likely to choose to contract out with self-employed workers, creating a demand for entrepreneurial activity. Employers would also have a larger pool of self-employed workers to choose from because the less attractive conditions in wage employment due to decentralized wage setting and the lower social security arrangements would increase the incentives to start a business quickly in MMEs than in CMEs. Therefore, we would expect to find higher numbers of entrepreneurs in MMEs than in CMEs, though they would largely be necessity driven.

In terms of IEA, while rigid labor market institutions can give incentives to invest in employee training due to longer-term commitments because this rigid regulation is not supported with a high wage structure like in CMEs, highly skilled employees would have

fewer incentives to contribute to the innovation activity of the firm. While the rigid labor market institutions would limit the flexibility to adjust the costs associated with innovative activity, the limited social environment would provide entrepreneurs with minimal support for the risks related to innovation. In the VoC literature, MMEs are shown to specialize in light industries and low-tech activities (Amable, 2003), which means there would be fewer opportunities for new ventures in high-tech sectors in the first place. Consequently, we expect to find fewer innovative entrepreneurs in MMEs than in CMEs and LMEs.

In MMEs, better collective wage arrangements, which can contribute to attractive wage employment conditions and more social security can be a more efficient strategy to stimulate innovative entrepreneurship, which would also complement the presence of rigid labor market institutions. However, as labor would become more expensive, the number of entrepreneurs with high growth aspirations could be reduced as a result of these changes in labor market institutions. Contrarily, decentralization of wage-setting institutions or reducing social security to levels similar to LMEs is likely to stimulate downwardly flexible wages, which particularly increases the employability of high numbers of unemployed people with low qualifications (Kleinknecht, 1998) and therefore is not expected to contribute to Schumpeterian-type entrepreneurial activity. The introduction of flexible labor regulations, on the other hand, can reduce the number of entrepreneurs in MMEs, as this may reduce employers' incentive to contract out and consequently the number of necessity-driven entrepreneurs.

In EMEs, the position of labor is relatively weaker than that in MMEs and CMEs given the heavy competition for foreign direct investment and the lingering threat of companies being relocated farther east. Since the collapse of the Soviet Union, EMEs have had the least-centralized wage-setting institutions, while welfare arrangements are not as comprehensive as those of MMEs and CMEs (Nölke and Vliegenthart, 2009, p. 684). As a result of the low social security premiums and decentralized wage-setting institutions, which contribute to low wages, EMEs have an advantage in attracting multinational companies (Nölke and Vliegenthart, 2009). Because EMEs are assembly platforms in global commodity chains and the loss of a skilled force is very costly, however, EMEs have a relatively high level of labor protection, especially for permanent contracts (Nölke and Vliegenthart, 2009). Therefore, similar to MMEs, the rigid labor market regulations would make contracting out an attractive option for employers, and employees would have more incentives to start a business with low wages and less security. Therefore, we would expect to find more entrepreneurs in EMEs than in CMEs but fewer than in LMEs.

Similar to MMEs, EMEs are expected to perform less well in terms of IEA compared to CMEs and LMEs, as the low wages would provide fewer incentives for employees to contribute to innovative activity in the firm, and the strict labor market regulations would limit the flexibility of the employees to adjust to the costs that accompany innovation. Because the cost of hiring new employees is cheaper than in MMEs and CMEs due to the combination of low social security and decentralized wage institutions, entrepreneurs in EMEs would likely have higher growth aspirations than in MMEs and CMEs. Following a similar strategy to MMEs by increasing social security arrangements and/or the centralization of wage-setting institutions can influence IEA in two opposing manners. On the one hand, it can increase the incentives for EEA and contribute to IEA. However, it can also have undesirable effects. The low labor costs in EMEs provide a comparative advantage to firms by reducing the costs associated with the innovation process compared to the other institutional constellations. As a more regulated wage setting and more social security is likely to limit the cheap

Table 1. Overview of the hypotheses

	LMEs	CMEs	MMEs	EMEs
TEA (Expected outcome)	High	Low	High	Moderate
(More) Regulation of labor markets	−	O	+	O
(Centralized) Wage setting	−	O	−	−
(Higher) Social Security	−	O	−	−
IEA (Expected Outcome)	High	Moderate/High	Low	Moderate
(More) Regulation of labor markets	−	−/ O	−	−
(Centralized) Wage setting	−	O	+	±
(Higher) Social Security	−	O	+	±
Births in high-tech and high-medium-tech sectors (Expected outcome)	High	High	Low	Low
(More) Regulation of labor markets	−	O/+	O/−	O/−
(Centralized) Wage setting	−	O	+	±
(Higher) Social security	−	O	+	±
EEA (Expected outcome)	Low	High	Moderate	Low
(More) Regulation of labor markets	O/+	O/+	O	O
(Centralized) Wage setting	O/+	+	+	+
(Higher) Social Security	O/+	+	+	+
High-growth aspirations (HGA) (Expected outcome)	High	Moderate	Low	High
(More) Regulation of labor markets	−	−/O	−	−
(Centralized) Wage setting	−	O	−	−
(Higher) Social Security	−	O	−	−

Notes: '+' represents a positive, '−' represents a negative and 'O' represents no clear direction of the hypothesized relationship.

labor advantage of EMEs and also make EMEs less attractive for multinational companies, they can limit the opportunities for entrepreneurs to start a business. Moreover, such changes are likely to hamper the activity of entrepreneurs with growth aspirations, as hiring new employees would become more expensive.

Table 1 provides an overview of our hypotheses formulated based on the discussion above.

3. Methodology

3.1 Data and measurements

To test our hypotheses, we collect data from various online sources listed in Appendix A. Our sample consists of 20 Western industrialized countries between 2002 and 2014 for three reasons. First, we select those countries that are studied the most in the VoC literature. Second, data availability for our entrepreneurship and institutional indicators plays a role. Third, our focus is on the European context with the addition of the USA, which is widely depicted as the most entrepreneurial society in the entrepreneurship literature.

In line with the definition provided in Section 2, we collect data on different indicators that can capture the aspects of entrepreneurial activity from the Global Entrepreneurship Monitor (2017) and the Eurostat Business Demography database (2017). To capture 'new

entry', we use TEA, which measures the percentage of the working population composed of either nascent entrepreneurs or owner-managers of new businesses. To study the 'innovativeness' of entrepreneurial activity, we use four different indicators. IEA measures the percentage of those involved in TEA who indicate that their product or service is new to at least some customers and that few/no businesses offer the same product. In that sense, IEA measures more 'original' types of innovative activity. Second, we collect data from the Eurostat database on the number of new ventures as a percentage of the population of active enterprises in high-tech and high-medium-tech sectors classified according to the NACE Rev. 2 categories.[4] We use the intensity of technology as a measure of new ventures' innovativeness. Third, we look at the EEA, defined as the share of the population aged between 18 and 64 actively involved in and playing a leading role in developing or launching new goods or services or setting up a new business unit or subsidiary for their employer. Fourth, HGA entrepreneurial activity is the percentage of TEA entrepreneurs who have expectations with respect to job creation for five or more employees in the next five years.

To capture the regulation of labor markets, we use the OECD's well-known Employment Protection Legislation (EPL) index for permanent and temporary employment. To determine whether the two indices of the EPL index for permanent and temporary employment can be combined into one composite index, we apply a factor analysis, which determines whether the two sets of indicators indeed capture one latent variable, 'the regulation of labor market', or whether the two indicators should be treated separately. The results of the factor analysis of the regulations for temporary and permanent employment reveal an eigenvalue below 1; therefore, we treat these two indicators separately in the regression analysis. We present the results for permanent contracts in the text, whereas the results on temporary employment are presented in Table A4 and Figure B in the Appendix.

Three sets of indicators are used to measure the wage-setting institutions (Visser, 2013). The first set relates to the strength of trade unions, i.e. trade union density,[5] the unions' roles in wage bargaining processes, and the financing of trade unions. The second indicator is the level of coordination in wage bargaining. Third, we capture the presence of a national minimum wage. Because each variable has a different measurement scale, before the factor analysis, we standardize them using their Z-scores. The factor analysis on the three sets of wage-setting institutions reveals an eigenvalue of 2.13, supporting the choice to create a single composite index of wage-setting institutions.

To measure the social security system, we again use two main sets of indicators. First, we collect data on sickness, unemployment and pension minimum replacement rates from the Comparative Welfare Entitlements database (Scruggs *et al.*, 2017). Second, we rely on the OECD's Social Spending database to collect data on the shares of social expenditure on unemployment, active labor market programs and total social spending. As in wage-setting institutions, because each variable has a different measurement scale, before the factor

4 This database is lacking information on Greece and the US. To check the robustness of these findings, we also use the growth rate of the firms in high-tech sectors (from Dilli et al. 2018) as an indicator, which includes data on the US. The results with regard to the differences between institutional constellations remain the same and therefore are not reported here.

5 The data on trade union density do not provide information about the coverage of wage earners' collective agreements. However, to our knowledge, this is the only indicator of trade union coverage that is historically available; therefore, it is included in the analysis.

Table 2. Descriptive statistics ($N = 20$).

	Min	Max	Mean	SD	N
Entrepreneurship					
TEA	1.63	14.20	6.13	2.17	179
IEA	13.97	54.13	30.17	7.14	111
Birth in high-tech and high-medium-tech sector	0.03	0.27	0.12	0.06	126
EEA	0.76	16.18	5.53	2.92	102
HGA	0	44.03	25.44	7.98	179
Regulation of Labor Market					
EPL permanent	0.26	4.58	2.29	0.82	197
EPL temporary	0.25	3.63	1.61	0.94	197
Wage setting	−1.35	1.58	−0.07	0.88	197
Trade union density	7.55	78.05	32.23	20.13	197
Union finances	2	3	2.46	0.50	197
Coordination wagesetting	1	5	3.02	1.26	197
National minimum wage	0	2	1.16	0.98	197
Social security	−1.74	1.48	−0.03	0.80	197
Unempl. Rep.R. (single)	0.17	0.90	0.58	0.17	197
Sickness Rep.R. (single)	0	1	0.71	0.26	197
Min. Pension Rep. R. (single)	0.10	0.55	0.35	0.10	197
Social expenditure unemployment	0.5	7.60	2.57	1.70	197
Social expenditure labor	0.2	3.80	1.51	0.73	197
Social expenditure total	35.50	58.60	49.89	4.47	197
Control variables					
Log (GDP)	9.37	11.04	10.40	0.31	197
R&D	0.45	3.75	1.83	0.87	194
Level of innovation	12.8	53.40	39.29	11.99	197

analysis, we standardize them using their Z-scores. The factor analysis of the indicators of social security shows an eigenvalue of 2.04; therefore, we create a composite measure of social security.

To capture the diversity in the institutional constellations, we create a categorical variable based on the four most commonly identified typologies in the VoC literature (e.g. Amable, 2003; Schneider and Paunescu, 2012; Dilli *et al.*, 2018), namely, LMEs (Ireland, the UK and the USA), CMEs (Finland, Sweden, Denmark, Austria, the Netherlands, Germany, Switzerland, Norway and Belgium,), MMEs (Spain, France, Greece and Italy), and EMEs (the Czech Republic, Poland and Slovakia). A cluster analysis of the labor market institutions listed above, with the exception of Italy (which belongs to the CME countries), also supports the four clusters (illustrated in Supplementary Figure S1).

As control variables, we include the level of economic development of a country, as measured by the GDP per capita. Moreover, we collect data from the OECD on the share of investment in research and development as well as the share of firms that are innovative to capture the countries' overall levels of innovativeness and technological advancement. Table A1 presents a detailed description of the variables and their sources, and Table 2 provides their descriptive statistics.

3.2 Estimation strategy

To test the implications of the institutional constellations for the relation between labor market institutions and entrepreneurship, we use the OLS regression technique to estimate the following classification:

$$Y_{it} = \alpha + \beta_1 \text{Cluster}_{it} + \beta_2 \text{Labor institutions}_{it} + \beta_3 \text{Cluster}_{it} * \text{Labor institutions}_{it} + \beta_2 \ln\text{GDP}_{it} + \beta_6 \theta_t + e_{it} \quad (1)$$

where Y is the different entrepreneurship indicators at time t for country i, and α is a constant. Cluster_{it} is a dummy variable that refers to the membership of country i at time t in the VoC typology. Labor institutions capture the three pillars of the labor market institutions, i.e. the EPL index for permanent contracts and composite indices of wage-setting institutions and social security. Cluster∗labor institutions represent the interaction terms between the institutional constellations and the three underlying variables of the labor market institutions. This approach tests the proposition that the institutional constellations moderate the relationships between each dimension of the labor market institutions and entrepreneurial activity. We also control for the level of economic development in each analysis.[6] In addition to economic development, we test the robustness of our findings by controlling for the levels of investment in research and development and innovation. Due to the limited number of observations and high correlation among these variables, we present these results in Table A5 in the Appendix A, where θ is the time-fixed effect, and e is the error term. Because our clusters do not change in the time period of the regression analysis, we do not include country-fixed effects in the regression analysis.

We first test the implications of institutional constellations for different forms of entrepreneurial activity by including the categorical variable on the institutional constellations while controlling for the level of economic development and including time-fixed effects. The results of this analysis are presented in Table 3. Second, we examine the interactions between the three pillars of labor market institutions and the categorical variable on the VoC typologies to identify whether a change in a single labor market institution has the same impact on entrepreneurship outcomes or whether and how its impact changes. The interaction terms for each pillar of the labor market institutions and institutional constellations are tested separately because of multicollinearity issues. Table A2 in the Appendix A presents the correlations between the independent variables. The regression results of the interaction terms are presented in Table A3. To acquire a better sense of these interaction terms, we also plot the interaction terms between employment protection legislation for permanent employment, wage-setting institutions, social security, and the cluster in terms of the marginal effects for each entrepreneurial outcome with the 95% confidence intervals. The relations between the different indicators of entrepreneurial activity and the clusters of countries are depicted for three values of employment protection legislations for permanent employment, wage-setting institutions and social security (i.e. the 10th, 50th and 90th percentiles), whereas the remaining indicators are fixed at the levels of their sample averages. These figures are presented in Figures A1–A5 in the Appendix A. Table 4 summarizes the results of Table 3 on the main effects and the interactions in terms of signs based on the results of the

6 We also consider economic structure as an additional indicator of economic development. However, as the size of the manufacturing and service sectors is highly correlated with GDP per capita, we exclude this indicator from the analysis.

regression analysis in Table A3 and Figures A1–A5. This approach provides a more straightforward manner of summarizing the results of the interaction terms and linking them with the hypotheses presented in Table 1. We repeat the same analysis with employment protection legislation for temporary employment as the main independent variable. The results of this model are presented in Table A4 and Figure B. Additional model specifications are discussed further under the robustness checks.

To address missing-data issues, a multiple imputation technique that uses a bootstrapping-based algorithm designed for panel data is chosen for the independent variables. This method uses a combination of the imputation-posterior (IP) and expectation-maximization (EM) algorithms and involves imputing m values for each missing item and creating m completed datasets (King *et al.*, 2001). For the dependent variables, we also use an interpolation method that takes into account the panel data structure.

4. Results

Do institutional constellations in labor market institutions support different forms of entrepreneurial activity, and what do these institutional constellations imply for the relation between each labor market institution and entrepreneurial activity? Table 3 answers the former question, and Table 4 provides an answer for the latter.

Model 1 in Table 3 indicates that there are ~3% fewer people in TEA in CMEs than in LMEs. While the sign of the coefficient for the MMEs is negative, the result is insignificant.

Table 3. Regression analysis on the institutional constellation and different forms of entrepreneurial activity ($N = 20$)

	(1)	(2)	(3)	(4)	(5)
	TEA	IEA	Birth in high-tech and high-medium tech	EEA	HGA
CMEs	−2.75***	−5.00**	−0.00	0.73	−6.68***
	(−3.36)	(−1.85)	(−0.00)	(0.93)	(−4.26)
MMEs	−1.29	−8.12*	−0.09**	−3.88***	−6.00***
	(−1.05)	(−1.70)	(−2.19)	(−4.13)	(−3.03)
EMEs	3.46*	−10.11	−0.08*	−2.56*	12.07***
	(1.66)	(−1.30)	(−1.71)	(−1.45)	(3.40)
log (GDP)	4.57**	−3.70	−0.01	0.40	14.13***
	(2.12)	(−0.37)	(−0.13)	(0.17)	(2.91)
Constant	−39.78**	75.35	0.23	3.28	−112.34**
	(−1.79)	(0.71)	(0.41)	(0.13)	(−2.17)
Observations	179	111	180	102	179
Time effects	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.420	0.074	0.479	0.509	0.332

Note: Absolute heteroskedasticity consistent t-values are reported below coefficients.
*$P < 0.10$, **$P < 0.05$, ***$P < 0.01$ (one-sided).
Reference category is the LMEs in the cluster variable. While the indicators on TEA and HGA are measured in the time period between 2001 and 2014, birth of firms in high-tech and high–medium-tech sector is measured in the period between 2004 and 2014 and lacks information on the USA and Greece. IEA and EEA are measured from 2011 onwards.

Table 4. Labor market institutions entrepreneurial activity across different institutional constellations

	LMEs	CMEs	MMEs	EMEs
TEA	High	Low	Moderate	High
(More) Regulation of labor markets	−	+	+	−
(Centralized) Wage setting	O	O	O	O
(Higher) Social Security	O	O	O	+
IEA	High	Moderate/Low	Low	Low
(More) Regulation of labor markets	O	O	O	O
(Centralized) Wage setting	O	−	−	O
(Higher) Social Security	O	O	O	–
Birth in high-tech and high-medium tech sectors	High	High	Low	Low
(More) Regulation of labor markets	−	O	O	O
(Centralized) Wage setting	−	O	+	+
(Higher) Social Security	−	+	O	O
EEA	Moderate	High	Low	Low
(More) Regulation of labor markets	O	O	O	O
(Centralized) Wage setting	O	+	O	O
(Higher) Social Security	O	O	+	O
HGA	Moderate	Low	Low	High
(More) Regulation of labor markets	O	O	O	O
(Centralized) Wage setting	O	O	O	O
(Higher) Social Security	O	O	O	−

Notes: This table summarizes the results of Table A3 and Figures A1–A5, which plots the marginal effects of employment protections legislations, wage setting institutions and social security across the four institutional constellations. '+' represents a positive and significant coefficient of the interaction term in Table A3 and a visible difference in the Figures A1–A5, '−' represents a negative link and 'O' refers to either non-significant findings in Table A3 or hardly any visible change in the figures.

This is because the high employment protection regulation is likely to make the contracting out option more attractive for employees, whereas the more limited opportunities in wage employment and limited social security arrangements are likely to increase necessity-driven entrepreneurs in MMEs, supporting the findings of Wennekers *et al.* (2007). EMEs have, on average, almost 3% more people engaging in TEA than LMEs. While EMEs have high employment protection for permanent employment, with similar levels to CMEs and MMES, EMEs have low social security and decentralized wage-setting institutions. The low wages as a result of decentralized wage-setting institutions and lack of a social safety net during unemployment in EMEs can make starting one's own business more attractive rather than working as a paid employee in a large organization. Therefore, engaging in entrepreneurial activity seems to be the least attractive option in CMEs, which combine moderately flexible labor market regulations, which give employers more freedom to hire and fire, a coordinated wage-setting structure ensuring favorable work conditions for wage employment and a well-developed social security system with active labor market programs providing new opportunities for employment and a social safety net during times of unemployment. The fact that both EMEs and MMEs perform relatively well in TEA compared with LMEs implies that TEA is viable in both extremes of employment protection regulation. The varying levels of

TEA between EMEs and MMEs indicate a link between EPL for permanent employment and TEA changes, given the levels of social security arrangements and wage-setting institutions.

Models 2, 3, 4 and 5 consider different measures of innovativeness in entrepreneurial activity. Model 2 in Table 3 illustrates the extent to which different forms of institutional constellations support IEA, defined as introducing a new product to the market. While on average 5% less of the population engages in IEA in CMEs; in MMEs, 8% of the population engages in IEA compared to LMEs. While the coefficient for EMEs is also negative, it is not significant. A further investigation reveals that the lower level of economic development of EMEs better explains their lower performance in terms of IEA compared to LMEs than the differences in the labor market structure between the two clusters. It is important to note that IEA captures only those entrepreneurs who report their product as a new product to the market; thus, this subjective indicator can be seen as reflecting the originality of the innovation more than the innovativeness of the firm. When we look at the actual birth of firms in high-tech sectors, a more straightforward and objective measure of the innovativeness of new ventures, Model 3 reveals that CMEs perform as well as LMEs, whereas both MMEs and EMEs have, on average, almost 9% fewer new ventures in high-tech sectors compared to LMEs. Model 4 hints at a potential channel through which CMEs and LMEs can perform equally well. It shows that the main feature that distinguishes CMEs from LMEs is not the level of innovativeness of entrepreneurial activity but the type of innovation and how innovation is achieved. In CMEs, employees seem to be an important contributor to the innovation process in the organization (Model 4). This is likely to be result of the favorable working conditions in wage employment due to the regulated wage setting and high social security, whereas moderate labor regulation provides the flexibility to adjust to the costs attached to innovation, which distinguish CMEs both from EMEs and MMEs. These findings are in line with those of Dilli *et al.* (2018), who demonstrate that CMEs are the second most innovative country group after LMEs. Model 5 in Table 4 illustrates that, compared with LMEs, MMEs and CMEs have significantly fewer numbers of entrepreneurs with high growth aspirations, which is likely the result of higher labor costs. EMEs, on the other hand, outperform the other clusters, including the LMEs, in terms of the number of entrepreneurs with growth aspirations, which is likely the result of their comparative advantage in cheap labor.

Having identified the comparative (dis)advantages of each institutional constellation in terms of entrepreneurial activity (also summarized in Table 4), we now turn to whether and how the changes in the underlying labor market institutions are linked to the different forms of entrepreneurial activity. For this, we look at the results of the interaction terms and the figures on the marginal effects that are summarized in Table 4. Overall, this table illustrates that in each of the four institutional constellations, the changes in each dimension of the labor market institutions exhibit varying links with the different forms of entrepreneurial activity.

In CMEs, more regulation in the labor market is associated with an ~2% increase in TEA activity. Such an increase, however, is however likely to be observed among solo self-employed and necessity-driven entrepreneurs, as Table 4 also shows that deregulation of the labor market is not associated with higher Schumpeterian-type entrepreneurial activity. This closely corresponds with the Dutch experience, where labor flexibilization policies and a reduction in the tax burden in the last two decades have resulted in a substantial increase in

solo self-employed workers, of whom only a very small proportion have the ambition to grow their business and introduce new products or product-market combinations (Liebregts, 2016). Moreover, a more regulated wage-setting environment seems to have two opposite effects on IEA. On the one hand, it is associated with a decrease in IEA, which introduces a new product to the market. Seeing that CMEs have a comparative advantage in EEA and perform as well in the establishment of new ventures in high-tech sectors, a better strategy for CME economies could be to centralize wage bargaining, at least at the industry level, as more centralized wage-setting institutions seem to be associated with an increase in EEA. In all the CME economies except Germany, wage-setting institutions have become decentralized in the last decade. The same period also corresponds to a slight decline in EEA in many of the CMEs. Providing more social security, especially through government social spending directed at new ventures in high-tech sectors, can provide an alternative tool to increase the number of new ventures in high-tech sectors. For instance, the establishment of the Danish Growth Fund, a government investment fund that uses pension funds to provide finances to innovative small-medium companies (SMEs), has resulted in the establishment of many new initiatives in the last few years (OECD, 2015).

Similar to CMEs, increasing employment protection for permanent employment in MMEs is likely to promote TEA entrepreneurship, albeit mainly among necessity-driven entrepreneurs, because greater employment protection does not seem be linked to an increase in any of the indicators of IEA in Table 4. Rather, Table 4 indicates that a better strategy for MMEs to support new ventures in high-tech sectors could be to have more regulated wage setting and social security to make employment conditions more attractive and contribute to entrepreneurial activity. Such a change, however, also implies a tradeoff between new ventures in high-tech sectors supported by higher EEA and more IEA introducing new products to the market. Given that the decentralized wage-setting institutions would have a more limited impact on stimulating competitive salary scales and high wages in the context of MMEs compared to LMEs as well as fewer resources to invest in costly new product development and a smaller skilled labor force (Amable, 2003), following a similar strategy to that of CMEs could more beneficial. Moreover, given the more limited active labor programs and less-centralized wage-setting institutions, providing more continuity in jobs and skills through not only permanent but also temporary contacts, which provides flexibility at similar levels to EMEs and LMEs, can also stimulate EEA (Appendix Table A4 and Figure B).

In the context of EMEs, increased social security is associated with higher TEA but lower innovative and HGA entrepreneurial activity. Thus, it is likely to mainly increase necessity-driven entrepreneurial activity. One possible explanation is that in the context of EMEs, higher social security can provide a safety net for businesses at the time of failure. Another possible explanation is the organization of social support system that stimulates self-employment among the unemployed. For instance, such social assistance was introduced in Hungary and Poland in the 1990s (O'Leary, 1999). The distribution and type of governmental policies that stimulate entrepreneurial activity is an issue worthy of attention in future studies. Higher social security will likely increase wages and labor costs, which would likely make EMEs less attractive for foreign direct investment and multinational companies, which in turn would result in fewer opportunities for the pursuit of IEA. Moreover, similar to MMEs, more centralized wage-setting institutions and more security in temporary employment can support the establishment of new ventures in high-tech sectors (Appendix Table

A4 and Figure B). However, in the context of EMEs, this increase in innovative activity as a result of more centralized wage-setting institutions and more security in temporary employment seems to occur through an alternative channel, not through increased EEA. The alternative channels through which centralized wage bargaining can stimulate innovation as well as the drivers of EEA in the EME context are also worthy topics for future studies to explore.

In LMEs, which is our reference group, the figures on the marginal terms show that strict labor regulations, wage market regulations and higher social security have either a small or negative impact on both the overall supply of entrepreneurs and IEA. Thus, in line with our hypotheses, flexibilization and deregulating policies are likely to work only in the context of the UK and Ireland in Europe, which have the institutional characteristics of a liberal market economy like the USA. For the other European economies with different institutional structures, flexibilization policies have a limited or even negative impact on IEA.

4.1 Robustness checks

In this section, we discuss the results of further robustness checks. One possible explanation for our results is that LMEs and CMEs are not only more economically developed are but also more technologically advanced and innovative than MMEs and EMEs. Table A5 uses two indicators, one on the share of social spending in research and development and another on the share of firms engaged in innovation in an economy, as alternative controls to account for this possibility. Even when these indicators are controlled for, the results show that the coefficients of EMEs and MMEs remain significant and similar in size to those presented in Table 3, hinting at the primary role of institutions independent of economic factors.

Next, we regress the underlying indicators of labor market institutions (Table A6). Table A6 indicates that employment protection legislation for permanent employment is relevant for TEA, IEA and HGA, whereas regulation for temporary employment is particularly important for new ventures in high-tech sectors, EEA and HGA. Among the wage-setting institutions, the level of coordination is relevant for TEA and IEA, whereas higher union finances matter for IEA and HGA, and union density matters for EEA and HGA. Regarding social security arrangements, social spending in labor followed by unemployment and minimum pension replacement rates are relevant for different indicators of IEA.

We also reclassify Italy as a CME according to the cluster analysis of the labor market institutions (Supplementary Figure S1 and Table S1). The results from this analysis support those from the analyses presented above, with a few exceptions. One difference is that the difference between LMEs and MMEs in IEA becomes insignificant, implying that Italy is performing particularly worse in this form of entrepreneurial activity.

5. Discussion and conclusion

In recent decades, the importance of flexible labor market institutions for entrepreneurial activity has been widely discussed in the literature. However, the entrepreneurship literature has devoted less attention to the relevance of the complementarities of institutions in explaining the links between labor market institutions and different forms of entrepreneurial activity. Considering these complementarities, this research demonstrated how changes in different labor market institutions have varying links with the different forms of entrepreneurial activity in 20 Western economies.

We found that the four varieties of institutional constellations in labor market institutions come together with the varieties of entrepreneurship, also supporting the findings of Dilli *et al.* (2018). While the labor market structure of LMEs has a comparative advantage in all forms of entrepreneurial activity, EMEs perform well in both the supply of entrepreneurs and entrepreneurs with high growth aspirations, but this is not reflected in the IEA (which introduces a new product to the market), establishment of firms in high-tech sectors or entrepreneurial employment activity. In CMEs, despite the lower number of entrepreneurs, the share of new ventures in high-tech sectors is comparable to that in LMEs. CMEs also have a clear comparative advantage in EEA. MMEs have moderate levels of entrepreneurial activity, but the majority of the entrepreneurs engage in non-innovative types of entrepreneurial activity. Thus, the different combinations of labor market institutions support different forms of entrepreneurial activity. This means that before altering institutions to stimulate entrepreneurial activity, it is important to consider the type of entrepreneurial activity that is desired.

Moreover, our findings highlight that there are a variety of approaches that can be followed to achieve the goal of a more entrepreneurial society in Europe. In other words, our findings highlight that one-size-fits-all approaches that target changing single labor market institutions are not suitable. In the context of the institutional constellations that characterize the majority of the European countries, the flexibilization and deregulation policies have limited and, in many cases, negative implications for innovative types of entrepreneurial activity. The fact that a change in the underlying institutions is not related to entrepreneurial outcomes in many cases hints at the importance of either following tailored policy strategies focused on institutional aspects other than labor, such as increasing access to finance or cultural factors or attempting to change all the dimensions of the labor market institutions together. However, in both cases, there is need for further research to study the implications of this change by considering together the different dimensions of institutional constellations, such as knowledge, financial structure and others. Given that CMEs, which are characterized by moderate labor market institutions, centralized wage-setting institutions and high social security, perform well in IEA, CMEs can provide a model for MMEs and EMEs, which show more similarities to CMEs than LMEs in many respects. Another reason to conduct such research is to consider the implications of policies, such as the effects of flexibilizing labor market institutions on different societal outcomes, such as increasing inequality.

The current study also calls for other avenues for future research. The indicators of labor market institutions provide a snapshot of the existing institutional arrangements, some of which are more relevant for entrepreneurial activity than others. For instance, the employment protection legislation indicator does not reflect the variety in the execution of the rules. For instance, Swedish reform in 2001 made it possible for firms with fewer than 11 employees to exclude two from the last-in-first-out principle in case of layoffs (Bornhäll *et al.*, 2017), which gives less incentive to small business owners to grow their businesses. Another example is the variety of policies, such as using pension funds as a source for finance for entrepreneurs, as in the case of Denmark. Moreover, a challenge of the current study is the lack of historical data capturing the various forms of entrepreneurial activity. Such a long-term perspective is desirable to capture the shift between the liberal and coordinated market economies that occurred in the first half of the twentieth century and the implications of this shift for economic performance. The implications of the institutional constellations for gender differences in entrepreneurial activity also deserves attention, as the

same institutional arrangements generally have varying impacts on male and female entrepreneurs. For instance, according to Estévez-Abe (2006), while high employment protection promotes employers' investments in male human capital, it exacerbates employers' discrimination against women. This is because firm-specific skills present high risks to women, who are likely to interrupt their careers due to family-related contingencies. As 'outsiders', women who experience discrimination in wage labor might decide to start new firms out of necessity more often than men. Another important avenue for future research is to study the origins of these clusters, which would facilitate a better understanding of both the challenges faced by each cluster of countries and how to overcome them. These issues are for future studies to explore.

Supplementary material

Supplementary material is available at *SOCECO* online.

Acknowledgements

This work is part of the European Commission 2020 Horizon project 'Financial and Institutional Reforms to build an Entrepreneurial Society (FIRES) in Europe'. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 649378. I am grateful for the useful comments and suggestions from Magnus Henrekson, Niklas Elert, Andrea Herrmann, and Mark Sanders, the participants of the IWH-Workshop 'Entrepreneurship and the Labor Market' and the three anonymous referees of Socio-Economic Review. This article reflect only the author's view and the Agency is not responsible for any use that may be made of the information it contains

References

Acs, Z. J., Autio, E. and Szerb, L. (2014) 'National Systems of Entrepreneurship: Measurement Issues and Policy Implications', *Research Policy*, **43**, 476–494.

Akkermans, D., Castaldi, C. and Los, B. (2009) 'Do "Liberal Market Economies" Really Innovate More Radically than "Coordinated Market Economies"?', *Research Policy*, **38**, 181–191.

Amable, B. (2003) *The Diversity of Modern Capitalism*, Oxford, Oxford University Press.

Arenius, P. and Minniti, M. (2005) 'Perceptual Variables and Nascent Entrepreneurship', *Small Business Economics*, **24**, 233–247.

Arentz, J., Sautet, F. and Storr, V. (2013) 'Prior-Knowledge and Opportunity Identification', *Small Business Economics*, **41**, 461–478.

Ardichvili, A., Cardozo, R., and Ray, S. (2003) 'A Theory of Entrepreneurial Opportunity Identification and Development', *Journal of Business Venturing*, **18**, 105–123.

Audretsch, D. (2007) *The Entrepreneurial Society*. Oxford: Oxford University Press.

Baumol, W. J. (1990) 'Entrepreneurship: Productive, Unproductive, and Destructive', *Journal of Political Economy*, **98**, 893–921.

Boettke, P. J., Coyne, C. J. and Leeson, P. T. (2008) 'Institutional Stickiness and the New Development Economics', *American Journal of Economics and Sociology*, **67**, 331–358.

Boettke, P. J. and Coyne, C. J. (2009) 'Context Matters: Institutions and Entrepreneurship', *Foundations and Trends in Entrepreneurship*, **5**, 135–209.

Bornhäll, A., Daunfeldt, S.-O. and Rudholm, N. (2017) 'Employment Protection Legislation and Firm Growth: Evidence from a Natural Experiment', *Industrial and Corporate Change*, **26**, 169–185.

Braunerhjelm, P., Acs, Z. J., Audretsch, D. B., and Carlsson, B. (2010) 'The Missing Link: Knowledge Diffusion and Entrepreneurship in Endogenous Growth', *Small Business Economics*, **34**, 105–125.

Braunerhjelm, P. and Henrekson, M. (2015) 'An Innovation Policy Framework: Bridging the Gap between Industrial Dynamics and Growth.' IFN Working Paper No. 1054, accessed at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2993108 on 15 May 2019.

Bruce, D. and Mohsin, M. (2006) 'Tax Policy and Entrepreneurship: New Time Series Evidence', *Small Business Economics*, **26**, 409–425.

Bruton, G., Ahlstrom, D. and Han-Lin, Li. (2010) 'Institutional Theory and Entrepreneurship: Where are we Now and Where do we Need to Move in the Future?', *Entrepreneurship Theory and Practice*, **34**, 421–440.

Cazes, S. and Verick, and S. (2010) 'What Role for Labor Market Policies and Institutions in Development? Enhancing Security in Developing Countries and Emerging Economies.' Employment Working Paper No. 67, accessed at https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_150629/lang–en/index.htm on 15 May 2019.

Dahl, C. M., le Maire, D. and Munch, J. R. (2013) 'Wage Dispersion and Decentralization of Wage Bargaining', *Journal of Labor Economics*, **31**, 501–533.

Davidsson, P. and Henrekson, M. (2002) 'Determinants of the Prevalance of Start-Ups and High-Growth Firms', *Small Business Economics*, **19**, 81–104.

Dilli, S., Elert, N. and Herrmann, A. (2018) 'Varieties of Entrepreneurship: Exploring the Institutional Foundations of Different Types through "Varieties of Capitalism" Arguments', *Small Business Economics*, **51**, 293–320.

Estrin, S., Korosteleva, J. and Mickiewicz, T. (2013) 'Which Institutions Encourage Entrepreneurial Growth Aspirations?', *Journal of Business Venturing*, **28**, 564–580.

Estévez-Abe, M. (2006) 'Gendering the Varieties of Capitalism. A Study of Occupational Segregation by Sex in Advanced Industrial Societies', *World Politics*, **59**, 142–175.

European Commission. (2013) *Entrepreneurship 2020 Action Plan: Reigniting the Entrepreneurial Spirit in Europe*. Brussels: Commission of the European Communities.

Eurostat. (2008) NACE Rev. 2. Statistical classification of economic activities in the European Community, accessed at https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-RA-07-015 on 15 May 2019.

Eurostat. (2017) 'Business Demograrphy database'. Accessed at https://ec.europa.eu/eurostat/web/structural-business-statistics/entrepreneurship/business-demography on 15 May 2019.

Global Entrepreneurship Monitor. (2017) 'GEM 2007 - 2017 NES Global Key Indicators'. Accessed at https://www.gemconsortium.org/data/sets on 15 May 2019.

Global Entrepreneurship and Development Institute (2019). '2018 Global Entrepreneurship Index'. Accessed at https://thegedi.org/global-entrepreneurship-and-development-index/ on 15 May 2019.

Golpe, A. A., Millán, J. M. and Román, C. (2008) 'Labor Market Institutions and Entrepreneurship'. In Congregado, E. (ed.) *Measuring Entrepreneurship*, New York, Springer US, International Studies in Entrepreneurship, pp. 279–296.

Hall, P. A. and Soskice, D. (2001) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Oxford, Oxford University Press.

Hall, P. A. and Thelen, K. (2008) 'Institutional Change in Varieties of Capitalism', *Socio-Economic Review*, **7**, 7–34. –

Hassel, A. (2014). 'Adjustments in the Eurozone: Varieties of Capitalism and the Crisis in Southern Europe', *SSRN Scholarly Paper*, Rochester, NY, Social Science Research Network.

Henrekson, M. (2005) 'Entrepreneurship: A Weak Link in the Welfare State?', *Industrial and Corporate Change*, **14**, 437–467.

Henrekson, M. (2014) 'How Labor Market Institutions Affect Job Creation and Productivity Growth.' IZA World of Labor No. 38, accessed at https://wol.iza.org/articles/how-labor-market-institutions-affect-job-creation-and-productivity-growth/long on 15 May 2019.

Henrekson, M. and Sanandaji, T. (2014) 'Small Business Activity Does Not Measure Entrepreneurship', *Proceedings of the National Academy of Sciences*, **111**, 1760–1765.

Henrekson, M., Johansson, D. and Stenkula, M. (2010) 'Taxation, Labor Market Policy and High-Impact Entrepreneurship', *Journal of Industry, Competition and Trade*, **10**, 275–296.

Herrmann, A. M. and Peine, A. (2011) 'When "National Innovation System" Meet "Varieties of Capitalism" Arguments on Labor Qualifications: On the Skill Types and Scientific Knowledge Needed for Radical and Incremental Product Innovations', *Research Policy*, **40**, 687–701.

Hessels, J., Van Stel, A. J., Brouwer, P. and Wennekers, S. (2007) 'Social Security Arrangements and Early-Stage Entrepreneurial Activity', *Comparative Labor Law & Policy Journal*, **28**, 743–774.

Hessels, J., van Gelderen, M. and Thurik, R. (2008) 'Entrepreneurial Aspirations, Motivations, and Their Drivers', *Small Business Economics*, **31**, 323–339.

Kanniainen, V. and Leppämäki, M. (2009) 'Union Power, Entrepreneurial Risk, and Entrepreneurship', *Small Business Economics*, **33**, 293–302.

Kanniainen, V. and Vesala, T. (2005) 'Entrepreneurship and Labor Market Institutions', *Economic Modelling*, **22**, 828–847.

Kılıçaslan, Y. and Taymaz, E. (2008) 'Labor Market Institutions and Industrial Performance: An Evolutionary Study', *Journal of Evolutionary Economics*, **18**, 477–492.

King, G., Honaker, J., Joseph, A. and Scheve, K. (2001) 'Analyzing Incomplete Political Science Data: An Alternative Algorithm for Multiple Imputation', *American Political Science Review*, **95**, 49–69.

Kleinknecht, A. (1998) 'Is Labor Market Flexibility Harmful to Innovation?', *Cambridge Journal of Economics*, **22**, 387–396.

Kleinknecht, A., Naastepad, C. W. M., Storm, S. and Vergeer, R. (2012) 'Labor Market Rigidities Can Be Useful. A Schumpeterian View'. In Fadda, S. and Tridico, P. (eds) *Financial Crisis, Labor Markets and Institutions*, London, Routledge, pp. 175–191.

Kleinknecht, A., van Schaik, F. N. and Zhou, H. (2014) 'Is Flexible Labour Good for Innovation? Evidence from Firm-Level Data', *Cambridge Journal of Economics*, **38**, 1207–1219.

Liebregts, W. (2016) 'Institutional Explanations for Patterns of Entrepreneurial Activity: The Case of the Dutch Task Market'. FIRES Working Paper, accessed at https://www.projectfires.eu/wp-content/uploads/2016/06/D5.3-Case-Study-on-Dutch-Solo-Self-Employment.pdf on 15 May 2019.

Lundin, R. A., Arvidsson, N., Brady, T., Ekstedt, E., Midler, C. and Sydow, J. (2015) *Managing and Working in Project Society: Institutional Challenges of Temporary Organizations*, Cambridge, Cambridge University Press.

Millán, A., Millán, J. M., Román, C., and van Stel, A. (2013) 'How Does Employment Protection Legislation Influence Hiring and Firing Decisions by the Smallest Firms?', *Economics Letters*, **121**, 444–448.

Nölke, A. and Vliegenthart, A. (2009) 'Enlarging the Varieties of Capitalism: The Emergence of Dependent Market Economies in East Central Europe', *World Politics*, **61**, 670–702.

O'Leary, C. (1999) 'Promoting Self Employment Among the Unemployed in Hungary and Poland'. Upjohn Institute Working Papers No. 55, accessed at https://research.upjohn.org/up_workingpapers/55/ on 15 May 2019.

OECD. (2013) *Strictness of Employment Protection – Individual and Collective Dismissals*, Paris, OECD Publishing.

OECD. (2015) *Financing SMEs and Entrepreneurs 2015*, Paris, Organisation for Economic Co-operation and Development.

OECD. (2016) 'Social Spending (indicator)'. Accessed at https://data.oecd.org/socialexp/social-spending.htm on 15 May 2019.

OECD. (2017a) 'Level of GDP Per Capita and Productivity (Indicator)'. Accessed at https://stats.oecd.org/index.aspx?DataSetCode=PDB_LV on 15 May 2019.

OECD. (2017b) 'Gross Domestic Spending on R&D (Indicator)'. Accessed at https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm on 15 May 2019.

OECD. (2017c) 'OECD, Main Science and Technology Indicators Database (Indicator)'. Accessed at https://www.oecd.org/sti/msti.htm on 15 May 2019.

Parker, S. C. (2007) 'Law and the Economics of Entrepreneurship.' SSRN Scholarly Paper. Rochester, NY, Social Science Research Network.

Parker, S. C., and Robson, M. T. (2004) 'Explaining International Variations in Self–Employment: Evidence from a Panel of OECD Countries', *Southern Economic Journal*, **71**, 287–301.

Román, C., Congregado, E. and Millán, J. M. (2011a) 'Chapter 7: The Role of Labor Market Institutions on Entrepreneurship Dynamics in Times of Crisis: Evidence from European Countries'. In Entrepreneurship and Global Competitiveness in Regional Economies: Determinants and Policy Implications, 22: 161–83. Advances in the Study of Entrepreneurship, Innovation & Economic Growth. West Yorkshire, Emerald Group Publishing Limited.

Román, C., Congregado, E. and Millán, J. M. (2011) 'Dependent Self–Employment as a Way to Evade Employment Protection Legislation', *Small Business Economics*, **37**, 363–392.

Scarpetta, S. (2014) 'Employment Protection', IZA World of Labor No. 12, accessed at http://wol.iza.org/articles/employment-protection.pdf

Schumpeter, J. A. (1934). *The Theory of Economic Development*, Cambridge, Harvard University Press.

Schneider, M. R., Schulze-Bentrop, C. and Paunescu, M. (2010) 'Mapping the Institutional Capital of High-Tech Firms: A Fuzzy-Set Analysis of Capitalist Variety and Export Performance', *Journal of International Business Studies*, **41**, 246–266.

Schneider, M. R. and Paunescu, M. (2012) 'Changing Varieties of Capitalism and Revealed Comparative Advantages from 1990 to 2005: A Test of the Hall and Soskice Claims', *Socio-Economic Review*, **10**, 731–753.

Scruggs, L., Jahn, D. and Kuitto, K. (2017) *Comparative Welfare Entitlements Dataset 2. Version 2014 – 03*, University of Connecticut & University of Greifswald. Accessed at http://cwed2.org/ on 15 May 2019.

Shane, S. (1993) 'Cultural Influences on National Rates of Innovation', *Journal of Business Venturing*, **8**, 59–73.

Simón-Moya, V., Revuelto-Taboada, L. and Guerrero, R. F. (2014) 'Institutional and Economic Drivers of Entrepreneurship: An International Perspective', *Journal of Business Research*, **67**, 715–721.

Stam, E. (2014) 'The Dutch Entrepreneurial Ecosystem'. SSRN Scholarly Paper, Rochester, NY, Social Science Research Network.

Stenholm, P., Acs, Z. J. and Wuebker, R. (2013) 'Exploring Country-Level Institutional Arrangements on the Rate and Type of Entrepreneurial Activity', *Journal of Business Venturing*, **28**, 176–193.

Storr, V. (2012) *Understanding the Culture of Markets*, New York, Routledge.

Tressel, T. and Scarpetta, S. (2004). 'Boosting Productivity via Innovation and Adoption of New Technologies: Any Role for Labor Market Institutions?' The World Bank Working Paper No. 406, accessed at http://documents.worldbank.org/curated/en/101151468762892644/Boosting-productivity-via-innovation-and-adoption-of-new-technologies-any-role-for-labor-market-institutions on 15 May 2019.

Ulku, H. and Muzi, S. (2015) 'Labor Market Regulations and Outcomes in Sweden: A Comparative Analysis of Recent Trends'. SSRN Scholarly Paper, Rochester, NY, Social Science Research Network.

Van Der Zwan, P., Verheul, I., Thurik, R. and Grilo, I. (2013) 'Entrepreneurial Progress: Climbing the Entrepreneurial Ladder in Europe and the United States', *Regional Studies*, **47**, 803–825.

Van Praag, M. and Van Stel, A. (2013) 'The More Business Owners, the Merrier? The Role of Tertiary Education', *Small Business Economics*, **41**, 335–357.

Van Stel, A., Storey, D. J. and Thurik, A. R. (2007) 'The Effect of Business Regulations on Nascent and Young Business Entrepreneurship', *Small Business Economics*, **28**, 171–186.

Viebrock, E. and Clasen, J. (2008) 'Flexicurity and Welfare Reform: A Review', *Socio-Economic Review*, **7**, 305–331.

Visser, J. (2013) 'Data Base on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, 1960-2011 (ICTWSS)', accessed at https://ideas.repec.org/p/euf/ecopap/0488.html on 15 May 2019.

Wennekers, S. and Thurik, R. (1999) 'Linking Entrepreneurship and Economic Growth', *Small Business Economics*, **13**, 27–56.

Wennekers, S., Thurik, R., Van Stel, A. and Noorderhaven, N. (2007) 'Uncertainty Avoidance and the Rate of Business Ownership across 21 OECD Countries, 1976–2004', *Journal of Evolutionary Economics*, **17**, 133–160.

Appendix A

Table A1. Overview and content of the variables

Variable	Measurement	Source and coverage
Entrepreneurship indicators		
Total early stage entrepreneurial activity (TEA)	It is the percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business	Global Entrepreneurship Monitor (GEM) (2017)
Innovative Entrepreneurial Activity (IEA)	It is the percentage of those involved in TEA who indicate that their product or service is new to at least some customers and that few/no businesses offer the same product	GEM (2017)
Birth in high-tech and high-medium-tech sectors	It is the share of firms, which are involved in high-technology and high-medium technology sectors classified according to NACE Rev. 2 categories	Eurostat (2008), Eurostat (2017)
Entrepreneurial Employee Activity (EEA)	It is the rate of involvement of employees in entrepreneurial activities, such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary	GEM (2017)
High-growth aspirations (HGA)	It is the percentage of total early stage entrepreneurs who have high expectations with respect to job creation (five and more employees in the next five years).	GEM (2017)
Labor market institutions		
Regulation of labor market		
Employment Protection Legislation (EPL) for permanent and temporary employment	Using eight different indicators (for a list: www.oecd.org/employment/protection), the two composite indices measure the strictness of regulation of individual dismissal of employees on regular/indefinite contract and temporary/fixed contracts.	OECD (2013)
Wage setting institutions		
Trade union density	It is defined as the percentage of employees who are members of a trade union.	From the ICTWSS database, compiled by Visser (2013)
Finance of trade union	It is a categorical variable where 1 is national union is dependent on financial contribution from local (workplace) unions; 2 is local and workplace branches have autonomous funds from direct member or employers contributions; and 3 is local and workplace branches are financed by the national union.	Visser (2013)
Coordination of wage bargaining	The indicator on coordination of wage setting has five categories: 1 refers to fragmented wage bargaining, confined largely to individual firms;	Visser (2013)

continued

Table A1. *Continued*

Variable	Measurement	Source and coverage
Entrepreneurship indicators		
	2 refers to mixed industry and firm-level bargaining; 3 indicates industry-level bargaining with informal centralization of bargaining by peak associations with government arbitration or intervention; 4 refers to centralized bargaining of industry level bargaining by peak associations with or without government coupled with high degree of union concentration; and 5 indicates a centralized bargaining of industry-level bargaining by a powerful and monopolistic union confederation coupled with coordination of bargaining by influential large firms.	
National minimum wage	The measure on national minimum wage is a categorical variable where 0 refers to no minimum wage; 1 refers to only in some sectors (occupations, regions, states); and 2 refers to national minimum wage in all sectors.	Visser (2013)
Wage setting institutions index	It is a composite index combining the indicators of wage setting institutions listed above and created with a factor analysis.	Author's calculation
Social security systems		
Sickness Replacement rates	This indicator is the replacement rate for singles. It is paid in the event of short-term non-occupational illness or injury.	The Comparative Welfare Entitlements Database (CWED), compiled by Scruggs *et al.* (2017).
Unemployment replacement rates	This indicator is the unemployment replacement rate for singles. It covers only national insurance provisions earned without income testing.	Scruggs *et al.* (2017)
Pension replacement rates	This indicator is the minimum pension replacement rate for singles and includes only mandatory public programs. Besides earnings-related mandatory public pensions, data is also provided for replacement rates of minimum pensions (i.e., for persons without working history).	Scruggs *et al.* (2017)
Social spending unemployment	It presents the share of public and private benefits with a social purpose grouped along unemployment such as cash benefits, early retirement and benefits in kind	OECD (2016)

continued

Table A1. *Continued*

Variable	Measurement	Source and coverage
Entrepreneurship indicators		
Social spending labor	It presents the share of public and private benefits with a social purpose grouped along active labor programmes such as direct job creation, startup incentives, employment incentives and training.	OECD (2016)
Social spending total	This comprises all kinds of cash benefits, direct in-kind provision of goods and services, and tax breaks with social purposes and measured as the share of GDP per capita.	OECD (2016)
Social security index	It is a composite index of social security combining the indicators on replacement rates and social spending. It is created using a factor analysis.	Author's calculation
Control variables		
Economic development	The level of economic development is captured by log of Gross Domestic Production (GDP) per capita income.	OECD (2017a)
Research and development (R&D)	The level of research and development is measured by the gross domestic expenditure on research and experimental development (GERD).	OECD (2017b)
Level of innovation	This indicator measures the share of product and/or process innovative firms of total firms, including abandoned or ongoing innovation activities (regardless of organizational or marketing innovation).	OECD (2017c)

Table A2. Correlation matrix

	EPL_p.	EPL_t	Wage	TUD	Ufin	Coor.	NMW	S.S.	URR	SRR	MPS	S.Un.	S.Lab.	S.Tot.	LME	CME	MME	EME	GDP	R&D	In.
EPL_permanent	1.00																				
EPL_temporary	0.43	1.00																			
Wagesetting	0.13	0.10	1.00																		
Trade Union Density	−0.02	−0.02	0.79	1.00																	
Union finances	0.08	0.15	0.74	0.35	1.00																
Coordination	0.13	0.15	0.85	0.59	0.61	1.00															
National Minimum Wage	−0.06	0.05	−0.74	−0.56	−0.46	−0.49	1.00														
Social Security	0.35	0.36	0.67	0.31	0.58	0.69	−0.38	1.00													
Unempl. Replacement Rate	0.36	0.39	0.34	0.02	0.49	0.36	−0.17	0.73	1.00												
Sickness Replacement Rate.	0.62	0.38	0.43	0.11	0.48	0.38	−0.38	0.53	0.40	1.00											
Minimum Pension Replacement Rate	0.00	0.20	0.19	0.23	−0.07	0.28	−0.01	0.29	0.23	0.03	1.00										
Social Expenditure Unemployment	0.01	0.28	0.42	0.25	0.31	0.57	0.05	0.65	0.35	0.10	0.19	1.00									
Social Expenditure Labor	0.17	0.11	0.59	0.39	0.39	0.60	−0.37	0.82	0.38	0.26	0.26	0.52	1.00								
Social Expenditure Total	0.18	0.44	0.52	0.15	0.49	0.47	−0.53	0.67	0.40	0.44	−0.00	0.43	0.46	1.00							
LME	−.71	−0.55	−0.39	−0.16	−0.38	−0.33	0.34	−0.59	−0.52	−0.87	−0.01	−0.19	−0.30	−0.46	1.00						
CME	0.04	−0.09	0.81	0.61	0.59	0.68	−0.68	0.65	0.36	0.46	0.30	0.31	0.59	0.44	−0.38	1.00					
MMEs	0.44	0.68	−0.22	−0.34	−0.06	−0.13	0.20	0.10	0.29	0.04	0.03	0.07	−0.09	0.28	−0.25	−0.52	1.00				
EMEs	0.13	−0.15	−0.47	−0.28	−0.36	−0.46	0.35	−0.43	−0.33	0.19	−0.44	−0.33	−0.40	−0.47	−0.18	−0.38	−0.24	1.00			
log (GDP)	−0.38	−0.13	0.47	0.27	0.38	0.43	−0.41	0.30	0.24	−0.19	0.35	0.13	0.29	0.27	0.25	0.51	−0.26	−0.66	1.00		
R&D	−0.25	−0.25	0.55	0.50	0.34	0.38	−0.60	0.40	0.23	−0.08	0.09	0.23	0.41	0.42	0.01	0.68	−0.39	−0.48	0.62	1.00	
Level of Innovation	0.26	0.06	0.60	0.38	0.42	0.59	−0.43	0.49	0.20	0.33	0.34	0.29	0.45	0.42	−0.18	0.62	−0.11	−0.54	0.46	0.40	1.00

Table A3. Results for regression analysis on the VoC framework, single labor market institutions and different forms of entrepreneurial activity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	TEA	TEA	TEA	IEA	IEA	IEA	Birth High-tech	Birth High-tech	Birth High-tech	EAA	EAA	EAA	HGA	HGA	HGA
CME	−4.63***	−1.75***	−1.86**	5.76	−5.84**	−16.54***	−1.16**	0.11***	0.08***	−0.23	−0.03	0.85	−5.11	−11.50***	−13.55***
	(−3.81)	(−3.85)	(−2.29)	(0.83)	(−2.18)	(−4.32)	(−2.46)	(3.18)	(5.04)	(−0.06)	(−0.03)	(0.99)	(−1.03)	(−11.17)	(−10.29)
MMEs	−6.14***	−0.68	−0.50	−5.58	−13.08***	−15.91***	−1.25***	0.01	0.04*	−5.02***	−3.43***	−3.57***	−3.11	−7.86***	−12.47***
	(−3.43)	(−0.64)	(−0.35)	(−0.66)	(−3.63)	(−3.57)	(−2.64)	(0.36)	(1.67)	(−3.05)	(−4.70)	(−2.73)	(−1.17)	(−4.48)	(−5.84)
EMEs	12.71***	4.27	12.12***	−29.54*	−12.20***	−25.79***	−1.40***	0.05	−0.00	1.55	−1.90	−5.23**	6.78	16.36**	−26.35*
	(3.05)	(0.91)	(3.17)	(−1.66)	(−2.64)	(−2.97)	(−3.19)	(0.79)	(−0.00)	(0.38)	(−1.31)	(−2.45)	(0.44)	(2.02)	(−1.61)
log (GDP)	6.26***	4.88**	5.39***	−9.86	−3.29	−4.81	−0.00	0.03	0.05	1.66	1.90	0.38	13.61**	13.33**	10.34***
	(3.22)	(2.03)	(2.76)	(−0.83)	(−0.31)	(−0.66)	(−0.07)	(0.61)	(0.89)	(0.65)	(0.93)	(0.14)	(1.94)	(2.43)	(3.46)
EPL	−2.04***			−1.88			−0.92***			0.22			2.11*		
	(−4.44)			(−0.55)			(−2.72)			(0.32)			(1.53)		
CME *EPL	2.02***			−3.57			0.92***			0.30			−1.92		
	(3.68)			(−1.02)			(2.72)			(0.17)			(−0.86)		
MMEs * EPL	3.23***			−0.23			0.92***			0.37			−2.47**		
	(6.35)			(−0.06)			(2.68)			(0.58)			(−2.19)		
EMEs * EPL	−1.89*			7.36			0.98***			−1.50			0.62		
	(−1.46)			(1.32)			(2.96)			(−1.13)			(0.13)		
Wage		−1.07			2.97**			−0.14***			−0.60			2.91***	
		(−1.09)			(1.80)			(−5.10)			(−1.31)			(12.42)	
CMEs*Wage		0.98			−5.79*			0.10***			2.63**			0.31	
		(0.93)			(−1.40)			(3.10)			(2.14)			(0.16)	
MMEs *Wage		−0.02			−7.77**			0.15***			−0.44			−0.49	
		(−0.01)			(−2.36)			(5.61)			(−0.63)			(−0.40)	
EMEs * Wage		0.77			−2.65			0.15***			−0.33			3.80	
		(0.17)			(−0.41)			(3.29)			(−0.20)			(0.51)	

continued

Table A3. *Continued*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	TEA	TEA	TEA	IEA	IEA	IEA	Birth High-tech	Birth High-tech	Birth High-tech	EAA	EAA	EAA	HGA	HGA	HGA
Social Sec.			−0.38			5.98***			−0.10***			−0.40			4.19***
			(−0.36)			(3.68)			(−5.83)			(−0.89)			(6.88)
CMEs * Social Sec.			−0.45			3.21			0.13***			1.08			−0.50
			(−0.38)			(0.58)			(3.86)			(0.88)			(−0.19)
MMEs* Social Sec.			−0.19			−3.85			0.07***			1.29**			−1.74
			(−0.13)			(−1.25)			(3.44)			(1.73)			(−0.90)
EMEs *Social Sec.			8.62**			−14.96*			0.03			−3.28			−37.50**
			(2.39)			(−1.70)			(1.18)			(−1.19)			(−2.19)
Cons.	−55.43***	−43.89**	−48.73**	141.60	73.66	93.45	1.38**	−0.26	−0.46	−10.11	−13.18	3.04	−108.88*	−101.65**	−67.92**
	(−2.71)	(−1.76)	(−2.40)	(1.12)	(0.66)	(1.20)	(2.03)	(−0.47)	(−0.79)	(−0.37)	(−0.61)	(0.11)	(−1.45)	(−1.76)	(−2.13)
Observations	179	179	179	111	111	111	126	126	126	102	102	102	179	179	179
Year FE	Yes	yes	yes	yes	yes	yes	yes	yes	Yes	yes	yes	yes	yes	yes	Yes
Adj. R^2	0.536	0.445	0.460	0.097	0.105	0.159	0.530	0.621	0.606	0.496	0.548	0.505	0.321	0.354	0.394

Notes: Absolute heteroskedasticity consistent *t*-values are reported below coefficients.
$^{*}P < 0.10$, $^{**}P < 0.05$, $^{***}P < 0.01$ (one sided).
Reference category is the LME group in the cluster variable. While the indicators on TEA and HGA are measured in the time period between 2001 and 2014, birth of firms in high-tech and medium-tech sectors is measured in the period between 2004 and 2014 and lacks information on the USA and Greece. IEA and EEA are measured from 2011 onwards.

Table A4. The VoC, labor market regulations for temporary employment and entrepreneurship

	(1) TEA	(2) IEA	(3) Birth in high-tech and high-medium tech	(4) EAA	(5) HGA
EPL_temporary	−4.92**	8.71*	−0.61***	−1.14**	16.27***
	(−1.77)	(1.65)	(−20.88)	(−2.16)	(8.25)
CME	−5.07***	5.72	−0.25***	−1.24	2.20
	(−2.87)	(1.11)	(−6.93)	(−0.85)	(0.78)
MMEs	−2.70	−19.58***	−0.30***	−6.14**	2.89
	(−0.61)	(−2.65)	(−20.69)	(−2.36)	(0.88)
EMEs	−2.53	−9.35*	−0.32***	−4.01***	−3.63
	(−0.91)	(−1.62)	(−12.90)	(−2.66)	(−0.47)
CME * EPL_temporary	5.17**	−13.44**	0.57***	2.20**	−17.85***
	(1.81)	(−2.31)	(17.43)	(2.20)	(−7.41)
MMEs * EPL_temporary	4.72*	−2.97	0.58***	1.71*	−16.87***
	(1.54)	(−0.51)	(21.69)	(1.71)	(−7.78)
EMEs *EPL_temporary	7.74***	−5.31	0.61***	1.51**	0.87
	(2.66)	(−0.97)	(16.76)	(2.32)	(0.20)
log (GDP)	4.42**	−1.16	0.11***	−0.18	16.69***
	(2.06)	(−0.19)	(3.55)	(−0.09)	(3.54)
Constant	−36.36*	44.94	−0.74**	9.88	−144.03***
	(−1.61)	(0.69)	(−2.31)	(0.45)	(−2.90)
Observations	179	111	126	102	179
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.465	0.206	0.703	0.511	0.423

Notes: Absolute heteroskedasticity consistent t−values are reported below coefficients.
*$P < 0.10$, **$P < 0.05$, ***$P < 0.01$ (one-sided).
Reference category is the LME group in the cluster variable. While the indicators on TEA and HGA are measured in the time period between 2001 and 2014, birth of firms in high-tech and high-medium-tech sectors is measured in the period between 2004 and 2014. IEA and EEA are measured from 2011 onwards.

Table A5. Additional controls with innovation and research and development

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	TEA	IEA	Birth in high-tech and high-medium tech	EEA	HGA	TEA	IEA	Birth in high-tech and high-medium tech	EAA	HGA
CME	−2.67**	−6.68**	−0.02	0.37	−7.92***	−2.07**	−4.67	−0.01	1.40	−6.30**
	(−1.78)	(−2.27)	(−0.59)	(0.46)	(−4.38)	(−2.21)	(−1.20)	(−0.35)	(1.28)	(−2.28)
MMEs	−2.88**	−5.32*	−0.09***	−3.70***	−9.54***	−2.56***	−6.91***	−0.10**	−3.87***	−10.22***
	(−2.40)	(−1.71)	(−2.57)	(−6.44)	(−4.21)	(−2.82)	(−2.61)	(−2.53)	(−4.98)	(−4.46)
EMEs	−0.24	−4.29	−0.08**	−2.24***	3.12	−0.53	−7.73***	−0.09**	−3.59***	1.18
	(−0.20)	(−1.27)	(−2.18)	(−3.32)	(0.89)	(−0.60)	(−3.55)	(−1.92)	(−3.98)	(0.33)
R&D	−0.33	2.67	0.01	0.49	1.41					
	(−0.54)	(1.22)	(0.76)	(0.98)	(1.11)					
Level of Innovation						−0.06**	−0.02	−0.00	−0.05	−0.05
						(−2.13)	(−0.18)	(−0.09)	(−1.13)	(−0.58)
Constant	8.28***	31.67***	0.16***	6.62***	31.84***	9.68***	37.22***	0.18***	9.22***	36.27***
	(5.75)	(7.39)	(4.04)	(7.30)	(7.75)	(7.76)	(7.87)	(2.75)	(4.68)	(8.75)
Observations	176	111	165	102	176	179	111	165	102	179
Time effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.345	0.118	0.508	0.518	0.275	0.384	0.070	0.500	0.530	0.269

Notes: Absolute heteroskedasticity consistent *t*-values are reported below coefficients.

*$P < 0.10$, **$P < 0.05$, ***$P < 0.01$ (one-sided).

Reference category is the LME group in the cluster variable. While the indicators on TEA and HGA are measured in the time period between 2001 and 2014, birth of firms in high-tech and medium-tech sectors is measured in the period between 2004 and 2014. EEA and IEA are measured from 2011 onwards.

Table A6. Underlying variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	TEA	TEA	TEA	IEA	IEA	IEA	Birth in High-tech	Birth in High-tech	Birth in High-tech	EEA	EEA	EEA	HGA	HGA	HGA
EPL_perm	−1.096**			−2.036**			−0.001			0.126			−2.530**		
	(−1.81)			(−2.12)			(−0.08)			(0.32)			(−2.41)		
EPL_temp	−0.179			−1.031			−0.034***			−0.898**			−1.670*		
	(−0.41)			(−0.59)			(−3.54)			(−2.37)			(−1.61)		
log (GDP)	−1.573	2.090*	0.977	1.101	8.504**	−4.613	0.107***	0.125**	0.138***	4.442***	4.753***	3.841***	−2.763	4.644	4.973**
	(−1.14)	(1.36)	(0.82)	(0.25)	(2.26)	(−1.00)	(4.57)	(2.08)	(3.31)	(3.18)	(3.66)	(2.54)	(−1.07)	(1.26)	(1.92)
Union Density		0.000			0.003			−0.000			0.080***			0.062*	
		(0.03)			(0.05)			(−0.17)			(4.09)			(1.35)	
Union_finances		−0.305			−9.249***			0.006			−1.530			−3.557*	
		(−0.45)			(−3.27)			(0.23)			(−1.32)			(−1.53)	
Coordination_ wagesetting		−0.802**			0.895*			−0.018			−0.111			−0.580	
		(−2.20)			(1.35)			(−1.02)			(−0.35)			(−0.80)	
National Minimum Wage		0.379			−0.581			−0.016			−0.136			0.820	
		(1.10)			(−0.55)			(−0.84)			(−0.31)			(0.91)	
Unempl. Rep.R._single			2.158			−8.959**						−3.076			−9.976**
			(1.12)			(−1.75)						(−1.20)			(−1.95)
Sickness Rep.R._single			−0.107			−16.614***			−0.039			−1.149			−1.458
			(−0.08)			(−3.01)			(−0.48)			(−0.55)			(−0.42)
Min. Pension Rep. R._single			−5.011***			18.496**			−0.159			2.012			−20.425*
			(−2.73)			(1.83)			(−1.06)			(0.52)			(−1.66)
S.Unemp.			−0.177			−0.029			−0.006			−0.174			0.012
			(−0.99)			(−0.05)			(−0.77)			(−0.49)			(0.03)

continued

Table A6. *Continued*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	TEA	TEA	TEA	IEA	IEA	IEA	Birth in High-tech	Birth in High-tech	Birth in High-tech	EEA	EEA	EEA	HGA	HGA	HGA
S. Labor			−0.445			4.204**			0.011			2.501**			2.958**
			(−1.08)			(2.34)			(0.52)			(2.23)			(2.01)
S.Total			−0.294***			0.479**			−0.001			−0.128			−0.656**
			(−3.93)			(2.02)			(−0.30)			(−1.20)			(−2.09)
Constant	24.470*	−12.770	12.142	26.433	−35.589	59.170*	−0.912***	−1.096**	−1.170***	−38.196***	−40.855***	−28.338**	65.441**	−10.700	18.830
	(1.70)	(−0.86)	(0.96)	(0.57)	(−0.90)	(1.33)	(−3.87)	(−1.91)	(−2.90)	(−2.69)	(−2.90)	(−2.18)	(2.51)	(−0.28)	(0.68)
Observations	179	179	179	111	111	111	96	96	96	102	102	102	179	179	179
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.200	0.285	0.441	0.079	0.238	0.315	0.493	0.263	0.276	0.305	0.506	0.426	0.151	0.051	0.224

Notes: Absolute heteroskedasticity consistent *t*-values are reported below coefficients.
$^*P < 0.10$, $^{**}P < 0.05$, $^{***}P < 0.01$ (one sided).
Reference category is the LME group in the cluster variable. While the indicators on TEA and HGA are measured in the time period between 2001 and 2014, birth of firms in high-tech and medium-tech sectors is measured in the period between 2004 and 2014. IEA and EEA are measured from 2011 onwards.

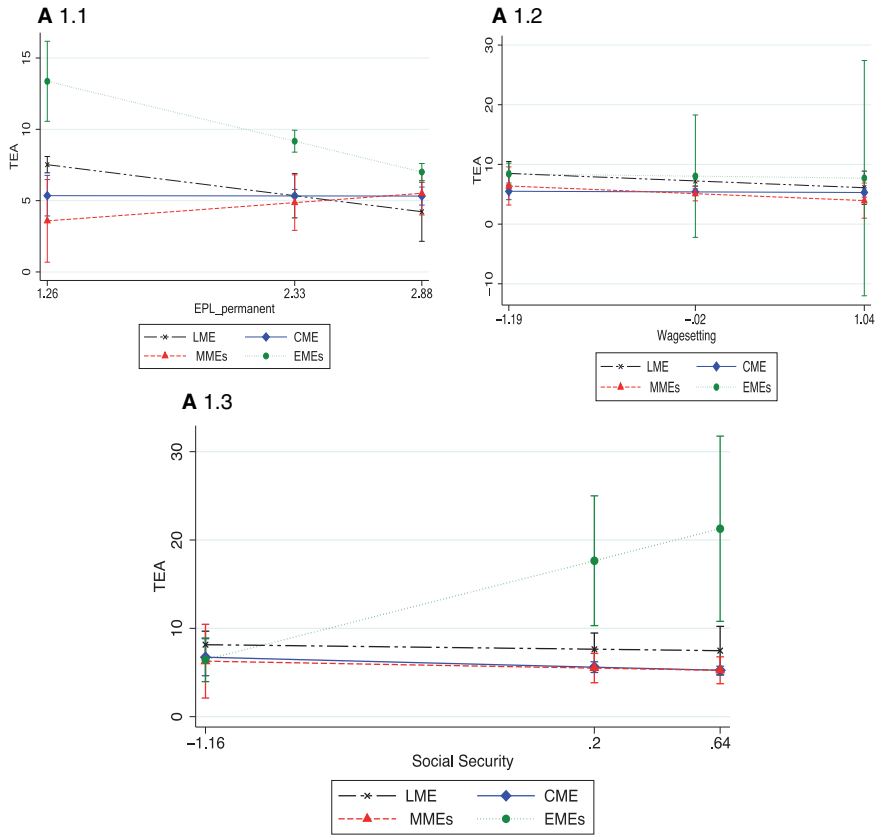

Figure A1. The relationship between labor market regulation, wage-setting, social security and TEA.

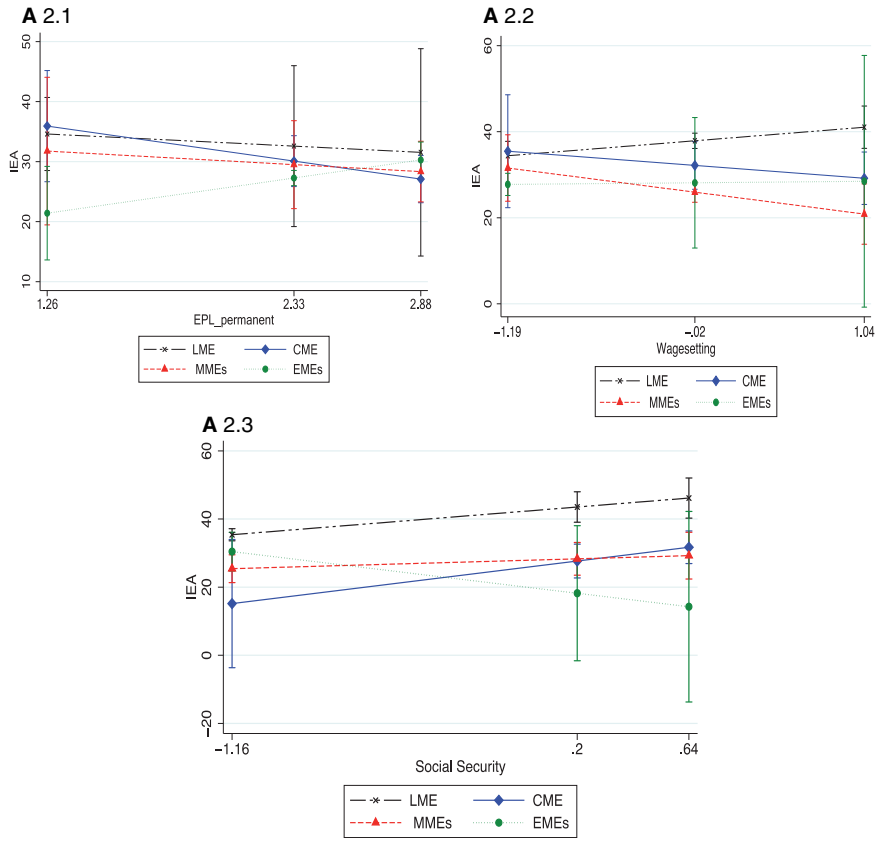

Figure A2. The relationship between labor market regulation, wage-setting, social security and IEA.

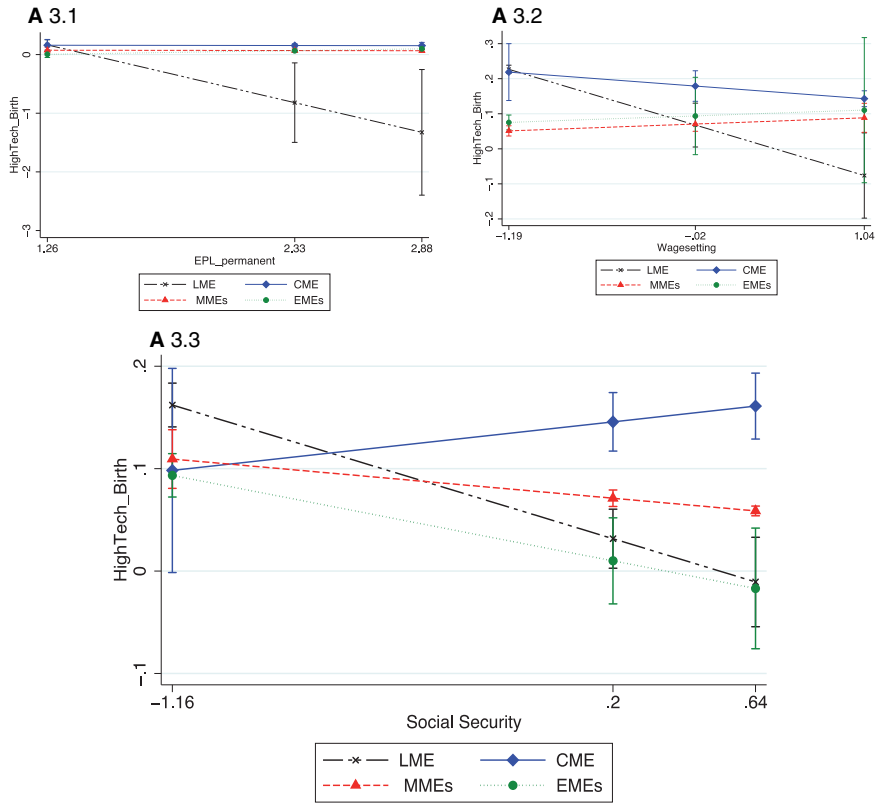

Figure A3. The relationship between labor market regulation, wage-setting, social security and births in high-tech and high-medium-tech sector.

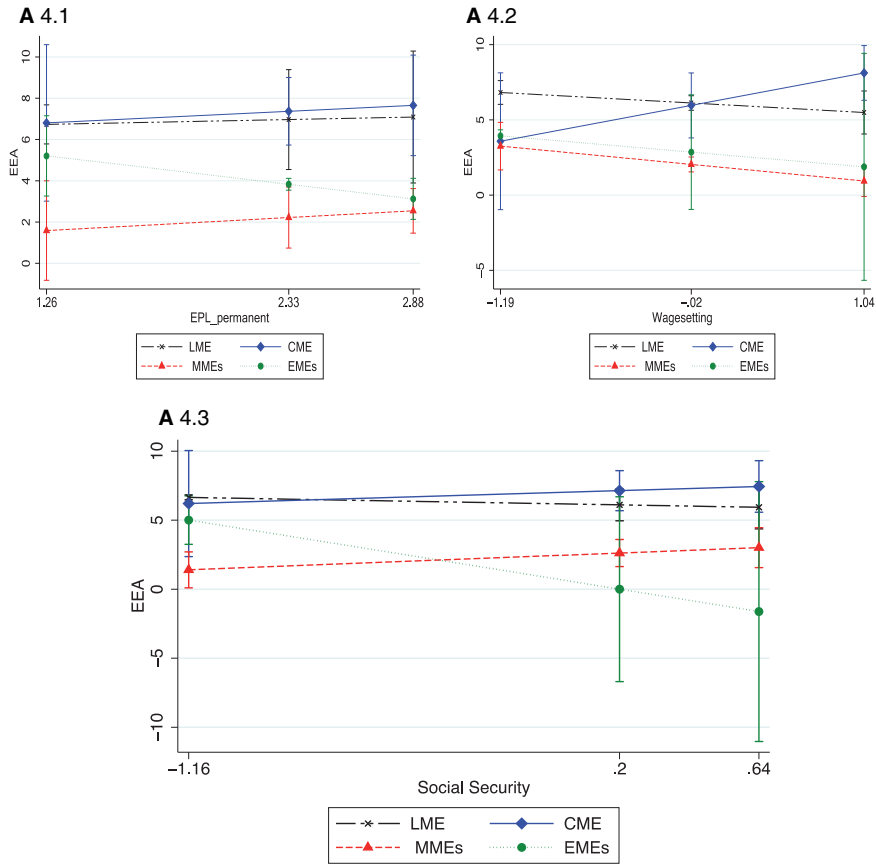

Figure A4. The Relationship between labor market regulation, wage-setting, social security and EEA.

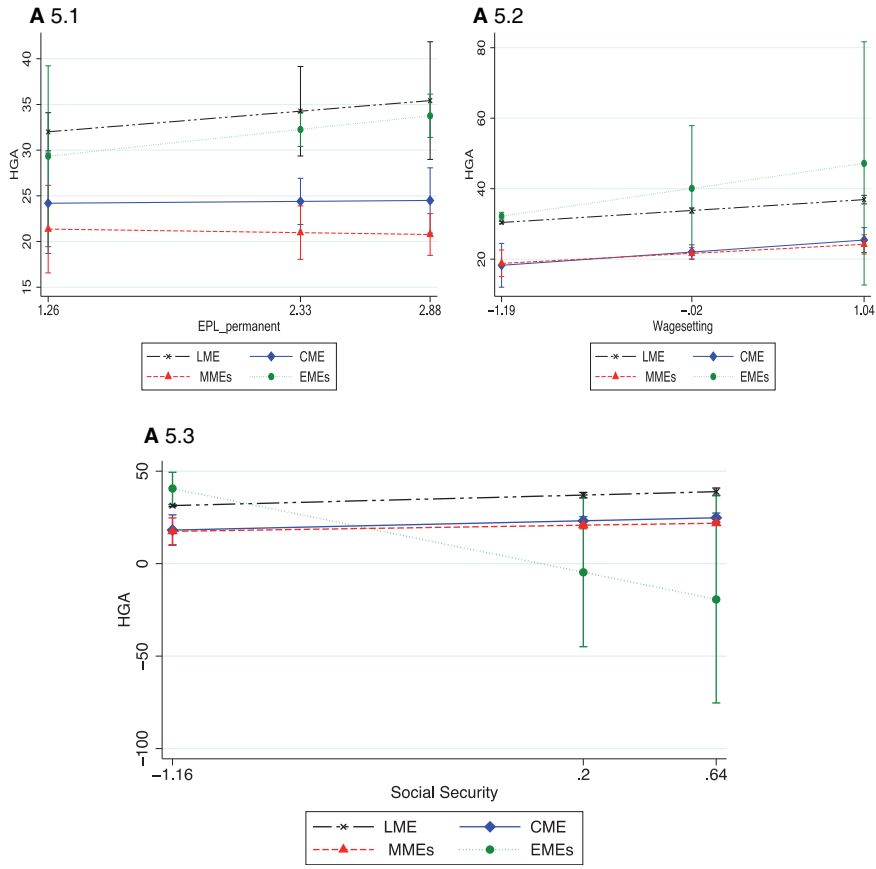

Figure A5. The relationship between labor market regulation, wage-setting, social security and HGA.

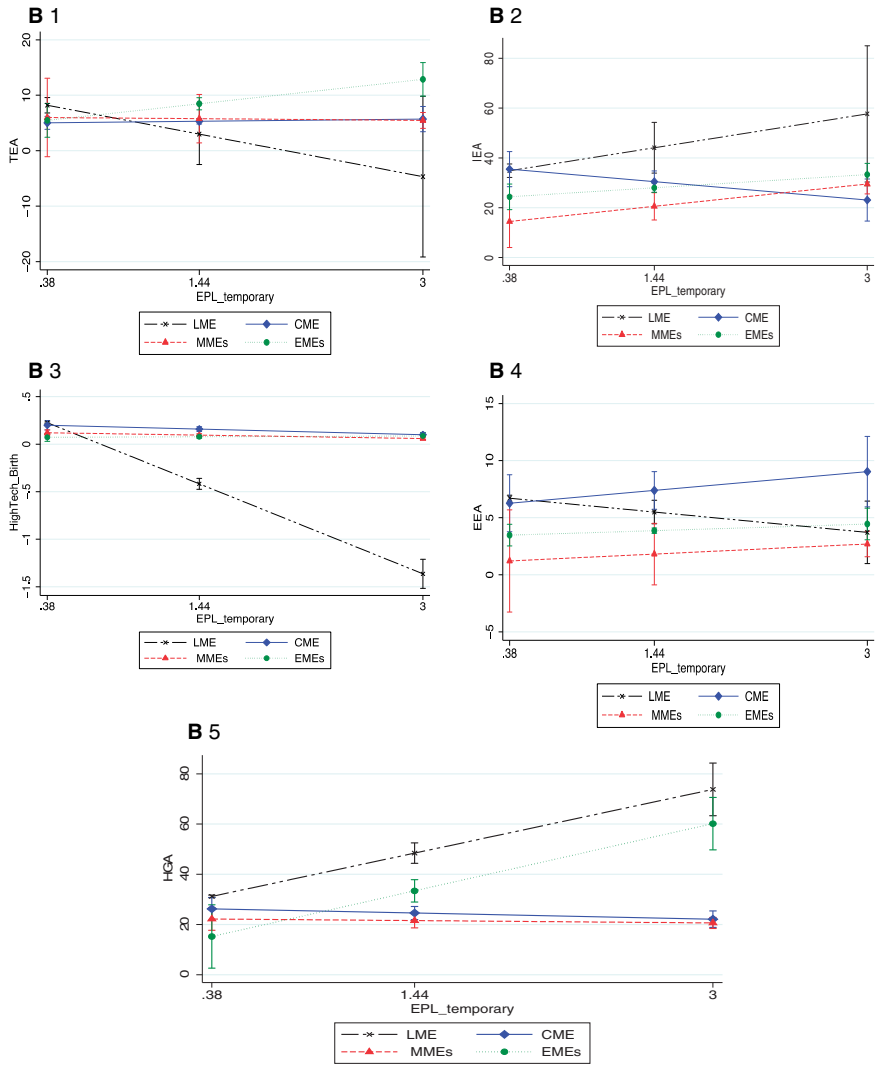

Figure B. The relationship between labor market regulations for temporary employment and different forms of entrepreneurship.