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Not All Firms Are Created Equal

SMEs and Vocational Training in the UK, Italy, and Germany

Chiara Benassi, Niccolo Durazzi, and Johann Fortwengel



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Abstract

Why do skill formation systems put SMEs at greater disadvantage in some countries than others vis-à-vis large employers? By comparing vocational education and training (VET) institutions and their differential effect on firms of different sizes across three countries (UK, Italy, and Germany), we show that the design of VET has profound implications for shaping the ability of SMEs to use institutions as resources. In particular, quasi-market institutions in the UK amplify SMEs' disadvantage, while non-market coordinating institutions in Italy and Germany narrow the gap between SMEs and large employers. By unpacking the comparative disadvantage of SMEs, we offer important nuances to the argument that institutions help firms coordinate their business activities in different varieties of capitalism.

Keywords: comparative political economy, firm size, small and medium-sized enterprises (SMEs), varieties of capitalism, vocational education and training (VET)

Zusammenfassung

Warum erfahren kleine und mittelständische Unternehmen (KMU) durch Berufsbildungssysteme mehr Nachteile als große Unternehmen und warum ist dieser Unterschied in manchen Ländern größer als in anderen? Wir vergleichen Ausbildungsinstitutionen und ihren unterschiedlichen Effekt auf Firmen verschiedener Größe in drei Ländern (Großbritannien, Italien und Deutschland). Dabei zeigen wir, dass die Art der Institutionen die Möglichkeit von Firmen, die vorhandenen Institutionen als Ressource zu nutzen, beeinflusst. Insbesondere verstärken die in Großbritannien vorherrschenden quasimarktlichen Institutionen den Nachteil von KMU, wohingegen nichtmarktliche Institutionen in Italien und Deutschland den Unterschied zu großen Unternehmen verringern. Durch das Aufzeigen des komparativen Nachteils von KMU leistet unser Papier einen Beitrag zu einer nuancierteren Sichtweise der Rolle von Institutionen in verschiedenen Spielarten des Kapitalismus.

Schlagwörter: Berufsbildung, kleine und mittlere Unternehmen (KMU), Spielarten des Kapitalismus, Unternehmensgröße, Vergleichende Politische Ökonomie

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Not All Firms Are Created Equal: SMEs and Vocational Training in the UK, Italy, and Germany

1 Introduction

A vast comparative political economy (CPE) literature documented and explained variation in vocational education and training (VET) institutions across countries and their effect on firms' training provision (Busemeyer and Trampusch 2011; Hall and Soskice 2001; Thelen 2004). Yet, much of the "original" CPE literature has neglected the role of firm-level characteristics, including organizational size, in shaping the relationship between institutions and firms (see Hancké, Rhodes, and Thatcher 2007). This shortcoming has been partly addressed by a growing stream of literature that analysed differences across firms – and ensuing differences in policy preferences – to explain institutional change in VET systems (Culpepper 2007; Thelen and Busemeyer 2012; Trampusch 2010). However, how institutions affect the ability of firms of different size to recruit workers with appropriate skills and/or to develop their workforce skills is still much less understood. This study seeks to tackle this research problem by paying special attention to the role of organizational size in affecting the relationship between (VET) institutions and firm (training) behaviour.

SMEs typically find it more difficult than large employers to acquire the skills they need either because they cannot attract talent from external labour markets or because they do not have the resources to develop these skills internally through training (OECD 2019; Wilkinson 1999). However, we argue and demonstrate empirically that institutions can reduce or amplify SMEs' disadvantage. The British quasi-market VET system, in particular, fails to provide an adequate supply of workers with technical skills that SMEs could hire from the external market. In parallel, British SMEs also face high barriers to developing skills through the apprenticeship system. Such barriers take the form of high training costs that in turn dampen SMEs' participation in the apprenticeship system (see Section 3). Indeed, British SMEs face higher expenditure per trainee than their large counterparts, which is a puzzling observation given that the literature has both theorised and showed empirically that large employers generally spend more than SMEs on training. How can we explain the British case?

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To answer our research question, we bring together insights from the CPE literature on VET (see Busemeyer and Trampusch 2012) and the management literature on organizational size (see Josefy et al. 2015). We identify (1) access to skills and (2) development of skills as two critical dimensions that capture the overall ability of firms to ensure the availability of skills. Our analysis shows that these two dimensions are analytically distinct and that differentiating between them enables us to engage in a fine-grained theorisation of the institutional sources of the disadvantage of SMEs in different varieties of capitalism.

Based primarily on document analysis and thirty-seven semi-structured interviews, we conduct an in-depth analysis of the UK case, coupled with shadow case studies of Italy and Germany. According to the literature, the three countries exhibit distinct models of skill formation underpinned by distinct coordination mechanisms: market-led coordination in the UK, business-led coordination in Germany, and state-led coordination in Italy (Busemeyer and Trampusch 2012). We show that various mechanisms of non-market coordination that are present in Italy and Germany – but not in the UK – work toward levelling the playing field for SMEs. Non-market institutions support SMEs by facilitating either their *access* to skills or their participation in skill *development* by keeping training costs for SMEs (relatively) low. This stands in sharp contrast to the British case, where quasi-market institutions put SMEs at a systematic disadvantage.

By unpacking the comparative institutional disadvantage of SMEs vis-à-vis large employers, we also show that national VET institutions are significantly more heterogeneous than commonly assumed in the CPE literature. We find that institutions do not simply function indiscriminately as coordination mechanisms, but that they have a mediating effect on inequalities between firms of different size. Furthermore, the institutional mechanisms in place for SMEs do not necessarily reflect the dominant modes of coordination in each of the models of capitalism under study. In particular, we find state intervention to be an important feature of the German and British VET systems – despite these two systems being commonly characterised as, respectively, business- and market-led in the literature. Equally, decentralised cooperation between firms, schools, and local authorities in the form of local networks play a significant role in the Italian system – traditionally identified as centralised and state-led.

The article is organized as follows. The following section discusses the CPE literature on employers and VET, while Section 3 presents our empirical puzzle on the gap between SMEs and large employers. After the methodology section, we present our findings from the case study of Britain and the shadow cases of Italy and Germany. The final section discusses the findings and derives their theoretical implications.

2 Institutions, firms, and training

The CPE literature has produced a rich body of work that analyses skill formation systems across countries (see Busemeyer and Trampusch 2012 for an overview). Before outlining how our analysis builds on this scholarship, we review here the two main streams of research, focusing on the role that each approach assigns to institutions and firms: the original body of work of varieties of capitalism (VoC) scholars and a second – more recent – strand of research on the role of business for institutional change in the VET arena.

The original VoC scholarship sought “to bring firms back into the centre of the analysis of comparative capitalism” (Hall and Soskice 2001, 4). In the realm of training, VoC scholars referred to the institutional context to explain why firms in some countries are active and successful at training, while “failure of training” is pervasive in other countries (Culpepper 2001; Estevez-Abe, Iversen, and Soskice 2001; Finegold and Soskice 1988; Hall and Soskice 2001; Thelen and Culpepper 2007).

The benchmark the VoC literature upheld as a successful training system was the German apprenticeship system. There, rigid employment protection legislation and strong and encompassing collective bargaining institutions constituted incentives for firms to commit to high-quality training, resulting in authoritatively certified industry-specific skills (Culpepper 2001; Soskice 1994; Thelen 2007). Hence, non-market institutions that structure strategic coordination among firms are the key factor underpinning successful training systems in so-called coordinated market economies (CMEs). The counter-example has often been the British system, where weak or absent coordinating institutions lead to major collective action problems, as fear of poaching provides a disincentive for business to train, contributing to locking firms in production strategies premised on low skills and low costs (Finegold and Soskice 1988; Thelen and Culpepper 2007).

The VoC approach thus views institutions in the labour market and industrial relations arena as main independent variables, which, as complementary domains, produce combined effects on the willingness and ability of firms to train. Overall, this body of literature provides fundamental tools to understand variation in skill formation systems, grounded in an institutionalist framework inspired by rational-choice theories (Hall and Taylor 1996). Yet, when studying how institutions affect strategic interaction in a given arena, VoC scholars have disregarded the varying ability of firms to leverage training institutions as resources across different varieties of capitalism. Firm size, and how it may influence this ability, was only touched upon in Hancké (2001), who discussed how liberalisation in the French political economy since the mid-eighties led to a shift from state-led to large-firm-led coordination. Indeed, the VoC literature has been criticised for its overly homogenous depiction of national political economies, leaving little room for “within-system” diversity (e.g., Lane and Wood 2012), including at the level of firms (Crouch, Schröder, and Voelzkow 2009). This was also attributed to its implicit or explicit large-firm bias, i.e., the focus on large firms as representative of all firms in a political economy (see Hancké, Rhodes, and Thatcher 2007 for more elaboration on this aspect).

Yet, “within-system” diversity in the form of inter-employer cleavages is at the core of a second stream of CPE research grounded in historical-institutionalist approaches, which addresses the question of continuity and change in skill formation systems (Busemeyer and Trampusch 2013; Culpepper 2007; Dobbins and Busemeyer 2014; Durazzi and Geyer 2019; Emmenegger and Seitzl 2018; Martin 1999; Thelen 2004; 2007; Trampusch 2010). This stream of literature focuses on firms as collectively organized political agents and analyses how employer associations shape training policy. In other words, it conceives training institutions as a dependent variable, while inter-employer cleavages have emerged as key variable to explain institutional change in skill formation systems.

This literature argues that large and small employers “use” vocational training for different purposes due to differences in resources and skill requirements; hence, they have different preferences toward vocational training policy and seek to influence policy change accordingly. A recurrent finding in this respect has been identified in a “segmentalist trend” that collective skill formation systems in CMEs have been subject to. Where large employers’ interests prevail – chiefly in the case of Germany but also to an extent in Switzerland – training systems are expected to provide skills that are more closely attuned to (large) firm needs and less to the wider needs of industry, i.e., they become less collectivist and more segmentalist. Where, on the other hand, small firms prevail (e.g., in Austria), skill formation systems remain relatively stable and keep providing more “general” skills certified at the industry level (Culpepper 2007; Emmenegger and Seitzl 2018; Graf 2018; Thelen and Busemeyer 2012; Trampusch 2010). This approach demonstrates the value of zooming in on the relationship between firms and training policy, highlighting the importance of firms’ size in shaping their preferences toward training policy.

Yet, it equally leaves open a number of questions. While pointing out the role of inter-employer cleavages, the literature mainly focuses on the different positions of large versus small employers – in fact, of their employers’ associations – on national policy reforms. Therefore, it does not examine how institutions might work differently for SMEs compared to large employers when it comes to skill formation. Hence, to tackle the question of the varying effect of institutions on firms of different size (see the next section), we go back to the “original” VoC concern on the effect of institutions on firms – conceived here as *economic* and *individual* actors and not as *political* and *collective* actors – but we utilise the cleavage perspective put forward by the second stream of literature, which has an eye for the relationship between different institutional arrangements and organizational size.

3 Puzzle and argument

As discussed, we seek to explore the disadvantage experienced by SMEs as they try to source the skills they need from their national VET system. We conceptualise the disadvantage as taking two ideal typical forms. First, it can consist of the inability of SMEs to *access* the skills from the external labour market. Building on the classic distinction in the management literature between “make” or “buy” (Williamson 1985), we conceptualize the relative difficulty of accessing skills as a disadvantage in the “buy” dimension. Second, SMEs can also face unique obstacles when trying to *develop* those skills by themselves in the workplace and/or in partnership with schools and training providers. We conceptualise this second dimension as a problem related to “make” skills.

The management literature shows that both types of disadvantage are typically experienced by SMEs. Firstly, SMEs tend to offer lower wages and non-wage benefits and they tend to suffer from lower reputation, making it difficult for them to access skills by recruiting skilled workers (Edwards and Ram 2006). Secondly, SMEs have fewer financial and staff resources than large employers, making it more difficult for them to develop skills, e.g., by offering apprenticeship programmes. As a result, their overall training is significantly lower and much less formalised than in large firms (Storey 2004). Moreover, their production processes and technology are less complex so they have lower expected returns from investments in training, which creates strong disincentives to allocate resources to vocational training (Almeida and Aterido 2010). Hence, SMEs typically are less involved in vocational training than large employers and, when they do train, they tend to provide training of inferior depth and breadth. Their training is shorter and more informal, and skills are often learned on-the-job without dedicated qualified instructors. This echoes the more general observation that HR practices in SMEs often take a more informal form than in large firms (Cassell et al. 2002).

However, a clear message stemming from the VoC literature is that companies are faced with different opportunities and constraints, depending on the institutional context within which they are embedded (Hall and Soskice 2001). In the case of training, we expect that national VET institutions alleviate or amplify SMEs’ disadvantage. In this article, we focus on the UK as an example of a system that prevents SMEs both from accessing and developing the skills they need. We argue that the disadvantage of British SMEs is explained by national VET institutions, and we show this by means of a detailed case study of VET policy in the UK, accompanied by shadow cases of Italy and Germany.

British vocational education is distinguished by two paths: a school-based system, which is publicly funded and should allow companies to access skills without being involved in skill formation, and the apprenticeship system, which requires business involvement in skill development. The British school-based provision of vocational skills has a long-standing issue of low quality, which dates to back at least to the 1990s (Wolf 2011). Vocational education (pre-18) is state-funded even though institutions provid-

ing training also include private schools and training providers. The government has therefore created a quasi-market for training, which is characterised by a proliferation of qualifications of dubious quality, due to and enabled by different factors. Government funding is assigned to schools and training providers based on the number of qualifications they offer and on the number of students awarded a qualification. Rather than improving quality, those institutions have increased the number of qualifications offered and focused on ensuring a high completion rate. Furthermore, as qualifications are not awarded by the state but by competing awarding bodies, which are concerned about losing their “clients,” the system is clearly not geared toward maintaining high standards in key qualifications (Gambin and Hogarth 2015; Wolf 2011). Frequent government reforms of the education system,¹ which often changed the qualification system, further contributed to making English vocational education “extraordinarily complex and opaque by European and international standards” (Wolf 2011, 9). While it is difficult to find comparative data on the quality of vocational education, the pupil/teacher ratio is a suggestive proxy of the poor state of the British vocational school-based education system. The ratio is twenty-five in the UK, which is the highest in Europe and thirteen percentage points higher than the European average (Eurostat 2019). Furthermore, almost 85 percent of the qualifications attained in the school-based system are at Level 2 or below (Gambin and Hogarth 2015, 7), while school-based vocational qualifications (e.g., in Italy) as well as qualifications from dual vocational systems (e.g., in Germany) usually correspond to at least Level 3.

As a response to the lack of relevant and high-quality school-based vocational programmes (UKCES 2012; Wolf 2011), successive governments have been trying to revitalise the apprenticeship system since the mid-1990s (Fortwengel, Gospel, and Toner 2019), thereby promoting employer participation in skill development. Although this emphasis on skill development came with increasing requirements of co-investment from business, especially since the introduction of a training levy in 2015 (see Section 5), employers welcomed this shift. In particular, moving from a centralised to an employer-owned system provided firms with more control over the content and quality of the vocational educational offer, addressing the main traditional pitfalls of the school-based system (Hogarth et al. 2014). Yet, despite the increasing emphasis on engaging firms in the training system, the British apprenticeship system did not trigger any meaningful participation of SMEs in skill development (Bishop 2015).

As the problem of training for SMEs came increasingly under the spotlight (see, e.g., FE Week 2019b), governments tried to adjust the system of funding for training to the advantage of SMEs (see Section 5). Yet, empirical evidence suggests that these attempts

1 Testifying to the extraordinary high frequency of reform, a recently-assembled dataset of public-policy reforms across OECD countries shows that between 1995 and 2013, there were nine reforms of the British VET system. Over the same timeframe, there was only one major reform in each Germany and Italy (Armingeon et al. 2019). While it is not entirely clear if reforms are a cause or an effect of problems in the VET arena, their high frequency certainly suggests that policymakers in the UK feel the need for reform.

did not produce meaningful results. Available data show that the training participation rate among large employers (>250 employees) stands at 68.8 percent, and that this rate drops to 26.6 percent for SMEs (20–49 employees). This gap is 10 percent larger than the EU average (Eurostat 2018). Moreover, costs are unevenly distributed between large employers and SMEs but *not* in the direction that we would expect according to the literature: strikingly, British SMEs spend more, on average, per trainee than large employers. UKCES (2016) reports that companies with between five and twenty-four employees spend £3,800 per employee/year, companies between twenty-five and ninety-nine employees spend £2,800 per employee/year, and employers with above 100 employees spend £1,800 per employee/year.

We explain the conundrum of British SMEs by going back to Hall and Soskice's original claim that the institutional context provides resources to firms for the coordination of their business activities and enables them to excel in certain industries and through particular product market strategies. However, not all firms are created equal: our central claim is that the extent to which firms rely on institutions for the purpose of coordinating their business activities varies depending on their size. The literature in the field of management and organization studies indeed claims that size influences an "organization's ability to acquire and retain resources" (Josefy et al. 2015, 740) making large firms "less dependent on external sources for resources" (Josefy et al. 2015, 741). Furthermore, large firms also benefit from substantial economies of scale (see Josefy et al. 2015, 742). As a function of their size, they are able to reduce per unit costs, which are, in our case, the costs of investing in specialised training equipment and in-house trainers. Finally, large employers have more influence on other actors in the market (or in an institutional arena), which are less likely to dissolve network ties with them (see Josefy et al. 2015, 746). In the words of VoC scholars, large employers find it easier to build forms of non-market coordination with other actors, and/or rely on hierarchy as primary mode for coordinating their business activities.

These considerations suggest that firms, depending on their size, differ in the extent to which they rely on institutional inputs. This argument has important implications for the dominant view in CPE regarding the interdependence between firms and institutions. More specifically, we draw attention to the observation that institutions may be of particular importance to SMEs compared to large employers; the latter are less reliant on the support offered by institutions, because they can produce similar outcomes on their own, as a function of their size. But what are the characteristics of institutional design which support SMEs in their skill endeavour?

The CPE literature offers a two-dimensional categorisation of VET systems, based on the levels of (1) firms' commitment and (2) governments' commitment to VET (see Busemeyer and Trampusch 2012). These dimensions are crucial to develop our argument. In school-based systems (e.g., France, Italy, Sweden), companies' involvement in skill formation is minimal as they can access a pool of skilled workers upon completion of their school-based training. The state is therefore the primary provider of training, and the

resources that companies need to invest are potentially limited to on-the-job training. In such a system – commonly referred to as statist skill formation system – SMEs essentially shift the costs of training onto the state as they do not contribute much to developing skills. In other words, they “buy” ready-made skills, rather than “make” them.

In so-called collective skill formation systems (e.g., Austria, Denmark, Germany), companies are the primary training providers (through apprenticeships) while governments, compared to school-based systems, are relatively less involved. The “make” dimension, in other words, dominates over the “buy” dimension. These systems are therefore more resource intensive for firms than statist systems for various reasons: firms need to have knowledge and staff to develop and manage training programmes; they need to invest financial resources to pay trainers and apprentices’ wages; and they need to have and maintain machines and labs to be used for training purposes. Yet, as previously mentioned, institutions can help firms in coordinating collective skill formation in several ways. Firstly, the involvement of social partners (chiefly employer associations and unions) in the governance of the VET system is central to firms’ engagement with the VET system. Employer associations participate in developing and monitoring training standards, which often operate at the sectoral level. Secondly, employer associations and chambers of commerce can provide companies – including SMEs – with information and expertise to help them navigate the system (Culpepper 2003; Hall and Soskice 2001). Thirdly, the presence of interfirm networks also contributes to sharing knowledge and best practices among companies as well as to ensure cooperative outcomes (Thelen and Culpepper 2007). Networks have been found to be particularly helpful for SMEs to achieve economies of scale in their business activities, an argument that can also apply to the training arena (Perrow 1993).

Our argument is therefore that the institutional disadvantage of SMEs in the UK apprenticeship system is anchored in its quasi-market for training, which does not provide technical skills that companies can access from the school system (unlike a statist skill formation system), while also setting high financial and administrative barriers for those SMEs willing to develop the skills they need (unlike a collective skill formation system). To better identify the pitfalls of the British institutional design, we conduct an in-depth case study of VET policy and its impact on SMEs in the UK and we contrast it with shadow cases of a statist skill formation system (Italy) and a collective skill formation system (Germany).

4 Methodology

Unlike historical studies, which map the evolution and change of institutions, our interest is in revealing the effect of different institutional settings on the ability of SMEs to buy and make skills. The British case is at the centre of our empirical analysis while

Italy and Germany are used as shadow case studies to maximise variation along the main analytical dimension of interest (see Hancké 2009, 75), i.e., the institutional design of the VET system. To “isolate” the effect of the institutional design, we hold the apprenticeship programme we focus on constant across the three countries: mechatronics, which is an interdisciplinary programme generating skills useful in a variety of high-tech manufacturing settings. The mechatronics curriculum is a particularly suitable case to study how institutions can contribute to solve “coordination problems” because it is comparatively expensive. In the UK the annual spending for a Level 3 mechatronics apprenticeship is around £11,300, while that for a retail apprenticeship is around £3,000 and a financial services apprenticeship around £5,300 (Gambin and Hogarth 2017, 11). Furthermore, there is no significant difference in terms of cost per apprentice between the German and British systems, as German companies spend €14,327/year per apprentice (2012/13). Thus the challenge to develop mechatronic skills is, at least in terms of upfront costs, similar in the two countries where business involvement is required in the process of skill formation. At the same time, in all three countries, mechatronics technicians were indicated as the most sought-after occupational profile in the interviews with manufacturers and their employers’ associations.

We rely on thirty-seven semi-structured interviews as our key data source. Almost all interviews were conducted by the first author in the native language of the interview respondent, that is, in either English, German, or Italian. They were conducted face-to-face or over the phone. The first author also visited five training centres and four schools and attended a two-day employer association meeting on training in Germany. In the UK, she attended a meeting of an association of training providers, two open days for apprentices and two manufacturing fairs including training-related information events. We used NVivo11, a software programme for the analysis of qualitative data, to code all policy documents, interview transcripts, fieldwork notes from the visits and participant observations, international reports, and information brochures. We used the source classification to achieve a better overview of the number and type of items analysed by country case (see table A1 in the Appendix). We also used theme nodes, which essentially are text codes or keywords, to describe and categorise the content of the data. Through this process, we were also able to identify the first connections between themes that emerged from the empirical material and concepts gained through the literature review (Saldaña 2009). The theme nodes were then grouped in four main nodes to integrate our data in a narrative comparable across cases, which developed around what emerged as the core categories with explanatory relevance. The core explanatory nodes are “coordination,” which includes the role of different actors and institutions as instruments for coordinating SMEs’ training activities; and two categories referring respectively to the role of “skill suppliers” (e.g., schools or training providers) and to the “standards” regulating the quality, content, and structure of VET. We analytically link these functions of institutions to the relative ability of SMEs to access (“buy”) and develop (“make”) skills across the three countries. Our outcome of interest is captured by the node “SMEs (dis)advantage,” which includes several subcategories illustrating the resources that SMEs can (or cannot) draw upon and the challenges that they face.

5 Findings

The United Kingdom

The British² VET system has been commonly depicted in the CPE literature as a system where “training decisions were essentially left to the vicissitudes of the market” (Stuart and Cooney 2008, 347). Since the mid-1970s, unions have lost members and political influence, as have employers’ associations, limiting their role to lobbying and providing advising services (Gooberman, Hauptmeier, and Heery 2019; Kelly 2015). In addition, during the 1980s the Thatcher government abolished Industrial Training Boards (Gospel and Edwards 2012; Rainbird 2009). Over time, British employers drastically reduced their investment in training – mainly out of fear of poaching – and the British political economy ended up in the notorious “low-skill equilibrium” (Finegold and Soskice 1988).

Yet, in contrast with the focus on “pure” market forces of political economists, empirical contributions, primarily by education scholars, rather depicted British employers as subject to the vicissitudes of government’s training reforms, aiming to create an effective *quasi*-market for training (Fleckenstein and Lee 2018; Gospel and Edwards 2012; Keep 1999; 2006; Ryan and Unwin 2001; Steedman, Gospel, and Ryan 1998). Building on these findings and mobilising new empirical evidence, the following section analyses the relevant features of the British VET system. We structure our description of the British case in a pre-levy and a post-levy section, acknowledging the radical policy shift that took place in 2017 when the government introduced an employer levy system.

Pre-levy system

Since the mid-1990s, governments of all stripes have attempted to revive the VET system (Fortwengel, Gospel, and Toner 2019). In 2000, the government introduced the framework for National Vocational Qualifications (NVQs), which set occupational qualification standards, in collaboration with employer-dominated Sectoral Skill Councils. NVQs (usually up to Level 3) constituted the central element of government-funded apprenticeships, in combination with the more “academic” Technical Certificate and Key Skills Qualifications, including IT and numeracy. NVQs left significant room for variation in the content and quality of training even within the same sector. They were outcome-based and delivered and assessed in the workplace; furthermore, the standards were vague, e.g., the hours of “guided learning” included in an engineering³ apprenticeship could vary from 240 to 1,250 hours for the same qualification (Ryan et al. 2006, 364).

2 While some general institutional traits are applicable to the UK as a whole, specific issues around training refer exclusively to England.

3 In the UK “mechatronics apprenticeships” are often called “engineering apprenticeships.”

This vagueness left ample room for manoeuvre for the third central actor in the British quasi-market for training, namely training providers. While employers' financial contribution remained discretionary, the government allocated funding to central agencies⁴ to redistribute through local Skills Councils and Education Authorities down to training providers (Cuddy, Leney, and Bousquet 2005, 57). As the main goal was to meet government targets in terms of apprenticeship starts, funded training places did not necessarily reflect local skill demands, as the main "customer" of training providers was the government – not local employers. Without the incentive to match the skill demand, training providers offered training courses in those subjects that did not require a sizeable investment in infrastructure, e.g., in business administration rather than engineering, which requires expensive laboratories (Interview 1; Automotive Industrial Partnership 2016). To capture more funds, training providers would also lower the quality of training, taking advantage of the abovementioned "flexible" outcome-based standards (Wolf 2011).

Employers' reactions to such an "unresponsive" system were varied. Some large employers became certified training providers to capture government funding and to control the content and quality of training. Others preferred to deepen their partnership with training providers, e.g., by collaborating in curriculum development or providing technologies and even teaching staff (Interviews 2, 3, 4, 5, 6, 12). However, as we discuss later, these are not viable options for SMEs. Hence, SMEs by and large withdrew from the apprenticeship programme promoted by the government and purchased specialised and shorter courses from private training providers, which would address their immediate business needs. This contributed to watering down the market value of the apprenticeship and to a proliferation of various forms of training, ultimately making the vocational training market difficult to navigate for employers and students alike (UKCES 2011).

Post-levy system

Since the 2010s, VET reforms tried to address the flaws outlined above by providing employers with more power to influence training provision and to design coherent standards (DfE/BIS 2013). The NVQ framework was replaced by the apprenticeship standards developed by so-called trailblazer groups, which are mainly constituted by employers. In the case of mechatronics standards, the trailblazer group includes employer associations (such as SEMTA and the Engineering Employers' Federation) and the Institute of Mechanical Engineers, but most of the participants are large (automotive) companies such as Jaguar Land Rover, and Toyota. The trailblazer group developed clear standards, which are supervised and accredited by the Institute for Apprenticeships. The standards also define the content of the end-point assessment, consisting of a workplace-based portfolio and Viva, as well as a competence-based exam performed by

4 Learning and Skills Development Agency (2000–2006); Quality Improvement Agency (2006–2008); Learning Skills Council (2001–2010); Education Funding Agency (EFA) (2012–2017); Skills Funding Agency (2010–2017).

an externally accredited institution, which also conducts a quality assurance check on the Employer Viva Documentation.

The funding structure was progressively decentralised until the introduction of the Apprenticeship Levy in 2017. Under this new system, all employers receive a £15,000 allowance per apprentice to be offset against payment of the levy, which is now payable at 0.5 percent of the wage bill for firms whose wage bill is above £3m. The levy can only be used for trailblazer apprenticeships, and levy-paying employers release the funds directly to the training provider from their digital service account. In this way, the training provider is more responsive to employers' needs (Interviews 5, 6). In contrast, SMEs, which do not pay the levy, are covered by the co-investment plan of the government for 95% of the apprenticeship costs (90% before 2019). The co-investment funding is allocated directly to training providers, similarly to the previous system. The government sets funding caps, which vary depending on the type of apprenticeship. The maximum estimated fee for a mechatronics/engineering apprenticeship is £27,000 in total, excluding the fee for the end-point assessment (around £3,000).

Challenges for SMEs

The British VET system presents SMEs with several challenges. First, while SMEs have typically provided apprenticeship at NVQ Level 2 rather than at Level 3 in the pre-levy system (FSB 2019), apprenticeship standards have become increasingly complex and holistic. They are “gold-plated,” as one interviewee described them (Interview 7), especially in the mechatronics curriculum, which was inspired by the German dual apprenticeship (Interviews 2, 3). Two aspects are critical for SMEs: the “academic” component, which they consider excessive since the introduction of the requirement for 20 percent off-the-job training; and the end-point assessment, which involves extra costs not covered by government funding without a clear added value for employers (Interview 7, 8). Due to these additional costs and insufficiently high government caps, many SMEs still prefer purchasing ad-hoc training courses, rather than participating in the apprenticeship system, as in the pre-levy system (see also Green and Hogarth 2016). Hence, SMEs' skill demand is very fragmented.

Despite their complexity and the introduction of the end-point assessment, standards are competence-based, similar to the NVQ framework, and do not prescribe the content and structure of the curriculum, e.g., the number of hours and the modules. Hence, individual employers and training providers need to develop the actual curriculum, which requires considerable knowledge and coordination efforts from the employers' side. This increases the initial costs of setting up an apprenticeship, especially as SMEs' skill demands are fragmented and uncoordinated, and training providers have considerable power vis-à-vis SMEs, as explained below.

Indeed, the structure of funding contributes to reducing the influence of SMEs on training providers. Large employers have more leverage over training providers because they provide the latter with a sizeable number of apprentices each year, making them financially attractive clients; furthermore, since the introduction of the levy, large employers can use the funding more flexibly, e.g., they are able to cover the training costs even if they exceed the government cap (Interviews 2, 3, 5). In contrast, SMEs still rely on centrally allocated government funding. Therefore, once they assess the need for an apprenticeship, they first need to find training providers open to non-levy-paying employers. Indeed, not all training providers accept being allocated government funding, which is more likely to run out and is strictly capped (FE Week 2019a; 2019b). Our interview partners working for training providers and government bodies confirmed that the funding cap set by the government is especially insufficient to cover 90–95 percent of the costs of the expensive mechatronics apprenticeship (Interviews 7, 8, 9, 10).

But even if the training providers accepted non-levy paying employers, there are further obstacles. In a survey conducted by the Federation of Small Businesses in 2018, 51 percent of SMEs reported as major obstacle the “availability of courses or places at training providers”; a quarter of the respondents pointed to the “distance to the nearest training provider” (FSB 2019). While SMEs are more likely to be in rural areas than large employers (Defra UK 2019), training providers have an interest in establishing their operations in areas with a higher population and employer density, which entails a potentially larger demand (differently from Italy and Germany, where governments ensure a homogeneous distribution of schools across the national territory, see next sections). Hence, providers specialising in the relevant subject area might be far away, forcing the company to incur additional transportation costs; indeed, SMEs in rural areas reported higher costs for an apprenticeship than those in urban areas (FSB 2019). As a final hurdle, even if SMEs find a close enough training provider with an appropriate training offer, training providers might require an entire cohort to start the apprenticeship programme needed by the SME, but there might not be enough students. An interview partner working for a training provider clearly explains the incentive system and the limitations tied to the levy funding:

We have had companies that [say] “yes, we would love to work with you to deliver a bespoke training programme and we want to use our levy pot for it.” Well [...] if it's just for one company, we can't get an apprenticeship to it and you want five people on it, no we can't do it. (Interview 9)

Due to their limited funding and facilities, which prevent them from purchasing bespoke training, SMEs would need, instead, to coordinate their skill demands. While this is primarily a responsibility of local chambers of commerce and employers' associations in Germany and Italy (see next sections), these organizations are extremely weak in the UK. For example, an official in the small employers' association describes the limits of its responsibility as follows:

We are an organisation that represents their interest[s], we don't help them with [training], unless they have queries and they call the call centre customer services and ask questions, specific questions on apprenticeships or training. We are not a provider, we don't help them with finding apprentices or recruiting them so that's not the kind of thing we do. (Interview 11)

The government set up organizations to coordinate SMEs and to stir training providers into meeting the local skill demand, but they are not representative and therefore benefit little from the employers' buy-in (Almond, Ferner, and Tregaskis 2015); furthermore, they were often re-configured over time. The most recent example of these agencies is the Local Enterprise Partnerships, which were set up by the government in 2010 to replace the Regional Development Agencies in order to better overlap with local labour market areas. These partnerships should promote local development by assessing local economic priorities, improving infrastructures, stimulating job growth, and raising the skills of the local workforce. While Local Enterprise Partnerships should be "business-led," they do not have a mandate to represent all local business actors and they have been criticised for being dominated (similarly to trailblazer groups) by large employers, who possess ample human as well as financial resources, to participate in partnership-coordinated initiatives (FSB 2014; NAO 2016). When asked about Local Enterprise Partnerships, our interview partners in the manufacturing employers' association and government bodies were indeed very sceptical about their effectiveness (Interviews 7, 8, 13).

To sum up, without coordinating their skill demand from the outset, SMEs are unable to influence the offer of training providers and to build the economies of scale, which would be necessary to reduce the costs per apprentice. On the other hand, training providers can contribute to help SMEs by coordinating their skill demands "at the end." Training providers typically try to mix and match different, already running, units in order to fulfil the requirements of the apprenticeship programme and to address the demand of SMEs for a specific skill set. This might impair the quality of the training, though. First, as suggested by one of our interview partners in a relevant government body, the practice of "re-cycling" courses for the trailblazer apprenticeship casts doubt on the added value of those standards compared to already existing NVQ courses, at least for employers (Interview 7). Second, it might further impair the provision of high-quality, relevant training, which is already an issue for SMEs. Indeed, in a FSB survey conducted in 2017 among SMEs, lack of training in relevant subject areas (12 percent), and belief that training is not relevant to business needs and questions over quality of courses (12 percent) were mentioned among the main challenges to train (with a higher rate among those SMEs which actually provided training) (FSB 2017). Concerns over the quality of apprenticeship training might, again, discourage SMEs from engaging with the system, leading to a vicious circle.

Government data show how these institutional disadvantages translate into high training costs for SMEs: the smaller the firm, the higher the costs associated with training management and provider fees. Conversely, larger firms face lower management costs

and devote a higher share of their training expenditure toward apprentices' salaries (UKCES 2016, 113). This section has explained this outcome by mapping how the design of the VET system creates an institutional disadvantage for SMEs in the UK.

Italy

There are three main avenues for vocational training in Italy. First, regional governments offer three- and four-year vocational courses through private training providers, which are quite narrow and do not lead to a school diploma (Cedefop 2016). Second, Higher Technical Institutes, introduced in 2010, are public-private partnerships between upper-secondary schools, local governments, training providers, businesses, and university departments. They also provide training in mechatronics but at a higher level (ISCED-5) than the German dual VET system or the British standard apprenticeship; furthermore, their diffusion is still limited – since 2014 they trained only between 350 and 450 technicians a year (Indire 2019). Hence, in order to be able to cross-nationally compare vocational training in mechatronics, this section focuses on the third and most common VET avenue: the mechatronics curriculum in technical schools.

The governance of the national school system is the responsibility of the Ministry of Education, which develops the framework for school-based education in consultation with the National Committee for Public Education, composed of representatives of teachers and schools (Cedefop 2016). This framework sets the objectives of the educational process, the “specific learning objectives,” the subjects in the minimum national curriculum (including the annual number of teaching hours for each of them), the compulsory timetable for curricula, standards for the quality of education services, and general criteria for pupil assessment. Within that prescriptive framework, schools develop their educational offer, adapting it to the cultural, social, and economic requirements at local level (MIUR 2014). For instance, the mechatronics curriculum typically focuses on the machines used in the local manufacturing industries, which are made available to the schools by the local companies (Interview 15).

In 2015, the school reform (Law 107/2015) tried to bring schools closer to the labour market by introducing the obligation to undertake 400 hours of workplace-based training in the last three years of technical schools (*alternanza*). This allows schools to access up-to-date technologies (Interviews 16, 17). The Ministry of Education made €100m per year available for *alternanza*, which was matched by the same amount from the European Social Fund in 2018 (MIUR 2018; Il Sole 24ore 2018). Schools need to apply for the funding with a project developed in collaboration with local employers. The funding goes toward covering the costs that a school incurs during the project, e.g., provision of health and safety training and arranging for the transport of students, but it does not cover the costs for employers.

Large employers are more likely to coordinate with schools for *alternanza* projects because they have more resources in terms of time and staff; furthermore, they are usually also better known and can accommodate a large number of students so they are more likely to be approached by a school (Interviews 15, 18, 19). In contrast, SMEs are more likely to encounter challenges in participating in *alternanza* projects due to their limited resources (Interviews 15, 20). There are parallels here to the challenges faced by SMEs in the UK, which are expected to participate in developing trailblazer standards, to provide on-the-job training and find training providers on their own. However, it is important to remember that the state already directly provides free vocational education up to level ISCED-4 so the *alternanza* project is comparatively less broad and complex to develop and coordinate, and it is short (400 hours max); hence, *alternanza* mainly provides an opportunity to identify good candidates and to “test” them (Interview 21). Furthermore, because schools *need* to find business partners for their projects, the participation of SMEs is actively encouraged by the schools themselves, employers’ associations, and the government (Interviews 15, 18).

This participation is facilitated in a number of ways. In order to make it easier for their members to participate, employers’ associations have developed *alternanza* projects at the regional level – with the regional education offices and the local chambers of commerce – or at the national level – with the Ministry of Education. Schools are then invited to use those frameworks, adapting them to their needs and those of their partner companies, which therefore need to invest less time and resources in developing the project. For instance, in 2015 the metal employers’ association, the Ministry of Education, and the National Institute of Education Research launched the *alternanza* programme “Traineeship” in mechatronics, which was then implemented in fifty selected technical institutes (Indire 2016).

Most importantly, SMEs are embedded in local networks, which are formed and/or activated to organize training. The “leader” of each network is the school (Interview 22), which coordinates the actors involved in the *alternanza* project and manages the funding. Local chambers of commerce facilitate the contact between schools and SMEs as they have the responsibility to build and manage online platforms where companies willing to participate in the projects can register; furthermore, the local associations of small employers can serve as intermediaries between their members and the schools (Interview 23). Local chambers of commerce also manage vouchers, provided by the Ministry of Education, that SMEs can use to employ the tutors (Camera di commercio di Torino 2018). Furthermore, as part of a network, SMEs can “piggyback” onto already existing projects in their local schools, as suggested by an interview partner from the metal employers’ association:

It does not have to be the case that the small company has to develop a project from scratch. If there is a network of companies which works together with that particular school, the project development will have some common basic elements and the project will be then developed more in detail for the specific company and students [...]. (Interview 24)

In most cases, these projects in conjunction with a school were initiated by a large employer and then extended to its suppliers and other local SMEs (Interviews 17, 18). The dimension of “network” or even “supply chain” is often built in the *alternanza* project itself. As it is too time-consuming and burdensome for SMEs to host students for the entire period of *alternanza*, a rotation is organized across different companies belonging to the same supply chain. The integration of a “supply-chain logic” is also seen as a good instrument to involve SMEs in *alternanza* by the Ministry of Education, which has actively promoted it by offering additional funding for projects involving lead firms and their suppliers (MIUR 2018).

In summary, given the central role of the state in the VET system, SMEs (as well as large employers) can shift most of the costs of training onto the state. Therefore the state works as a powerful “equalising” mechanism: around 30 percent of SMEs engage in training, which is a similar percentage to the UK (26.6 percent), but large employers also rely on the state, as their participation rate is only eight percentage points higher than SMEs, a very small participation gap. For the same reason, costs are quite low – companies with between twenty and fifty employees spend on average around €1,180 per employee/year (compared to £2,800 in the UK) and employers with above 250 employees spend less than €100 more (ISTAT 2015). Furthermore, when SMEs’ direct involvement in skill formation is required due to the *alternanza*, the local networks of schools, companies, and employers’ associations and chambers of commerce that they are embedded in help them to navigate the system and reduce the cost of participating.

Germany

Employers and their representatives, trade unions, schools, and the government are all involved in the standard-setting process of the German VET system. The legislation provides the main framework, but the specific occupational standards are developed and updated as a result of employers’ initiatives. The standards for workplace-based training (70 percent of the curriculum) and examinations are discussed and agreed upon by employers’ representatives, trade unions, and the government at national level (Govet 2018). The learning plan for schools is developed and updated by the Conference of the Ministers of Education in consultation with regional committees constituted by workers’ representatives, employers’ representatives, and officials of the regional government, as well as with vocational training committees, constituted by six employers’ representatives, six workers’ representatives, and six teachers (Büchter 2018, 42). The school-based component (30 percent) is dedicated to learning more “theoretical” content and the learning plan is standardised across schools, which the latter get “ready-to-go” (*fix und fertig*) from the tripartite regional committee so they have limited room for manoeuvre (Interview 28). The exam is administered by the local chamber of commerce and industry (IHK), which also nominates the exam committee constituted by employers, workers’ representatives, and teachers (BIBB 2017). Membership in the lo-

cal chamber of industry and commerce is compulsory and involves contributing a lump sum per year in addition to 0.2 percent of yearly business earnings; on top of that, the intermediate and final exams each cost around €700 (Interview 29; Prueferportal 2018).

Employers and schools are directly involved in training provision. By law, schools are independent from employers and are publicly funded. While schools coordinate with employers, they are not forced, and do not have an incentive either, to adapt their curriculum to the needs of large employers, even if they provide most of the students. Regional governments plan the distribution of schools, making sure that all young adults have a vocational school in commutable distance and to match the skill demand from local firms. As achieving these two objectives is particularly challenging in peripheral and structurally weak regions, and given the declining number of apprentices, the Conference of the Ministers of Education recently suggested mergers between schools and encouraged companies to start an apprenticeship cohort every two years (rather than each year); furthermore, it made programmes more flexible so that students on different apprenticeship tracks can attend the same class (Büchter 2018).

Employers, however, decide how to implement the curriculum in the workplace and cover the costs for tutoring staff, infrastructures, exam fees, and apprentices' salary and benefits. For the mechatronics curriculum, employers are estimated to spend around €14,000/year per apprentice (Govet 2018). As they invest in their own training centres and material and higher salaries, large employers pay more for apprentices than SMEs – companies with between ten and fifty employees spend £4,254 per apprentice/year, companies with between 50 and 500 spend £5,391 per apprentice/year, while companies with above 500 employees spend £7,354 per apprentice/year (Jansen et al. 2015). Yet, SMEs have been found to struggle to sustain these costs (Culpepper and Thelen 2007; Thelen and Busemeyer 2012) because they do not have the instruments, machines, and tutors to provide the different modules that constitute an apprenticeship, especially one as broad and complex as the mechatronics curriculum. Indeed, as the CPE literature on segmentalist trends in VET suggests (Thelen and Busemeyer 2012), SMEs participate less in VET than large employers, as 59 percent of companies with between ten and forty-nine employees provide training compared to 93.6 percent of companies with above 250 employees. Yet, it needs to be noted that the participation gap between SMEs and large employers is still eight percentage points lower (34 percent) than the participation gap in the UK (42 percent; Eurostat 2018).

Indeed, there are institutionalised arrangements to deal with the issue of costs for SMEs, such as inter-company training centres and network-based training. The former is a state-led instrument while the latter is primarily business-based but the underlying logic is similar as they both have the function of making training affordable for SMEs by building economies of scale and offloading onto the state parts of the costs of workplace-based training. The rather understudied inter-company training centres were set up in 1973 to offer specialised high-quality training modules for integrating the apprenticeship curriculum of SMEs. Hence, they represent the third “learning site” in addition

to vocational schools and companies, which SMEs can “use” if they lack the required staff and infrastructures. These centres are funded primarily by the federal government and the regional government but also by local chambers of commerce, which are most often responsible for their management. The rate of funding from the national government is higher in structurally weak regions (BMBF 2016).

Second, since 2005 the Vocational Training Act introduced institutionalised forms of network-based collaboration among firms (*Verbundausbildung*), which are meant to allow sharing the “burden” of apprenticeship (Interview 30). The government sees in the network-based apprenticeship an instrument to counteract the decline of apprenticeships, and it offers additional funding to participating companies (BMBF 2018), as in North Rhine-Westphalia where each apprenticeship position can be supported with a one-off payment of up to €4,500 (NRW 2009). Local chambers of commerce also play a crucial role in the network-based VET because they register the contracts among the companies in addition to the contracts between apprentices and their employer (Interview 29). Furthermore, they provide services aimed at connecting SMEs; for instance, the Chamber of Commerce and Industry in Berlin has an online platform, where companies can post their offers of training modules and try to find a match with other SMEs (Marktplatz-Verbundausbildung 2019).

In sum, unlike in the UK, German SMEs can resort to a number of institutional arrangements that support their training endeavours. Firstly, they can rely on interfirm networks to organize their training, which help them achieve economies of scale and share the costs of an expensive apprenticeship programme. Secondly, the state supports interfirm cooperation through inter-company training centres and targeted financial support. Finally, the public school system ensures that school programmes in mechatronics of comparable quality and content are accessible to SMEs and large employers alike.

6 Discussion and conclusion

This article sought to explain the comparative disadvantage of SMEs vis-à-vis large employers in the UK in the institutional arena of VET. We conceptualize this disadvantage along the two key dimensions of “buy,” which we conceive as the ability to access skills on the external education and labour markets, and “make,” which we understand as the ability to develop skills, chiefly in the form of apprenticeship programmes. Leveraging Italy and Germany as shadow cases, we unpacked the mechanisms leading to British SMEs’ institutional disadvantage. The central finding of our study is that British quasi-market institutions set high entry barriers and transaction costs for SMEs, while reducing the opportunities to create economies of scale.

Our findings suggest that “employer ownership,” the guiding principle of British VET policy, militates against SMEs. First, the standards, especially since the introduction of trailblazer groups dominated by large employers, are complex, costly, and difficult to implement. Their competence-based nature requires knowledge and resources to develop the curriculum and coordinate with training providers, leading to high management costs that are not covered by the already insufficient government funding. Even though quasi-market mechanisms are supposed to give employers more choice in terms of price and quality, SMEs experience great difficulty in finding a local provider delivering relevant and high-quality training because of their limited clout. The limited leverage of SMEs on the quasi-market for training is due to their small number of students, their dependence on scarce and centralised government funding in combination with a lack of institutional inputs to coordinate their skill demands through the government, local employer associations, and chambers of commerce.

It is precisely the availability of these institutional inputs that allow SMEs in Germany and Italy to build economies of scale through business-led and state-led coordination. In both Germany and Italy, school distribution over the national territory is decided by the government, which is primarily interested in providing equal education opportunities across regions. In line with this principle, the school curriculum is relatively detailed and standardised at the national level and school-based education is funded by the state. In Italy, this implies that employers benefit from “free” vocational education up to a certain level, with no management costs involved. In Germany, the national and regional governments fund inter-company training centres and provide additional funding for inter-company training networks, also supported by the local chambers of commerce. Similarly, in Italy the government has made extra funding available for *alternanza* projects involving networks of SMEs, especially along a supply chain, and local chambers of commerce and employers’ associations play an active role in facilitating the collaboration between schools and SMEs.

Overall, our analysis reveals how institutions in Italy and Germany help SMEs to access and/or develop skills, while SMEs in Britain are not supported in this endeavour, and thus are unable to overcome their institutional disadvantage in the domain of vocational education and training. These findings have important theoretical implications. We primarily contribute to the VoC literature by looking at how different institutional settings affect firm strategies in the realm of vocational training as we unpack the institutional disadvantage faced by SMEs across political economies. By so doing, we show that VET institutions are characterised by greater within-country diversity, complexity, and heterogeneity than often assumed in the CPE literature (Lane and Wood 2012; Streeck and Thelen 2005). First, we show that the effect of VET institutions is not homogenous across firms within a particular national institutional setting. While institutions are often described as resources (Jackson and Deeg 2008), firms, depending on their size, vary in the extent to which they need them, but also in their ability to tap into these resources (Josefy et al. 2015). Our study thus echoes previous work on the differences between small and large firms in a variety of settings, such as employment

relations (Saridakis et al. 2008) or finance (Bluhm and Martens 2009); however, thanks to the cross-country comparative nature of our study, we are also able to show that the “liability of smallness” in the VET domain varies across countries and it depends on the institutional context. More specifically, a key finding is that VET institutions vary in their ability to level the playing field for SMEs, an objective that they can achieve by reducing the costs of access to or development of skills. In particular, the British quasi-market institutions are exacerbating inequalities, while non-market coordination mechanisms in Italy and in Germany prove effective at levelling the playing field.

Yet, the coordination mechanisms that we find in the VET domain do not fully reflect the modes of coordination typically attributed to each model of capitalism: state-led coordination in Italy, business-led coordination in Germany, and market-led coordination in the UK. Indeed, our second contribution consists of highlighting the heterogeneity of VET institutions, which have differentiated features to serve the needs of SMEs. These have been typically neglected in the CPE literature, not least due to its large-employer bias. In the UK, the state plays a central, albeit detrimental, role in creating a quasi-market for training accessible also to SMEs; moreover, business-led coordination, which is central in the post levy system through the trailblazer groups, is tilted toward large employers. In Germany, where the VET system is typically co-managed by the unions and employers through their membership associations and chambers of commerce, the state also plays an important role in supporting SMEs through the funding of inter-company networks and training centres, and this intervention has been strengthened in recent years. This finding is consistent with Culpepper and Thelen’s expectation that, to countervail segmentalist trends, the costs of the German dual system will be “shifted in explicit or subtle ways to the states or federal government – for example, through direct subsidies for more collectivized training provision for small and service sector employers” (2008, 45). In Italy, in addition to the traditional role of the state, a pivotal role in support of SMEs is played by local networks of companies, schools, regional school offices and local chambers of commerce, and by inter-organizational networks along the supply chain. This finding reminds us of pre-VoC research, which depicted Italian capitalism as heavily reliant on local and/or regional networks (Locke 1995; Burroni and Trigilia 2001). Overall, training networks thus emerge as a possible device for SMEs to curtail some of their institutional disadvantages. Correspondingly, they are increasingly widespread in a number of countries, including Switzerland (Imdorf and Leemann 2012) and the United States (Fortwengel and Jackson 2016).

Our findings have implications also for the literature on inter-employer cleavages and institutional change. By highlighting the complex role of VET institutions for SMEs across political economies, our in-depth empirical analysis suggests that more attention should be paid to the institutional context in the endogenous process of employer preferences formation (see the discussion in Trampusch 2010). Existing literature has so far exclusively focused on CMEs, claiming that SMEs would prefer the “collectivist” solution while large employers value the opportunity to develop “firm-specific” skills (e.g., Busemeyer and Trampusch 2012). However, employer preferences might vary

across political economies. For instance, given the institutional features of the British VET system, large employers pushed for and actively participated in the development of industry-specific qualifications at the national level, while SMEs typically prefer purchasing firm-specific training in order to avoid the flaws of the quasi-market. While it is beyond the scope of this paper to analyse the development of employer preferences for VET in the UK, this example suggests that the theoretical framework on inter-employer cleavages and institutional change could be expanded to different varieties of capitalism if the analysis of employer preferences incorporated our insights on the relevant institutional mechanisms for SMEs in the VET arena.

More broadly, future research could look at how the institutional disadvantage of SMEs is grounded in complementary relationships between institutional domains, such as those between training, the labour market, and employment relations. Future work could also pay closer attention to the role of the state across countries. For example, how do state policies reinforce institutional disadvantages of SMEs? How do they seek to level the playing field and how successful are they? Addressing these questions would be important, and would contribute to the growing stream of literature within institutional and comparative studies that highlights state actors and their contribution to institutional stability and change of skill formation systems across varieties of capitalism (Trampusch 2014; Fortwengel, Gospel, and Toner 2019) as well as other policy areas, such as industrial policy (Bulfone 2019).

Our concluding reflection is that paying attention to organizational size in the analysis of (VET) institutions allows us to uncover new patterns of cross-national variation in skill formation. More broadly, we encourage future work in CPE to take a differential view on firms within a particular variety of capitalism, as institutions may have particular implications for different “recipients.” Additional comparative research in other countries and institutional arenas could further substantiate the importance of organizational size to explain the differential effects of institutions, and thus help in painting a more accurate picture of the relationship between firms and institutions across countries.

Appendix

List of interviews

- Interview 1, employer association, UK, 22.04.15
- Interview 2, manufacturing employer 1, UK, 09.01.17
- Interview 3, manufacturing employer 2, UK, 31.10.17
- Interview 4, manufacturing employer 3, UK, 30.01.17
- Interview 5, manufacturing employer 4, UK, 10.01.18
- Interview 6, manufacturing employer 4, UK, 10.02.18
- Interview 7, government officer, UK, 27.10.17
- Interview 8, engineering & manufacturing employer association, UK, 08.05.18
- Interview 9, training provider, UK, 17.10.17
- Interview 10, metal employer association, UK, 22.11.17
- Interview 11, small business association, UK, 17.10.18
- Interview 12, manufacturing employer 4, UK, 10.01.18
- Interview 13, engineering & manufacturing employer association 2, UK, 17.11.16
- Interview 14, manufacturing employer 2, UK, 24.07.17
- Interview 15, technical school 1, IT, 20.12.17
- Interview 16, local government education unit, IT, 08.01.19
- Interview 17, local employer association, IT, 12.02.18
- Interview 18, technical school 2, IT, 06.07.17
- Interview 19, manufacturing employer 1, IT, 14.11.17
- Interview 20, local manufacturing employer association 2, IT, 10.01.19
- Interview 21, manufacturing employer 2, IT, 21.04.17
- Interview 22, small business association, IT, 11.01.19
- Interview 23, local employer association 2, IT, 14.02.18
- Interview 24, metal employer association, IT, 17.01.19
- Interview 25, regional training provider, IT, 22.05.18
- Interview 26, government officer, IT, 07.01.19
- Interview 27, small business association 2, IT, 10.01.19
- Interview 28, technical school, DE, 16.11.17
- Interview 29, local chamber of commerce, DE, 06.07.18
- Interview 30, local metal employer association, DE, 10.04.17
- Interview 31, manufacturing employer 1, DE, 31.05.17
- Interview 32, manufacturing employer 1, DE, 05.09.17
- Interview 33, technical university, DE, 31.05.17
- Interview 34, metal employer association, DE, 07.12.16
- Interview 35, manufacturing employer 2, DE, 23.02.18
- Interview 36, manufacturing employer 3, DE, 28.04.17
- Interview 37, manufacturing employer 4, DE, 02.06.17

Table A1 Documents coded in NVivo

Document type	DE	IT	UK
Interviews	10	13	14
Policy reports	3	2	24
Promotion and information material	7	4	6
Fieldwork notes	3	2	4
News	0	2	2
Academic literature	2	0	7
Total	25	23	57

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