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Asset specificity, institutional complementarities and the variety of skill regimes in coordinated market economies

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The concept of asset specificity has become very prominent in the literature on skill formation, welfare states and labour markets. Building on the varieties of capitalism (VoC) school, this paper points out three distinct shortcomings of this literature: first, the VoC approach does not fully account for the variation of skill regimes in coordinated market economies (CMEs); second, the VoC approach underestimates the importance of authoritative certification in determining the real portability of vocational skills; and third, the complementarities between skill formation and social policies are different from what is expected in the VoC contributions. I argue that the variation of skill regimes in CMEs covers not one, but two separate dimensions: firms' involvement in skill formation and the vocational specificity of the education system. On the basis of three case studies, I demonstrate the existence of three distinct skill regimes in CMEs: the segmentalist (firm-based) skill regime of Japan, the integrationist (school-based occupational) skill regime of Sweden and the differentiated (workplace-based occupational) skill regime of Germany.

Keywords: skills, political economy, varieties of capitalism, training, labor market institutions, welfare state

JEL classification: I20 education and research institutions, J24 human capital, skills, occupational choice, labor productivity, J50 labor–management relations, trade unions, collective bargaining

1. Introduction

Education policy, in general, and vocational training, in particular, have long been treated with little regard by scholars of political science and comparative political economy. This has all changed radically since the Varieties of Capitalism (VoC) school (Estevez-Abe *et al.*, 2001; Hall and Soskice, 2001; Iversen and

Soskice, 2001; Iversen, 2005) put skill formation right at the centre of the analysis of welfare states, production regimes and national innovation strategies. The contributions of the VoC school to the study of skill formation should be seen as a first step into the exploration of the political foundations of skill regimes. However, as this paper argues, a more refined understanding of the variety of skill regimes, particularly in coordinated market economies (CMEs), should be developed.

More specifically, I argue that instead of the dichotomous distinction between general and specific skill systems, the variety skill regimes covers two dimensions: the degree of firm involvement in skill formation on the one hand and the degree of authoritative certification of vocational skills by the education system on the other. By this means, I can identify three distinct models of skill regimes in CMEs: the segmentalist skill regime, the integrationist skill regime and the differentiated skill regime. Following a brief summary of the relevant VoC literature and the theoretical section, the particular logic and the associated institutional complementarities between education and training, industrial relations as well as labour market and welfare state institutions are explored in case studies of Japan, Sweden and Germany. The concluding section provides a summary of the argument as well as some proposals for future research.

2. The concept of asset specificity in the VoC literature

The concept of asset specificity and ‘specific skills’ features prominently in the VoC literature. Starting with the seminal contribution of Hall and Soskice, actors in CMEs are expected to be more willing to invest in

specific and co-specific assets (i.e. assets that cannot readily be turned to another purpose and assets whose returns depend heavily on the active cooperation of others), while those in liberal market economies should invest more extensively in *switchable assets* (i.e. assets whose value can be realized if diverted to other purposes). (Hall and Soskice, 2001, p. 17)

The framework developed by Hall and Soskice discussed the relevance of different types of assets, but the notion of ‘skill specificity’ and the related importance of vocational training became the focal point of subsequent discussions because of the connection between firms’ production strategies and the availability of different types of skills. The availability of different forms of non-market-based coordination allowed firms in CMEs to pursue a particular production strategy that has been called diversified quality production (Streeck, 1992), based on incremental innovation and long-term relationships between companies and finance actors as well as investments in specific skills.

The dichotomous distinction between coordinated and liberal market economies (LMEs) implies an equally simple distinction between general and specific skill systems (i.e. Germany and the USA in the Hall and Soskice article). However, various contributions to the VoC school have tried to move beyond this dichotomy. For example, Estevez-Abe *et al.* (2001) distinguish between three different types of skills: first, firm-specific skills that are least portable and usually provided through on-the-job training; second, industry- or occupation-specific skills that are acquired through apprenticeship training and vocational schools and recognized (especially when authoritatively certified) by any employer in a given trade; and finally, general skills with a high degree of portability that carry a value that is independent of the type of firm or industry (*ibid.*, 148).

Here, the underlying dimension of variation is the ‘portability’ of skills. This is mirrored in other definitions of skill specificity to be found in the VoC literature: ‘Specific skills are valuable only to a single firm or a group of firms (whether an industry or a sector), whereas general skills are portable across all firms’ (Iversen and Soskice, 2001, p. 876). In Cusack *et al.* (2006), specific skills are defined as ‘employable only in a particular firm, industry, or occupation’ (Cusack *et al.*, 2006, p. 367), bringing the distinction between different types of specific skills back in, but blurring it at the same time. On the country level, they distinguish between countries with an ‘extensive’ vocational training system producing more specific skills and countries without such a system (*ibid.*, p. 369). Finally, Cusack *et al.* talk about the importance of ‘co-specific assets’ based on cooperative management between business and labour and joint investments in skill formation (Cusack *et al.*, 2007, p. 377).

Hall and Soskice explicitly refrain from explaining the origins of the varieties of capitalism and take existing institutional frameworks of national political economies as given in order to be able to demonstrate that ‘strategy follows structure’ (Hall and Soskice, 2001, p. 15), i.e. that firms adapt their production strategies in light of available forms of coordination. Nevertheless, one of the most innovative and provocative theses developed in the VoC school is the notion that employers as political actors support institutions like collective wage-bargaining and welfare state policies because they are tied to their particular production strategies (and firms, being rational actors, realize this). For example, generous social policies protect workers from having to accept jobs during economic downturns ‘that do not correspond to their skill qualification’ (Mares, 2001, p. 186), so that investments in co-specific assets are protected. As a consequence, firms’ skill demands (based on their production strategy) predict their willingness to support welfare state policies (*ibid.*, p. 186).

Estevez-Abe *et al.* (2001) expand this argument. They identify complementarities between particular types of skills and specific kinds of social policies: high levels of employment protection (i.e. protection against easy dismissal) encourage

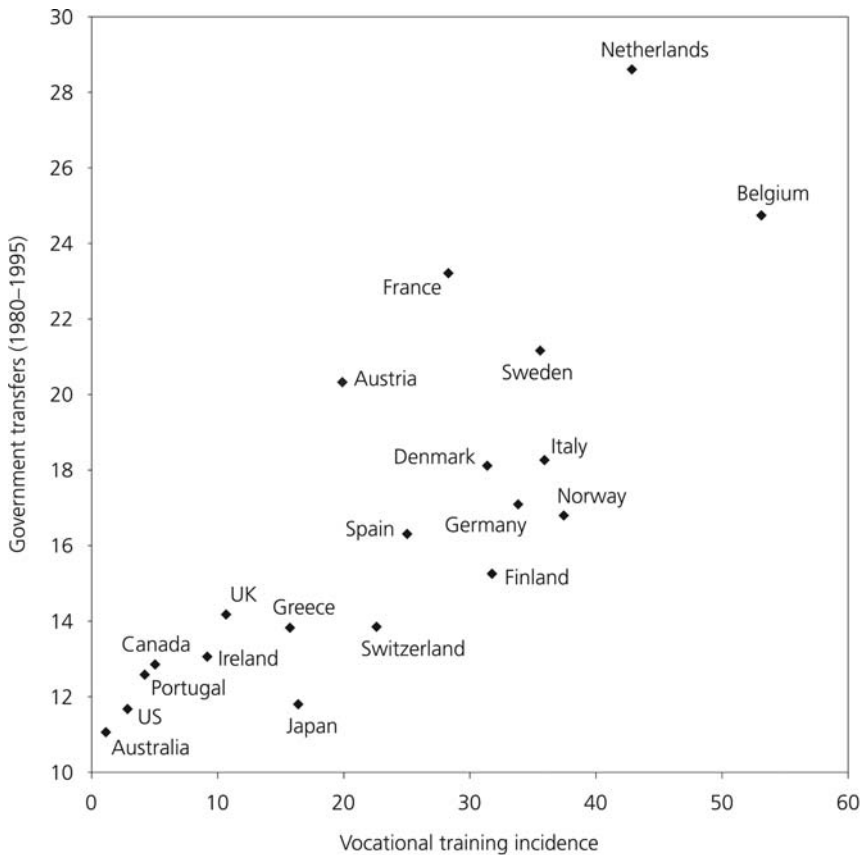
the formation of firm-specific skills, whereas high levels of unemployment protection are associated with investments in industry-specific skills (*ibid.*, p. 154) because skilled workers can move between firms, but only within a given industry, based on their broader set of occupational skills.

Estevez-Abe *et al.* develop their argument on the country level, but most of the subsequent literature on the relationship between social policies and skill specificity is focused on the micro level. Starting with the seminal contribution of Iversen and Soskice (2001), the central research question has been defined as how the character of human capital investments affects individuals' social policy preferences (Iversen and Soskice, 2001, p. 875; Cusack *et al.*, 2006). Investments in specific skills carry higher labour market risks because of the reduced portability of these skills; hence, workers with specific skills should have a higher demand for social policies, compensating for the greater risks. The Iversen and Soskice measure of individual skill specificity is based on the breadth of occupational groups as defined by the ISCO classification and the individual's reported level of education as well as occupational unemployment rates to capture directly the degree of labour market risk (Cusack *et al.*, 2006, p. 371).

3. A constructive critique

The VoC school has gained enormous prominence during the last several years. As a corollary, a significant amount of criticism has been levelled at it. Numerous empirical studies have applied and tested the Iversen and Soskice argument and found mixed results (see Lee, 2007, for the U.S., Tählin, 2008, for Sweden, and Emmenegger, 2008, as well as Anderson and Pontusson, 2007, for OECD countries). Kitschelt (2006) claims that the statistical effect of skill specificity on social policy preferences disappears once the status of blue-collar workers is controlled for by means of a dummy variable. Kenworthy (2006), challenging the findings of Hall and Gingerich (2004), finds no strong relationship between institutional coherence and macro-economic performance on the country level. On the theoretical front, scholars have criticized the insensitivity of the VoC approach with regard to variation within countries (Herrmann, 2008) and between economic sectors (Allen, 2004); its overemphasis on 'self-reinforcing equilibria' and the related insensitivity towards processes of institutional change (Streeck and Thelen, 2005; Becker, 2007); and its functionalist implications about preference formation, motivation and the behaviour of economic actors (Streeck, 2004).

The following critique comes from a different direction. More specifically, I aim to help clear the conceptual mist surrounding the theoretical underpinnings of the VoC conceptualization of asset specificity that lingers on despite its foundations in well-established theories such as Becker's human capital theory



Note: This is a replication of figure 3 in Iversen and Soskice, 2001, p. 888; data made available by Torben Iversen.

Figure 1 Government transfers and vocational training activities in OECD countries.

(Becker, 1993) and Williamsonian transaction cost economics (Williamson, 1975, 1981, 1990, 1993). This will be done in the form of three theses.

3.1 The VoC approach does not fully account for the variety of training regimes in coordinated market economies

Iversen and Soskice (2001) operationalize the degree of asset specificity in labour force skills by means of an indicator of 'vocational training intensity' (which is the share of young people in (post-)secondary vocational training as a percentage of all those in the (post-)secondary school age cohort; *ibid.*, pp. 888–889, replicated here in Fig. 1 (see also Cusack *et al.*, 2006)). The reasoning behind this measure is not as clearly developed as it is in the case of the micro-level measure of skill specificity. But apparently, the idea is that vocational training somehow entails

the formation and certification of more specific skill sets than do education in general or academic educational institutions.

Hence, one would expect the most specific skill systems to achieve the highest values on this indicator and the most general skill systems to lie at the other end of the extreme. In line with this expectation, the LMEs (Australia, the USA, Canada and Ireland) are to be found on the lower end of the 'vocational training intensity' scale. Besides the fact that, among LMEs, Australia is the only country with a viable apprenticeship system (Gospel, 1994) and scores lowest on the indicator, CMEs are spread all over the scale. A neat, dichotomous classification into general (LMEs) and specific (CMEs) skill countries is obviously inadequate, and the variety of training regimes seems to be larger in the case of CMEs than in the case of LMEs. In more recent research, for example, Iversen and Stephens (2008) identify three worlds of human capital formation that are closely linked to Esping-Andersen's worlds of welfare capitalism (Esping-Andersen, 1990). Anderson and Hassel (2007) distinguish three different types of training regimes in CMEs: the firm-specific variant (i.e. Japan), school-based occupational training regimes such as the Netherlands and Sweden, and workplace-based occupational training regimes such as Germany (more on this below).

A closer inspection of the position of CMEs on the vocational training intensity scale opens up new questions. Following Williamson (1975, p. 63) and Becker (1993[1964]), skill specificity is highest when provided on the job in a firm setting. Hence, Japan is probably the closest empirical case to a firm-specific skill system (more on this below, but see also Estevez-Abe *et al.*, 2001, p. 154). Furthermore, vocational training with a strong component of workplace-based training, e.g. in the form of apprenticeships, entails more 'skill specificity' than school-based vocational training. These expectations, however, do not fit with the positions of countries on the vocational training intensity measure. Japan scores well below the other CMEs. And countries with an extensive apprenticeship system (Germany, Austria and Switzerland) score lower than countries such as Belgium, the Netherlands and Sweden, where vocational training is largely school-based.

These inconsistencies between expectations and empirical facts go beyond the question whether the Iversen and Soskice measure of vocational training intensity is an adequate way to operationalize skill specificity. They point to underlying inconsistencies in the theoretical underpinnings, one of which is the ambiguity surrounding the role of certification.

3.2 *The VoC approach underestimates the importance of mechanisms for the authoritative certification of skills*

As outlined above, the VoC literature defines skill specificity indirectly by looking at the portability of skills. Lower portability implies higher specificity of skills.

Hence, Iversen and Soskice (2001) use a linear, one-dimensional measure of skill specificity, both on the individual and on the country level (see also Iversen, 2005; Cusack *et al.*, 2006). Estevez-Abe *et al.* (2001) distinguish between firm-specific and industry-specific/occupation-specific skills. They also mention that the latter are often authoritatively certified. Nevertheless, the ‘portability’ of skills seems to be the most important dimension of variation, i.e. industry-specific skills occupy a middle position on the dimension of skill specificity between firm-specific and general skills.¹ The reason for the indirect measurement of skill specificity made by looking at portability is that a direct assessment of firm-specific skills in line with Becker’s definition is hard to implement empirically because it is based on hypothetical comparisons of the productivity of workers in different firms (Becker, 1993[1964], p. 40).

In the following, I will argue that the issues of portability of skills and their actual content must be looked at separately.² Otherwise, we run the risk of misinterpreting the nature of firm involvement in processes of skill formation and, as a consequence, of drawing inadequate conclusions about the inner workings of and complementarities in skill regimes. For instance, Japanese firms provide their workers with a broad set of occupational skills that would, in the sense of Becker (1993[1964]), lead to productivity increases in other firms as well. But the real portability of these skills is low, because in contrast to the German system, the Japanese skill regime lacks effective mechanisms for the authoritative certification of skills, and since labour mobility is low.

An important consequence of the stricter separation between the portability and content of skills is that the variety of skill regimes in CMEs can no longer be grouped along one dimension of skill specificity, but must be conceptualized in a two-dimensional space, namely the level of firm involvement in the formation and provision of transferable, occupational or polyvalent skills on the one hand and the existence of mechanisms of authoritative certification of vocational skills on the other. This argument will be developed in two steps.

The first step is to look at the two distinctly different ‘sources of specificity’ (Blossfeld, 1992) at the level of skill systems. Above, we already talked about the importance of firm involvement in and the ‘workplace-relatedness’ (*ibid.*, p. 172) of training. Skill systems differ significantly with regard to the intensity with which firms are involved in skill formation, either in initial or in continuous vocational training (Aventur *et al.*, 1999). The higher the engagement of firms in

¹One telling example in this context is the way Estevez-Abe *et al.* (2001) first provide the reader with detailed information on the variety of training regimes in CMEs (*ibid.*, pp. 170–171), but then proceed to measure skill specificity in terms of job tenure rates on a single dimension (*ibid.*, p. 173).

²A similar argument about the necessary distinction between the portability and content of skills was already made by Sako (1991).

skill formation, the higher the level of asset specificity. This is because more intense involvement on the part of firms allows for the provision for truly firm-specific skills in the Beckerian sense, i.e. skills that are applicable only in the training firm.

In the real world, however, it is hard to imagine concrete examples of skills which would be completely useless for non-training firms. Hence, most skills relevant to firms and workers are at least partly transferable (Stevens, 1994, 1996, 1999). In the Williamsonian world of transaction cost economics, firms and workers invest in 'co-specific assets' and end up in a situation of 'bilateral dependency' (Williamson, 1993, p. 128). However, this bilateral dependency can arise only if the skills provided by the firm can, in theory, be used in other contexts as well, or in other words, if the skills are less narrow and specific, but broad and 'polyvalent' in nature (Streeck, 1996, p. 141).³ Bilateral dependency arises for the firm because the worker could leave and try to sell her skills to another employer. The worker, on the other hand, depends on firms' willingness to value her investments in specific skills by paying higher wages. The crucial difference between the two is that 'more specific skills' means two very different things: in the Beckerian world, it means 'narrower and fewer skills'; in the Williamsonian world, it means 'more bilateral dependency' as a consequence of the provision of more transferable skills above and beyond very narrow, firm-specific qualifications.

Firm involvement in the formation of transferable skills is the first source of specificity, and the nature of the education system as such is the second one. In some countries, vocational qualifications are standardized across the whole economy, entail detailed regulations on the content of training and lead to widely recognized occupations (Blossfeld, 1992, p. 174). In other cases, educational degrees mostly serve as general certificates of learning aptitude without providing detailed information on actual vocational or practical skills. Hence, the former kind of system exhibits a higher degree of 'vocational specificity' than the latter. The Iversen and Soskice measure of vocational training intensity partly captures the vocational specificity of the education system, but only insofar as one could argue that the share of students in vocational training and thus the attractiveness of vocational training vis-à-vis other forms of (post-) secondary education are related to the institutional vocational specificity of the system.

The second step in the overarching argument is that the authoritative certification of vocational skills affects the real portability of these skills across firms. The completion of a formalized apprenticeship scheme leading to a recognized

³In the VoC literature, it is not entirely clear whether scholars follow a Beckerian or a Williamsonian conception of asset specificity, although I tend to think that it is more the latter than the former.

occupation allows for a greater mobility of graduate apprentices across firms than informal, non-certified on-the-job training (Streeck, 1996; Thelen and Kume, 1999, pp. 34–35). The higher the vocational specificity of the education system, i.e. the stronger the mechanisms of standardized, authoritative skill certification, the higher the real portability of vocational skills. Obviously, this is at odds with the conception that higher levels of specificity must be associated with lower levels of portability of skills. Compared to a general skills system, an education system with a higher degree of vocational specificity actually goes along with the higher portability of vocational skills across firms, because in the former, workers can only rely on their work experience as an imperfect indication of the skills they have obtained.

So far, I have argued that skill regimes differ with regard to firm involvement in training and the vocational specificity of the education system. A crucial question is whether the two dimensions are related or whether they are independent from each other. I claim that the decision of firms to get involved in skill formation is at best loosely related to the vocational specificity of the education system. Instead, it is strongly shaped by labour market institutions and industrial relations. A number of economists (Acemoglu and Pischke, 1998, 1999; Euwals and Winkelmann, 2001) have shown how labour market ‘imperfections’ impact on firms’ commitment to training. When labour mobility is low, firms are more willing to invest in skill formation because they face a lower risk of workers leaving. When the majority of other firms engage in training, so that only the less-skilled are available on external labour markets, firms have an incentive to set up training schemes as well. When strong collective bargaining systems oblige firms to pay the less-skilled worker the same wage as the skilled worker, firms are pressed to raise the productivity of the low-skilled by means of skill formation (Streeck, 1989, 1992, 1994).

Labour mobility is clearly an important factor influencing firms’ willingness to invest in training. But labour mobility is by itself shaped by labour market institutions and labour relations on the one hand and the availability of skill certificates on the other. For example, labour mobility can be fuelled by workers’ eagerness to move between firms, and educational certificates increase the portability of their skills. In contrast, high levels of labour mobility can also be the result of firms poaching employees from each other. Poaching is one of the fundamental coordination problems associated with training (Lynch, 1994). One effective remedy against it is coordination among employers so that they refrain from hiring away each other’s skilled workers in an act of collective self-restraint. The availability of non-market-based forms of coordination among employers is a crucial difference between countries like the USA and Japan. In a general skills system like the USA, labour mobility is high because of workers’ unwillingness to be bound to one employer and firms’ inability to

coordinate effectively. Nevertheless, firms need to and do engage in firm-specific training, if only because the skills provided in the general education system do not suffice. However, this firm-specific training will tend to be as narrow and specific as possible. In contrast, in the Japanese context, the training provided by and taking place in firms is not narrow, but broad in nature, although, of course, it entails a firm-specific component (Streeck, 1996). In both countries, the vocational specificity of the education system is low, i.e. the real portability of vocational skills is very limited. But, as can be seen from these short examples, it would be premature to conclude that firms in the USA and Japan are involved in skill formation to the same extent and are equally willing to invest in their employees' human capital.

Summing up, the core argument of this section is that skill systems cannot be grouped along a single dimension of skill specificity. Instead, (at least) two dimensions are necessary to map the variety of training regimes in CMEs. One relates to the way vocational skills are authoritatively certified within and through educational institutions, and the other captures the degree of involvement of firms in skill formation and the workplace-relatedness of vocational training.

3.3 *The VoC approach leaves empirical ambiguities about the relationship between skill formation and welfare state policies unresolved*

As was mentioned above, the VoC argument about the relationship between skill formation and social policies has been developed both on the micro level of individual preferences and on the country level. The thought-provoking thesis that emerges from this literature is that employers (in CMEs) support the establishment and maintenance of the welfare state out of rational economic interest (Mares, 2001, 2003; Swenson, 2002; Iversen, 2005). The subsequent discussions in the literature concentrate on re-asserting the explanatory power of partisan and power resources theory (Korpi, 2006; Kitschelt, 2006; Stephens, 2006) and whether unemployment insurance should be treated separately from other social policies because of its closer connection to skill formation (Swenson, 2002; Iversen, 2006; Korpi, 2006). Again, this article is intended to add to the debate from a slightly different perspective. Building on the previous discussion, the question to be addressed is how social policies impact on the mobility of workers and the portability of their skills.

Coming back to Fig. 1, Iversen and Soskice (2001, p. 888) demonstrate a strong positive correlation between their measure of vocational training intensity and government transfers as a percentage of GDP. Thus, it seems, countries with a strong welfare state are also countries with a specific skill system. However, Japan is clearly a (firm-)specific skill system (Estévez-Abe *et al.* 2001, p. 154),

but it is also a country with one of the lowest levels of government transfer spending in the OECD (Estévez-Abe, 2008, p. 2). Obviously, this is at odds with the original theoretical expectations.

From the two-dimensional perspective on skill regimes, the meagreness of the Japanese welfare state is not an inexplicable oddity, but a corollary to the firm-based skill regime (Streeck, 2001). As was argued above, the nature of firms' involvement in skill formation in firm-based skill regimes such as Japan is 'Williamsonian', not 'Beckerian', i.e. firms engage in the formation of broad occupational skills and try to reduce labour market mobility at the same time. One instrument used to bind workers to the firm is offering employees the option of participating in a 'collective governance structure' (Williamson, 1981, p. 567), e.g. in enterprise unions and collective bargaining at the firm level. Another effective instrument is the use of private social policies, such as company-operated pension and health benefit schemes, housing subsidies or support for childrearing. These private, company-based social policies can only be an effective instrument against unwanted labour mobility if there is no generous public welfare state that crowds out such private policies. When benefit levels in public systems are meagre, workers have a strong incentive to stay with their employer, who, in turn, is more willing to invest in the skills of its workers.

This argument does not square well with Iversen's (2005, 2006) interpretation of the role of welfare state policies: for Iversen, a generous welfare state enhances the worker's willingness to invest in more specific skills, because social policies mitigate the labour market risks associated with investments in specific skills. But when labour market risks are reduced, it is also easier, i.e. less risky, for workers to change jobs, because the expected loss in income will be lower. However, higher levels of labour mobility lower the firms' willingness to invest in training. Hence, the relationship between welfare state policies and the formation of specific skills is not as clear-cut as previously assumed: residualist welfare state policies can actually enhance the formation of specific skills, whereas generous social policies can deter firms from engaging in skill formation if they increase labour mobility.

Turning to the other CME cases, it is striking to see that countries with an extended school-based vocational education and training system (i.e. especially Belgium and the Netherlands, but also Sweden, Italy and Norway) score highest in terms of vocational training activity and government transfers (see upper right-hand corner in Fig. 1). But, as was said above, it is reasonable to argue that training systems with a stronger involvement of firms in training (dual system countries) should be regarded as 'more specific' than countries with a school-based VET system. However, countries like Germany, Austria and Switzerland with strong apprenticeship systems belong to the group of conservative welfare states with significantly lower levels of decommodification and welfare state generosity

(Esping-Andersen, 1990) than Scandinavian countries. In the latter, public involvement in VET and the education system in general are much stronger and firm involvement much more limited than in continental European CMEs (Busemeyer, 2007; Iversen and Stephens, 2008). Hence, it is not the case that the most generous welfare states are associated with the most specific skill systems.

Nevertheless, there are important complementarities between the vocational training system and the welfare state in conservative welfare states such as Germany, because educational certificates play an important role in determining access to unemployment benefits (Estevez-Abe *et al.*, 2001, p. 152). However, in contrast to what is implied in Estevez-Abe *et al.* (2001, p. 152), the recognition of vocational certificates in public unemployment insurance schemes does not protect investments in *specific* occupational skills. In pre-Hartz Germany, workers had the right to refuse jobs below their skill *level*, but they were increasingly required to accept jobs on the same skill level, but in a different *occupation*. Studies on Germany have repeatedly shown that about 45% of workers with a vocational qualification work in a different occupation than the one they were trained in (Lauder, 2001 pp. 170–171; Fitzenberger and Spitz, 2004). Hence, the superficial complementarity between unemployment insurance and vocational training need not be a result of underlying functional complementarities, but could be a consequence of the importance of the occupational principle during formative periods of the welfare state.

4. Case studies: the variety of skill regimes in CMEs

To sum up the previous section, I have argued that the question of the real portability of vocational skills should be separated from the actual content of processes of skill formation. The portability of skills depends primarily on the availability of mechanisms of authoritative certification, i.e. the ‘vocational specificity’ of the education system, as well as labour market institutions. In addition, skill systems differ not only with regard to mechanisms for the certification of vocational skills, but also as to how deeply firms are involved in processes of skill formation. The deep involvement of firms entails the provision of transferable, polyvalent skills which are applicable beyond the immediate firm context.

These two dimensions of variation lead to four distinct skill regimes (see Table 1), instead of the dichotomous distinction between general and specific skill systems as described in the VoC literature. This classification of countries, in particular the differentiation of skill systems within the group of CMEs, is in line with various proposals to be found in the comparative education and, increasingly, in the comparative political economy literature (Blossfeld, 1992; Greinert, 1995; Avenir *et al.*, 1999; Crouch *et al.*, 1999; Green, 2001; Werner *et al.*, 2003; Anderson and Hassel, 2007; Iversen and Stephens, 2008).

Table 1 Skill regimes in industrialized democracies

		Firm involvement in skill formation processes	
		Superficial	Deep
Vocational specificity of education system	Low	General skill system (USA)	Firm-based skill system (Japan)
	High	School-based occupational skill system (Sweden)	Workplace-based occupational skill system (Germany)

They form the basis of the following country case studies, in which the inner workings and complementarities of these systems will be explored in greater detail to show that they are indeed distinct models of skill formation and not merely superficial variations. Due to space constraints, the focus will be on skill regimes in CMEs with occasional references to the USA as a shadow case for LMEs.

The use of the concept of a skill *regime* rather than merely talking about a skill or training system is supposed to capture the existence of institutional complementarities. Hence, skill regimes are conceptualized as an interconnected set of institutions in vocational education and training, industrial relations and labour market and welfare state policies that shapes the incentives of workers and firms to invest in different kinds of skill formation and thus impacts on the overall skill profile of a given economy. There is a complex relationship between the way these institutions influence firms' skill decisions and production strategies, on the one hand, and the way the interests of economic actors, based on these production strategies, feed back into the political system to change the existing institutional framework, on the other. I refrain from simply asserting unidimensional causality and instead emphasize the causal interplay of markets and politics and the co-evolutionary processes by which skill regimes develop and change. Nonetheless, I would like to emphasize the point that political actors such as government parties shape the institutional frameworks of industrial relations, education systems and labour markets so that other actors such as employers and unions have to adapt their preferences accordingly in the short term. In Streeck's words:

Ex post accommodation of the outcomes of open and unrelated decisions on sectoral institution building seems to have been at least as important for system building as a priori calculations of the advantages of compatibility and complementarity under conditions of interdependence – calculation of which would be excessively demanding on the farsightedness and discipline of sectoral actors. (Streeck, 2001, p. 31)

The distinction between collectivism/solidarism on the one hand and segmentalism on the other is well-established in the literature (Streeck, 2001; Thelen, 2001, 2004; Swenson, 2002). The present study builds on these approaches and tries to improve our understanding of the varieties of collectivist skill regimes by pointing out the differences between an integrationist skill regime such as Sweden and a differentiated skill regime such as Germany. The main difference is that in Sweden, vocational training is fully integrated into the general education system and the welfare state, whereas in Germany a clear differentiation between academic and vocational education is maintained. At the same time, skill regimes in CMEs are inherently different from the general skill systems of LMEs, because vocational education and training is more prominent in general. In this superficial way, the dichotomous distinction described in the VoC literature is indeed adequate.

The following case studies do not present entirely new empirical material, although the case of Swedish VET as well as the general question about the political foundations of skill regimes have not yet been studied in greater detail. The case studies are supposed to achieve two goals: first, to show that there are three distinct models of skill regimes in CMEs: the segmentalist (firm-based) skill regime (Japan), the integrationist (school-based occupational) skill regime (Sweden) and the differentiated (workplace-based occupational) skill regime (Germany); and second, to hint at the importance of the political foundations of these skill regimes, although a full treatment of this issue clearly lies beyond the scope of this paper.

4.1 *Japan: the segmentalist skill regime*

As is well-known, the provision of firm-specific skills plays an important role in the Japanese skill system (Estevez-Abe *et al.*, 2001). However, the actual content of skills provided in firm-based training is quite broad (Koike, 1983, 1994; Dore *et al.*, 1989; Aoki, 1994; Streeck, 1996; Dore and Sako, 1998; Lauder, 2001), contributing to the perceived competitiveness of Japanese manufacturing in the 1980s (Haake, 2002). Young people generally enter the firm directly after graduating from high school or university. First, they pass through a series of formalized on-the-job training measures which are supposed to introduce them to the firm and do not last longer than a few months. The real investment in the skill formation of their employees starts after a period of years (Leclercq, 1989, p. 190) so that firms can be reasonably sure that employees will stay with the firm after completing training. Furthermore, training investments take different forms and are only partly formalized. The firms themselves are very flexible in designing the content and organization of training (*ibid.*, p. 193). Job rotation schemes are important instruments for human resource development, as are

so-called quality circles and off-the-job training courses in in-house training centres and vocational schools. Firms pay for skill formation indirectly by linking it to advancement in internal labour markets (Koike, 1983). Workers' pay increases are linked to their willingness to acquire new skills and their demonstrated ability to teach young recruits (Koike, 1994).

The general education system is quite similar to the US system, not least because the US occupational powers implemented educational reforms in the 1950s (Gospel and Okayama, 1991). Compulsory comprehensive education lasts until the age of 15, and because of the intense competition for admission to prestigious high schools and universities, nearly all pupils proceed to upper secondary education. At this level, there is a separation between general and vocational high schools, the latter being attended by roughly a quarter of any age cohort (Leclercq, 1989, p. 188; Dore and Sako, 1998). In the curricula of vocational high schools, general skills such as Japanese, mathematics and science as well as discipline and morale are emphasized (Leclercq, 1989, pp. 186–187; Dore and Sako, 1998, p. 46). Because of this, firms do not differentiate much between graduates of general or vocational high schools in their hiring practices.

In sum, the Japanese skill system is characterized by the deep involvement of firms in the process of skill formation, but a low level of vocational specificity of the education system (see Table 1).⁴ These education and training institutions are complemented by a peculiar set of industrial relations, labour market and welfare state institutions which make Japan a special case compared to other advanced industrial democracies.

Japanese industrial relations are characterized by strong enterprise unions, but weak industrial and national unions. The weakening of industrial unions to the benefit of enterprise unions was based on deliberate political decisions in the post-WWII era. The conservative government feared the rise of radical leftist unions and supported management in the establishment of enterprise unions ('second unions'), which were thought to be more pliable (Yong Jeong and Aguilera, 2008). This also facilitated companies' pursuit of segmentalist, firm-based training strategies. In other countries such as Germany, 'worker-initiated job mobility' was a major source of employee power in the hands of strong industrial unions (Streeck, 1996, p. 150; Thelen and Kume, 1999). In Japan, in contrast, workers agreed to let themselves be bound to a firm in exchange for lifetime employment and company benefits (Estévez-Abe, 2008, p. 186). Japanese

⁴Despite the general lack of authoritative skill certificates at the level of initial vocational education and training, the Ministry of Labour runs a nationwide system of certification for vocational skills for older workers. The central government administers exams for very specific skills sets that are, however, not seen as an instrument to enhance labour market mobility, but as a matter of personal satisfaction and pride (Dore and Sako, 1998, p. 134). Moreover, they do not have any consequences in terms of wage rates.

enterprise unionism deliberately blurred the boundaries between workers and white-collar employees, but reinforced the distinction between regular employees in the core workforce and irregular employees, who were not unionized (Aoki, 1994, p. 29; Araki, 2005, p. 274).

More importantly, strong coordination between employers prevented the poaching of skilled workers and thus contributed significantly to the long-term sustainability of the segmentalist skill strategy (Thelen and Kume, 2006, p. 28). For example, firms hire new recruits directly after graduation from school or university and explicitly refrain from attracting the more talented ones with higher wages (Dore *et al.*, 1989, pp. 67–68). Mid-career external labour markets for skilled workers are weakly developed (Aoki, 1994, p. 16; Estévez-Abe, 2008, p. 175). The situation is very different in the USA, despite the similarities in the institutional set-up of the education system. Here, too, large firms pursue segmentalist skill strategies and try to build up strong internal labour markets. But because of a lack of coordination among employers and, as a corollary, higher levels of labour mobility, poaching cannot be prevented as effectively as in Japan. Therefore, the willingness of firms to engage in skill formation is less pronounced, and firms have to rely more on workers' general skills and external labour markets. Because of the missing socio-political and cultural ecosystem, these US firms remain isolated 'islands of excellence' (Streeck, 1989, p. 94) at best.

Labour market institutions such as employment protection shape the skill strategies of Japanese firms as well. Case-based Japanese labour law has developed a stringent set of restrictions on 'dismissals without just cause' (Araki, 2005, pp. 267–268). Employers are allowed to avail themselves of dismissals only as a very last resort. They face stiff penalties (i.e. they have to continue to pay wages for the dismissed workers) if they do not comply (*ibid.*, p. 269). In line with Estévez-Abe *et al.* (2001) as well as Streeck (1992), it could be argued that high levels of employment protection further encourage firms to invest in the skills of their workforce.

Besides employment protection, other types of social policies complement the skill formation strategies of Japanese firms, e.g. by binding the employee to the firm and enhancing workers' cooperation (Estévez-Abe, 2008, p. 173). In line with the argument developed in Iversen and Soskice (2001), workers are compensated for their investments in specific skills by means of generous social policies, but these policies are not provided by the state. Instead, firms themselves 'spend considerable sums to create, if not cradle-to-grave socialism, at least its hiring-to-retirement equivalent' (Shinkawa and Pempel, 1996, p. 281). Of course, large firms at the top of the hierarchy are much better able to provide generous occupational pensions, health benefits, housing allowances and family support than smaller firms, and they have been supported in this by specific public policy arrangements (Estévez-Abe, 2008, pp. 175–176, 181). This leads

to strong segmentalism and dualism in the labour market and welfare state, although without the usual negative side-effects of high income inequality, because inequalities *within* households are more pronounced than inequalities *between* them (Shinkawa and Pempel, 1996, p. 313). Nevertheless, the predominance of company-based welfare policies has prevented the emergence of a generous public welfare state, not least because enterprise unions were quite satisfied with this arrangement and were not willing to increase spending on the still residualist public programs because it did not benefit their membership directly (*ibid.*, p. 318).

At this point, a comment on recent changes in the Japanese political economy is in order. The model of the segmentalist skill strategy based on lifetime employment and enterprise unionism was at its peak in the 1980s and early 1990s. Since then, the Japanese economy has undergone significant changes, the most important ones being a liberalization of financial markets as well as an associated change in corporate governance, the deregulation of labour law and the flexibilization of wage coordination policies with potentially strong repercussions for strategies of human resource development (Thelen and Kume, 2003; Araki, 2005; Abe and Hoshi, 2007; Jackson, 2007; Sako, 2007). The gist of these studies is that despite the recent changes, practices of lifetime employment and associated personnel development strategies are still widespread, particularly in comparison to other countries.

Summing up and building on the work of Kathleen Thelen (Thelen, 2004; Thelen and Busemeyer, 2008), Peter Swenson (Swenson, 2002) and Wolfgang Streeck (Streeck, 2001), Japan can be conceptualized as a segmentalist skill regime. It combines a firm-based training regime with dualist industrial relations and a minimalist welfare state, but includes strong company-based social policies.

4.2 Sweden: the integrationist skill regime

In many ways, the Swedish case is the opposite of the Japanese one. Whereas Japanese politics was dominated by the conservative LDP, the Social Democrats ruled for extended periods of time in Sweden. As a corollary, organized labour on the national and industry level is exceptionally strong in Sweden; it is weak in Japan. And in contrast to Japan, where training is almost completely firm-based, vocational education and training largely takes place in schools in Sweden.

The establishment of the comprehensive secondary school was a long-term project that started in the 1950s but continued until at least the last reform of upper secondary education in 1992. The first reforms of the 1950s and 1960s transformed the formerly elitist and differentiated Swedish school system into more egalitarian one (Ofteidal Telhaug *et al.*, 2006). The 1971 reform of upper secondary education integrated vocational education and training into the

comprehensive school system. Both unions and employers supported this reform: unions, because they wanted to abolish class divisions in the education system, and employers, because they were concerned about the attractiveness of vocational training vis-à-vis academic education (Lundahl, 1997, p. 95). Nevertheless, the political driving force behind the reform was the Social Democratic government, whereas the conservative party wanted to maintain a clear separation between vocational and academic education (Lundahl, 1990; Antikainen, 2006).

Between 1971 and 1992, the Swedish education system exhibited a high level of 'vocational specificity'. Young people could choose between more than 90 study programmes, divided into 2-year vocational programmes and 2- to 4-year academic programmes (Oppen, 1989, p. 140). Only the longer academic programs were 'vestiges of the traditional university entrance studies formerly provided by the gymnasium' (*ibid.*, p. 140). For almost half of each age cohort, vocational qualifications were the major gateway to the labour market.

The 1991 reform of upper secondary education, again supported by both employers and unions (Lundahl, 1997, p. 97), further promoted the blurring of the distinction between academic and vocational education. The number of national study programmes at the upper secondary level was consolidated to 16 (now: 17), only two of which do not include vocational subjects. All of these programmes provide access to higher education and have a common core of general subjects. Responding to criticism, the reform tried to expand the share of workplace-based training within vocational programmes to at least 15% (Lundahl, 1997; CEDEFOP, 1999). In addition, a new and reformed apprenticeship programme was set up in 1992, but school-based vocational education remained dominant throughout the 1990s. Hence, while vocational specificity in terms of the number of vocational programs and qualifications offered decreased, specificity in terms of workplace-relatedness increased.

Despite its strong emphasis on school-based vocational education, the social partners have been heavily involved in vocational training politics. The large export-oriented firms have been the driving force behind the development of vocational education, and they have been lobbying for more intense cooperation between schools and industry (Lundahl, 1997, p. 100). But in contrast to the cases of Japan and Germany, where the segmentalist 'urges' of large firms contributed to the emergence of segmentalist and differentiated skill regimes, Swedish employers became convinced that a combination of general vocational training provided in vocational schools and later firm-based training on the job served their needs best (*ibid.*, p. 100). Moreover, the integrationist approach to VET found the support of trade unions, who valued the permeability of the education system towards higher education (*ibid.*, p. 100). In addition, the Swedish VET system grants the local level ample leeway in implementing national policies, thus promoting decentralized cooperation between firms and schools (Nilsson, 1998).

As a corollary, active labour market policies (ALMP) for the purpose of re-deploying workers from unproductive to productive sectors have been central components of Swedish welfare state policies (Esping-Andersen, 1990, p. 168). Lifelong learning and continuous vocational training are emphasized and preferred to passive income maintenance schemes. Young persons have been a specific focus group of ALMP since youth unemployment increased disproportionately during the crises of the 1990s (Drøpping *et al.*, 1999). In sum, generous Swedish welfare state policies do not primarily serve the purpose of creating or maintaining less portable, specific skills. To the contrary, they aim at improving workers' mobility within and across industries.

The history of Swedish VET demonstrates the path dependency of skill systems and the importance of power resources during critical junctures. Immediately after WWII, the number of apprentices (10,000) was equal to the number of students in state-subsidized vocational schools (Lundahl, 1997, p. 93). Twenty years later, the number of apprentices had declined to 2,000, while the number of students in vocational schools had risen to 75,000 (*ibid.*, p. 93). The efforts of the Social Democratic governments in the post-war era to create a 'Nordic model of education' based on the idea of a comprehensive school (Hickox and Lyon, 1998; Oftedal Telhaug *et al.*, 2004, 2006; Antikainen, 2006; Arnesen and Lundahl, 2006) shifted the focal point in VET from firms to schools. Firms adjusted their personnel and recruitment strategies accordingly. As a consequence, subsequent attempts to revive firm-based forms of VET such as apprenticeship training and the expansion of workplace-based training within school-based programmes have remained partial and unsatisfactory (Crouch *et al.*, 1999, pp. 121–123; Arnesen and Lundahl, 2006, p. 98). During the reform debate of the early 1990s, the Swedish employers' association SAF became less enthusiastic about the revival of apprenticeships than the ideologically motivated conservative party, because 'few companies are able to provide a training broad enough to correspond to modern occupational demands or teach vocational theory' (Lundahl and Sander 1998, p. 46).

In sum, Sweden is a prime example for an integrationist skill regime. The school-based occupational training regime is integrated into comprehensive upper secondary school with the aim of abolishing the distinction between academic and vocational training. Despite the emphasis on school-based VET, Sweden is not a general skills system, because school-based VET programs are supposed to instil occupational and vocational skills into young people to a greater extent than vocational high schools in Japan. Furthermore, the integrationist approach also entails policy-makers reaching out to employers by trying to increase the workplace-based shares in VET, by promoting cooperation in flexible, local arrangements, by involving the social partners in curriculum reform at national level and by strengthening links between education and the welfare state, primarily through ALMP.

4.3 Germany: the differentiated skill regime

The German system of vocational education and training has long been regarded as a successful model for other countries to follow (Finegold and Soskice, 1988; Soskice, 1994; Crouch *et al.*, 1999; Culpepper, 1999; Green, 2001). In particular, the dual apprenticeship system is thought to provide a propitious combination of theoretical training in vocational schools and practical training in a firm setting. The social partners are deeply involved in the corporatist process of devising and reforming curricula for nationally recognized training profiles in more than 300 occupations (Streeck *et al.*, 1987; Busemeyer, 2009). Hence, the vocational specificity of the system is high.

At the same time, firms are strongly involved in the process of skill formation. In line with the characterization of Estevez-Abe *et al.* (2001) of Germany as a mixed system, providing both firm-specific and industry-specific skills, studies have shown that firms participate in apprenticeship training for different reasons: large firms rely on apprenticeship training to recruit later members of the core workforce and are willing to incur significant net costs (Neubäumer 1999; Beicht and Walden, 2004). Smaller firms are most cost-sensitive and value the occupational skills of graduate apprentices moving on external, occupational labour markets (Sengenberger, 1987). The interests of different firms are coordinated under the leadership of local Chambers of Commerce—semi-public bodies with obligatory membership for all companies within a local district that are responsible for monitoring the implementation of national training regulations.

Most importantly, the German system of education and training is based on the principle of differentiation and separation between academic and vocational training. Together with Austria and Switzerland, the German education system is unique in its early sorting of pupils into different streams in secondary education. In the other cases studied here (Japan and Sweden), streaming was abolished in the 1950s and 1960s, a consequence either of political pressure on the part of the occupying US forces or of a conscious political decision. Although various efforts have been made in recent years, real permeability between vocational and academic education on the upper secondary and post-secondary levels remains low (Werner *et al.*, 2003, p. 368).

Again, the German case demonstrates the importance of political forces during critical junctures. In the 1970s, when Sweden implemented its ambitious reform of upper secondary education, similar proposals were put forward by the Social Democratic government in Germany (Baethge, 1983). The proposals comprised the integration of vocational education into comprehensive secondary schools, the strengthening of school-based VET to the detriment of firm-based training, and the introduction of a training levy to encourage the participation

of non-training firms and to finance out-of-firm training centres. The ambitious reform eventually failed for a number of reasons: employers and their associations were adamantly opposed to the reform (in contrast to the situation in Sweden) and were associated with the Christian Democratic party, which exercised pressure on the government via the second parliamentary chamber (*Bundesrat*). The federal government finally backed down because of internal conflicts between the Social Democrats and the liberal party, but also because it feared a full-scale retreat of firms from apprenticeship training (Baethge, 1983; Busemeyer, 2009, chapter 3.1).

The decision against integrating firm-based training into upper secondary education set the German skill regime on a path different from Sweden's. In the 1970s, the unions had been strongly in favour of the integrationist model. Over time, however, they became increasingly supportive of firm-based training because they started to value the advantages of the firm-based apprenticeship model, such as smooth transitions from training to employment and the early socialization of young workers into the firm (Streeck, 1994). Nowadays, (most) unions and employers are strong supporters of the dual training system and resist attempts by policy-makers to strengthen school-based VET, as the example of the latest (2005) reform of the Vocational Education and Training Law shows (Busemeyer, 2009, chapter 3.4).

The differentiated training system is complemented by a dual system of industrial relations. The power of organized labour at the national and industry levels is stronger than in the case of Japan, but union density is lower than in Sweden. On the firm level, the participation of labour in larger firms is guaranteed through mandatory works councils that were initially set up by conservative policy-makers in the 1950s (Müller-Jentsch, 1995) to weaken the power of industrial unions—a striking similarity to the Japanese case. In the history of German training and labour market policies, there has been a tension between segmentalist solutions and collectivist approaches (Thelen and Kume, 1999; Thelen, 2004). However, industrial unionism prevailed and segmentalist urges were staved off because of the 'continued existence of an external market for skilled labor based on portable certificates, which gave workers the possibility to opt against a skill formation regime that threatened to deprive them of their independence as it took away their freedom to quit' (Streeck, 2001, p. 23).

In the heyday of the German model in the 1970s and 1980s, there was a strong complementarity between collective wage bargaining and vocational training. Vocational certificates were directly connected to the tariff classification of groups of workers. Hence, workers had a strong incentive to engage in vocational training instead of working as an unskilled employee. At the same time, the system of occupational qualifications did not distinguish between different levels of training, going back to the historically and culturally important

'occupational principle' (*Berufskonzept*, see Baethge and Baethge-Kinsky, 1998). As a consequence, employers could not use occupational qualifications as a means to implement wage differences between employees. This, in conjunction with strong collective wage bargaining, was a strong incentive for employers to invest in the skill formation of their less-talented workers, because they had to pay them the same wage rates as the more productive ones (Streeck, 1989).

The skill investment strategies of firms were also shaped by labour market and welfare state policies. Germany combines strong employment protection with relatively generous unemployment protection (Estevez-Abe *et al.*, 2001, p. 154) and has been regarded as a prototypical conservative welfare state (Esping-Andersen, 1990). High levels of employment protection have supported segmentalist personnel strategies in large firms. These firms are willing to pay higher wages than stipulated in collective agreements and to incur high net costs in training to build up the future core workforce. The formerly quite generous unemployment insurance system granted skilled workers significant leeway in refusing job offers that did not fit their skill qualifications (Estevez-Abe *et al.*, 2001) and provided income support during periods of unemployment. What is more, there is a close connection between one's position on the labour market and within the social security system (Germany being the prototypical conservative welfare state). Educational certificates such as vocational degrees play an important role in identifying 'suitable' jobs for the unemployed. However, job suitability is not defined according to specific occupations, but mostly with regard to the skill *level*, i.e. unemployed people could refuse jobs that were more than one level below their current skill level. However, because of the significant amount of general skills entailed in German vocational training, almost half of the people with vocational qualifications worked in a different occupation than the one they were trained in (Lauder, 2001, pp. 170–171; Fitzenberger and Spitz, 2004).

Since the 1980s, the political economy of Germany has changed considerably (Streeck, 2009)—probably to a greater extent than those of the other countries studied here. The decentralization of collective bargaining, the declining association density of unions as well as employers' associations and welfare state reforms, of which the 2004 Hartz reform of unemployment insurance is a very prominent example, have partly transformed the character of the system. Pressure on the dual training system has increased, since more and more firms have been retreating from offering training places, with the result that transitions between school, training and employment have become less smooth than before (Thelen and Busemeyer, 2008; Busemeyer, 2009). The decentralization and flexibilization of collective wage bargaining has weakened the complementarity between vocational training and wage policies. The Hartz reform of unemployment insurance has significantly increased pressure for unemployed persons to

accept any job offer, independent of whether it fits the person's skill profile or not, and promoted tendencies of labour market dualization. Some scholars have summarized these tendencies as a trend from a collectivist to a more segmentalist skill regime (Thelen and Busemeyer, 2008), because a sizable share of firms—in particular, larger, export-oriented firms—remain committed to vocational training, while a growing share of young people do not get access to protected internal labour markets.

For the present purpose, however, it is adequate to point out the remaining differences between the German skill regime and the other cases studied in this paper. In contrast to the Swedish system, a clear differentiation is maintained between vocational and academic education—on all levels of the education system. In contrast to the Japanese case, a sizeable share of firms remain committed to the dual training model, combining in-firm training with education in vocational schools. However, employers jealously guard the principle of firm autonomy in organizing the firm-based training component and adamantly oppose further attempts to integrate vocational training into comprehensive secondary schools. Here, again, a clear differentiation between (general) education and training is maintained.

5. Conclusions

This article started with a critique of the currently prominent VoC approach to the study of skill formation. The main points of criticism were the underestimation of the variation of skill regimes in CMEs and the remaining ambiguities surrounding institutional complementarities between training, industrial relations and labour market and welfare state institutions. To improve our understanding of the varieties of skill regimes in CMEs, three case studies were performed to demonstrate that the variety of skill regimes is more complex than the dichotomous distinction between LMEs and CMEs implies. Instead of grouping countries along a single dimension ranging from general to specific skills, I argued in favour of using two dimensions of variation: the degree of firm involvement and investment in training on the one hand, and the degree of vocational specificity of the education system as an indication for the availability of authoritative mechanisms for skill certification on the other.

This exercise has led to the identification of three distinct skill regimes in CMEs, each with its own particular set of institutional complementarities. The segmentalist skill regime of Japan is founded on the firm-based provision of vocational skills. The real portability of these skills is severely constrained by labour market institutions, although they are broad in nature and could, in theory, be applied in other firm contexts as well. The integrationist skill regime of Sweden, in contrast, emphasizes school-based forms of vocational training and

the integration of vocational education into a comprehensive upper secondary school model. In the differentiated skill regime of Germany, the differentiation between academic and vocational education is maintained at all levels of education, and firms guard their autonomy and oppose further encroachment from public authorities. However, vocational skills are certified in nationally recognized occupational profiles, contributing to the greater mobility of workers between firms than in the Japanese case.

The common element of skill regimes in CMEs is that vocational education and training in general is more important than in general skills systems such as the USA. To the extent that a large share of young people opt for VET instead of college education, skill systems in CMEs are indeed different from systems in LMEs. However, given the demonstrated variation of skill regimes in CMEs, this is a superficial and unduly simplifying distinction. Moreover, in countries such as the UK and Australia, firm-based forms of VET are still very much on the radar of policy-makers (Finegold and Soskice, 1988; Gospel, 1994), although the associated thorny coordination problems are harder to solve in LMEs, as Hall and Soskice (2001) have famously argued.

Future research should concentrate on carving out details on the political foundations of the identified skill regimes. For obvious reasons, the present paper could only briefly touch on these issues, but broad tendencies are easily identifiable. The segmentalist skill regime is clearly associated with the strong position of employers, weakly organized labour on the level above the firm and the long reign of the conservative LDP party. In contrast, the integrationist model of Sweden is based on the exceptional strength of organized labour and Social Democratic hegemony, especially in the important formative period after WWII. Finally, the differentiated skill regime of Germany is better understood if the peculiar position of Christian Democrats on education policy is factored in. Christian Democratic education policies emphasize the need to offer each young person the type of education that is ‘most adequate’ in terms of the person’s talents and her later position in society. However, in contrast to secular conservatism, Christian Democrats also recognize the obligations of employers to contribute to the collective enterprise of skill formation—hence the emphasis on ‘private interest government’ (Streeck and Schmitter, 1985) through associations.

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