

Small States and Skill Specificity

Austria, Switzerland, and Interemployer Cleavages in Coordinated Capitalism

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The varieties of capitalism literature has put skill systems at the center of comparative politics. Yet its claims about skill specificity are driven by two large coordinated economies, Germany and Japan. This article examines political change of skills in two small coordinated economies. Switzerland has expanded its general skills orientation, whereas Austria retains a highly specific skills system. The cause of this divergence is the different interests of small and large employers: Small employers are more cost sensitive than are large employers, which leads them to oppose the introduction of more general education. The study also shows that the primary measure of skill specificity used in quantitative work—vocational training share—is unreliable. It fails to distinguish between secondary and tertiary vocational training, which have opposite effects on skill specificity. The article develops and justifies an alternative measure—tertiary vocational training—that better predicts the skills clusters observed in advanced capitalism.

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Institutions of vocational training now occupy a central place in comparative political economy. Scholars contributing to the literature on the varieties of capitalism argue that historical conflicts over skill-provision systems have had a substantial impact on the continued institutional divergence among the advanced capitalist countries (Iversen & Soskice, 2005; Thelen, 2004). There is widespread agreement among scholars that the skills systems of most liberal market economies (LMEs), such as the United States and the United Kingdom, differ in predictable ways from those of coordinated market economies (CMEs), such as Germany and Japan; these differences are said to condition a range of political choices, from the shape of the welfare state to the level of wage bargaining (Hall & Soskice, 2001;

Yamamura & Streeck, 2003). The training systems of the CMEs are heavily oriented around firm-based training, and the skill sets they confer are said on average to be less general, or more specific, than in the LMEs (Soskice, 1994). If employers optimize their production processes around such skill sets, they then become a powerful political constituency for educational and even social policies that protect investments in such specific skill sets (Estevez-Abe, Iversen, & Soskice, 2001).

The politics of skills is therefore fundamental to the politics of advanced capitalism. But what do we know about how skill-provision systems change over time? The principal empirical studies of this policy area stress two key points. First, government attempts to legislate large shifts in education and training systems are almost certain to fail, as long as the underlying institutional condition of employer coordination is absent (Culpepper, 2003; Finegold & Soskice, 1988). Second, in CMEs, organized employers will use their collective power to prevent government intervention that could deprive them of the skill sets on which they rely for production (Thelen, 2004; Wood, 2001). Both these findings stress the auto-stabilizing features of skill systems in response to government policies that try to change them. Yet such features merely mean that government policy and partisan turnover are the wrong places to look for the politics of institutional change in skills systems. As in other parts of the political economy, much of the battle over social change may take place beyond the parliaments and bureaucracies under whose light many political scientists prefer to look for political conflict (Culpepper, 2005; Helmke & Levitsky, 2004).

This article uses the issue of vocational training in advanced capitalism as a study in the politics of institutional change, and it draws heavily on the findings of the literature on the varieties of capitalism about the political significance of employers in shaping skills systems (Hall & Soskice, 2001). Yet it also raises important puzzles for that literature by focusing on the little-studied cases of Austria and Switzerland. Although at least 10 countries are conventionally considered to be CMEs, the literature on skills in CMEs is driven by empirical studies focused almost exclusively on two countries, Germany

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and Japan, often compared with the LMEs of the United States or the United Kingdom (Culpepper & Finegold, 1999; Finegold & Soskice, 1988; Soskice, 1994; Thelen, 2004).¹ Despite similar starting conditions in the postwar period—small size, high exposure to the international economy, and the dual apprenticeship system—Switzerland has dramatically shifted toward the provision of greater general skills, whereas Austria remains tied to a model based on specific-skill provision. That such similar CMEs have moved in such different educational directions poses a puzzle for the varieties of capitalism literature. This article examines the causes of this puzzle and considers its implications for future research on the politics of change in training systems.

Three principal findings emerge. First, the study confirms the importance of the cleavage in CMEs between small firms and large firms. This is a cleavage that previous studies have documented in industrial relations (Silvia, 1997; Thelen, 2001) and social policy (Mares, 2003). As in these other policy areas, small employers are much more cost-sensitive than are large employers in the area of skill provision. Large firms dominate the Swiss employer movement and political economy, whereas small firms dominate employers organizations in Austria. These large firms have led the political push for the increased level and generality of vocational education, whereas cost-conscious Austrian small firms have opposed any move that might threaten their access to cheap labor with specific skills. The second finding of the article is that much of this conflict happened below the radar of national legislative politics. Informal experimentation in local institutions by Swiss employers, and dogged opposition by small firms to such experimentation in Austria, contributed as much as parliamentary battles to the divergent outcomes in skill systems by 2005. I underline this point by comparing the initiative in the two countries to create universities of applied sciences (*Fachhochschulen*—FH) in the mid-1990s. Though formally equivalent and legal programs, they had very different effects; this difference grew out of the earlier battles over the expansion of general skills in the vocational education system.

A third finding of the article will seem technical to some readers, but it is of great importance for quantitative work that uses the variable of skill specificity—which several influential studies in political science put at the center of their analysis (Estevez-Abe et al., 2001; Iversen & Rosenbluth, 2006; Iversen & Soskice, 2005). Many political scientists ignore the details of skill systems. Still, the functioning of this area of the economy has important theoretical and practical implications (Crouch, Finegold, & Sako,

1999). I develop the indicator of tertiary vocational training (TVT)—equivalent to that provided by American community colleges—and show that it is more reliable than measures slanted toward secondary vocational training in predicting the skill clusters that we observe in advanced capitalism and as such is a better (inverse) indicator of skill specificity. This is not only a measurement issue. TVT is an important part of tertiary educational systems in many CMEs, and Austria's weak performance in this area was highlighted as a major concern in the 2005 European Innovation Scorecard (EIS, 2005). In the face of global competition for investment, the human capital weaknesses of many European systems are perceived as a pressing cause for concern in policy circles (Pisani-Ferry, 2006).

The next section of this article shows why small and large firms have different skill interests in a CME, whereas the third part develops the argument for TVT as a reliable indicator of skill generality. The fourth part justifies the comparison of Austria and Switzerland on methodological grounds, and the following section compares the evolution of vocational training in these two countries during the postwar period, showing that the divergence between their skill regimes has been driven almost entirely by the large firm—small firm division. The sixth part shows that the formal introduction of FH did little to change the skills legacy that was determined by developments in the preceding decades. The final section concludes with a consideration of the puzzles that face the varieties of capitalism literature, once we have recognized that most small states in world markets—the bulk of the CMEs recognized in that literature—actually have markedly more general skill profiles than do Germany and Japan.

The Interclass Cleavage Between Small and Large Employers

One of the most important recent findings in the social policy literature is the recognition that historical battles over the welfare state did not pit employers against labor as much as employers against themselves (Mares, 2003; Swenson, 2002). The difference in preferences between small and large employers has been demonstrated in empirical studies of welfare regimes (Mares, 2003), wage-bargaining systems (Silvia, 1997; Thelen, 2001), and systems of education and training (Martin, 2000; Thelen, 2004). Almost invariably, this cleavage reduces to divergent attitudes over sensitivity to cost: Small firms are much less able than large firms to bear increases in costs of social policy, wages, or job training.² If employers are

the dominant voice in the political economy, then we should look first to differences in employer preferences to explain variation in political economic institutions: why countries differ among themselves and why they change over time. This article uses the cases of education and training to explore the potential payoff in emphasizing the cleavage between small and large employers to explain significant variation and change within the coordinated economies of Europe, focusing especially on two of the smaller economies, Austria and Switzerland.

The politics of employer preferences over education starts with a simple premise: All firms want to pay as little as they can for employee training. As Gary Becker (1964) observed, companies are especially loath to pay for skills that employees can use at any firm. General skills are those that are entirely transferable, industry-specific skills are those of use to multiple firms in one industry, and firm-specific skills are useful only to an individual company (Estevez-Abe et al., 2001). As anyone who has actually tried to get a job knows, though, employers never care only about the *specificity* of skills of a potential hire, they also care about the general skill *level* of a prospective employee. Does the potential employee have the general education necessary to learn the firm-specific skills required for the job?

The obvious fact that general skill levels differ has important implications for the different preferences of large and small firms in CMEs. The higher the level of technical, specialized (specific) knowledge an employer needs, the higher the general education demanded by that employer. There are good reasons to think that large firms invest more than small firms in the development of skills in CMEs. We know from the pioneering theoretical work of Soskice (1994) that the German apprenticeship system works differently at large firms, which have lucrative internal labor markets, than at small firms. Large firms invest significant sums per apprentice and tend to have a very high retention rate for the apprentices they do train, which is consistent with their heavy investment in those apprentices. Small firms make little, if any net investment, in their apprentices, and the rate of turnover among apprentices is much higher at these firms (Wagner, 1999). The data presented in Table 1 show that the largest German firms spend *15 times as much* per apprentice, per year, as do the smallest German firms. Large firms use apprenticeship and heavily invest in it because it confers firm- and industry-specific knowledge at the same time that it confers more general skills; it does this while giving the apprentice a low wage. Meanwhile, Germany's imperfect labor markets exacerbate the cost of hiring potential lemons and training them only in firm-specific skills (Culpepper, 2003, pp. 32-42; Soskice, 1994, pp. 44-47). This combination

Table 1
Net Average Annual Training Costs per
German Apprentice, by Firm Size

Employees	1-9	10-49	50-499	500+
Cost (€)	542	1,423	3,402	8,176

Source: Beicht and Walden (2004, p. 102).

of skills taught at a high level is a necessary component of the strategy of incremental innovation pursued by large German firms (Hall & Soskice, 2001; Yamamura & Streeck, 2003).

Small German firms, like companies in other CMEs, are much less concerned about either the high level of general skills of their entering apprentices or the adjustments to company-specific organizational processes that goes on at large German firms. They need both lower general skills and lower specific skills than their large, technologically advanced brethren. In short, they need lower level skills, and they are much less willing to pay for skills beyond what they need. Small employers in the German dual system, thus, behave in the way that G. Becker (1964) suggests they should: only paying for the skills they use in production. The elaborate occupational qualifications of the German dual system mandate broader skills than many of these small firms need, and the small firms resist paying for them. Small firms have greater cost sensitivity than do large firms to the costs of conferring extra (general) skills. Large firms, which can fall back on correspondingly greater resources, are less concerned with paying for extra skills they do not need than with ensuring they get the minimal skill level necessary to hold onto their international product market niches.

Where employers are the dominant voice in the politics of vocational training, which they usually are, we should expect to see conflict between these two groups, and we should expect the more powerful group to impose its preferences on the less powerful group. We expect the behavior of companies in apprenticeship—the dominant form of secondary education in Austria, Germany, and Switzerland—to be a good predictor of how companies of different sizes will view vocational training more broadly. Empirically, we expect small employers to oppose any measures that increase the general skill content of training or those that would entice apprentices to pursue further training. Each measure effectively increases the costs of apprenticeship training for the small employer, either by reducing the time the employee is working on firm-specific problems or by reducing the supply of post-training apprentices,

driving up the wages of those who remain. We expect small employers to support measures that retard movements from vocational education to general education tracks for the same reason. Although they have no reason to favor the growth of universities, small employers will prefer the expansion of universities to the expansion of TVT because it is harder to move from the vocational track to the university track. Small firms, in short, will fight, first, to secure the continuity of a vocational secondary track and, second, to oppose building connections between the vocational track and the rest of the educational system.

Large firms, on the other hand, want to secure a general level of education among their employees that is consistent with their continued ability to innovate and compete in international markets. Their preferred means of expanding higher education is to keep it closer to the needs of the economy, so vocational education will still be preferred to general education. However, unlike small firms, large firms want to expand the scope of tertiary vocational education and increase the ability to move between vocational and general tracks. This is because they want to attract young people with solid attainments in general education: As the level of tertiary education rises, large firms increasingly want to be able to attract students who might be tempted by higher education (perhaps after an apprenticeship). Large firms therefore favor measures that keep the educational system close to the needs of the firm (unlike in LMEs) while making it attractive to students who may want spend time in general or higher (tertiary) vocational training.

Measuring Skill Specificity

Despite the attention that vocational training has received as a central institution of advanced political economies, there has been little work on how to measure the skill profile of individual countries in a cross-nationally comparable fashion (Amable, 2003). Virtually the only existing attempt to develop a cross-nationally valid indicator of the specificity of skill-provision systems, devised by Estevez-Abe et al. (2001), is vocational training share (VTS), which heavily depends on the share of secondary school students enrolled in vocational training.³ On some levels, this makes sense: By the very definition of the terms, we expect vocational skills to have a narrower (more specific) ambit of application than general skills. Students who specialize early in vocational training stop the acquisition of general skills earlier than their peers, who are more likely to be enrolled in general education institutions.

The problem with the VTS measure as an index of skill specificity—where more VTS should equal more skill specificity, *ceteris paribus*—is that it fails to distinguish between secondary vocational education that directly leads to the labor market and that which leads to higher level (tertiary) training. It seems reasonable to claim, as the use of the VTS measure implicitly does, that those countries with lots of terminal secondary vocational education have more specific skill profiles than those where secondary general education leads on to tertiary (post-high school) education. Yet for many countries, substantial secondary vocational training leads to substantial TVT. Thus, secondary vocational training is providing the general skills necessary to succeed in the tertiary educational system. All those countries where high levels of secondary vocational training lead to high levels of TVT in fact have more general skill profiles than those countries where vocational training is highly developed at the secondary level only. VTS misses this distinction, and indeed it perversely ranks countries with extensive secondary and vocational training as having more specific skill profiles than those countries with only secondary vocational systems.

What would this look like empirically? Table 2 depicts two countries, Country A and Country B. For the period 1980 to 1995, the countries have almost identical VTS scores: 35% for Country A, 36% for Country B. These are among the highest scores in the countries assembled by Estevez-Abe et al. (2001), and the VTS score codes them both as having very specific skill profiles. Yet if we look at the breakdown between students enrolled in vocational education in secondary and tertiary vocational education in the two countries, we see a very different picture. In Country A, 98% of those enrolled in vocational education are at secondary school level; in Country B, only 67% of vocational training students are enrolled at the secondary level. So virtually none of the students in Country A continue to TVT, whereas fully one third of the students enrolled in vocational education in Country B are enrolled in TVT. These numbers suggest that half the students enrolled in Country B's secondary vocational educational institutions do not exit the educational system after their high school degree but instead move into tertiary institutions. These students are much more likely to have general skill profiles than are those in Country A, almost all of whom leave education to go to the labor market. Country A is Italy and Country B is Sweden, and it is clear that the Swedish skill system confers substantially more general skills than does the Italian system.

This fact is not only obvious but indeed recognized by the categorical rankings used by Estevez-Abe et al. (2001). They distinguish among four categories of countries: general skills countries (United States, United

Table 2
Which Country Has a More Specific Skill Profile?

	Secondary Proportion of Vocational Training	Tertiary Proportion of Vocational Training	Vocational Training Share Score
Country A	98	2	35
Country B	67	33	36

Kingdom, Canada, Australia, New Zealand, and Ireland); industry-specific skills countries (Norway, Finland, Belgium, the Netherlands, Switzerland, and Denmark); industry- and firm-specific countries (Sweden, Germany, and Austria); and firm-specific countries (Japan, France, and Italy). Curiously, *their quantitative indicator (VTS) does not support their assignment of countries to these four categories*. Table 3 uses the country clusters designated by Estevez-Abe et al. themselves, arraying them on a single dimension running from most specific (least general) to least specific (most general). Among the three countries designated “most specific skill” countries by Estevez-Abe et al.—Japan, France, and Italy—*only Italy scores high on their vocational training measure*. If VTS is a valid indicator of the specificity of skill conferred by national skill-provision systems, all three of these countries should have very high VTS scores. Instead, Japan (with 16%) has the lowest score on VTS of all the non-Anglo-Saxon countries, France (with 28%) sits in the middle of the rankings, and only Italy (with 35%, fourth highest in the 18-country sample) ranks high on both VTS (the measure used by Estevez-Abe et al.) and skill specificity (the concept used by Estevez-Abe et al.). A reliable indicator of skill specificity would monotonically decrease moving from left to right (most specific to least specific) in this table. Clearly, VTS does not. VTS heavily depends on the share of secondary school students enrolled in vocational training.⁴ Almost the only important thing this measure tells us is that the Anglo-Saxon countries do not have significant secondary vocational education systems, which is true but not surprising. It is only the very low rate of apprenticeship training in the Anglo-Saxon countries (all located in the “most general” box) that gives this measure plausibility.

The VTS measure fares poorly as a predictor of skill specificity because it fails to pick up (and indeed obscures) one crucial difference among countries with regards to skill specificity: whether or not students broadly continue on to tertiary education (i.e., beyond the American high school level) after completing secondary school. A tertiary educational certificate, vocational or

Table 3
Skill Profiles in Advanced Capitalist Countries
Using Vocational Training Share (VTS)

Most Specific		Most General	
VTS 26.3%	VTS 30.7%	VTS 37.0%	VTS 6.8%
France	Austria	Belgium	Australia
Japan	Germany	Denmark	Canada
Italy	Sweden	Switzerland	Ireland
		Finland	New Zealand
		Norway	United Kingdom
		Netherlands	United States

Source: Estevez-Abe, Iversen, and Soskice (2001).

Note: VTS refers to the vocational training share, as operationalized by Estevez-Abe et al. (2001). This table replicates their own categorical assignment of countries, on a single dimension, running from most specific (least general) skills to least specific (most general). If VTS is a valid measure of the skill-specificity characteristic of a national system of skill provision, the VTS number should get smaller as we move from clusters of most specific to least specific skills (left to right). Clearly, VTS does not decline, but instead increases, except in the case of the Anglo-Saxon countries.

general, presumes a sufficient level of “general” skills (often math and literacy) to get into tertiary education. Other things equal, then, more tertiary vocational education is a sign of more general human capital; it is an indicator of generality (or an inverse indicator of specificity). Table 4 arrays countries according to the proportion of the youth age cohort enrolled in TVT using the same four-category distinction used in the VTS table. Note that the two countries with the highest proportion of an age cohort enrolled in vocationally oriented tertiary programs in 1995 were Canada (39%) and the United States (31%), archetypal LMEs widely credited with having the most general skills systems.

The most important thing to notice about this rearrangement of classifications in comparison to the previous table is what happens to the small CMEs: Belgium, Denmark, Switzerland, Finland, Norway, the Netherlands, and Sweden. Estevez-Abe et al. describe this group of states (minus Sweden) as having the most general education systems among CMEs, but their measure of specificity (VTS) is highest for these states, suggesting they should have the most specific systems. TVT, by contrast, correctly identifies Sweden, the Netherlands, and Belgium as having highly general skill systems—though less general than those of the United States and Canada—and

Table 4
Skill Profiles in Advanced Capitalist Countries
Using Tertiary Vocational Training (TVT)

Most Specific			Most General
TVT 3.9%	TVT 12.3%	TVT 15.7%	TVT 29.9%
Italy	France	Finland	Sweden
Austria	United Kingdom	Switzerland	Netherlands
Denmark	Japan	Ireland	Belgium
Germany		New Zealand	Australia
		Norway	United States
			Canada

Source: UNESCO (various years). Torben Iversen generously shared his data gathered from UNESCO for this project. These data have been double-checked and corrected with additional data from the OECD, the Dutch Ministry of Education, the German Statistisches Bundesamt, and Statistik Austria.

Note: TVT refers to the proportion of an age cohort enrolled in postsecondary (3-year and 2-year college level) vocational education. This table groups countries according to their 1995 level of tertiary vocational training.

Finland, Switzerland, and Norway as lying the next highest group (along with two LMEs, Ireland and New Zealand). Only Denmark is incorrectly placed by TVT, which probably results from the unusual characteristics of the Danish system, in which “a large number of workers develop their working careers by holding jobs in many different firms and simultaneously attending further training courses” (Kristensen, 2006, p. 301) rather than TVT institutions.⁵ Certainly, the Estevez-Abe et al. (2001) classification of the Swedish case is curious and entirely inconsistent with the findings of the best English-language study to include the Swedish training system, that of Crouch et al. (1999), which concluded that Sweden performed “probably best” among all countries in their study “in providing a high level of general skills for its whole population” (p. 85). TVT rectifies this error as well.

Why does this matter for the real world of politics and the way political scientists analyze it? A foundational claim of the varieties of capitalism literature is the distinction between the specific skills orientation of employers in CMEs and the general skills orientation of employers in LMEs (Hall & Soskice, 2001; Iversen, 2005). If we are comparing Germany and Japan to the United States and Canada, that distinction is most certainly correct. Yet

if we look at the bulk of the CMEs—the small Western European states—it is clear that most of their models are based on much more general skill profiles than those preferred by employers in Germany. This is a large puzzle for the comparative political economy literature. It is, moreover, a puzzle with practical implications. Many of the European states that have proven most nimble in adapting to the demands of globalization are those small states. The top three scoring states on the EIS are Sweden, Finland, and Switzerland, and all benefit from the survey's weighting of tertiary education and lifelong education as innovation drivers (EIS, 2005). More general national skill profiles are consistent with being able to train and retrain workers, and this is consistent with an ability to react to changes in the international economy. One of the great strengths of the small European economies is incorrectly represented by the measure of vocational training that is often used in comparative political economy.

The purpose of this demonstration is not to claim that TVT is an unproblematic measure of skill generality. TVT is, however, a clear improvement on VTS as an (inverse) indicator of skill specificity, and there are reasons to doubt that the quantity VTS tracks in an economy is the specificity of the skills its educational system produces. We need to focus on skill levels and on training type in determining the assignment of skill specificity scores.⁶ TVT captures this element much better than VTS, and future research on skills systems and their political impact should devise composite measures that improve on the ability of TVT to combine level and training type.

The Methodological Advantages of Comparing Austria and Switzerland

The appeal of comparing Switzerland and Austria in the area of skills politics is preeminently methodological. Both small, open economies heavily rely on a dual system of apprenticeship training, as does their larger German neighbor. Skills systems change only incrementally, and where they wind up is strongly influenced by where they started (Thelen, 2004). No two countries are identical, but the similarity in the position and institutional background of these two countries is striking, and their size similarity makes each of them more like the other than the third country with which they share the dual system of apprenticeship training (Germany). It is methodologically useful to have a pair of countries where the beginning point of the overall skills system is so similar, whereas the variation on the

independent variable—relative dominance of small versus large employers—is so stark. Among the largest 500 companies in Europe counted by market capitalization, Switzerland has the single highest proportion of large companies to GDP; Austria has the lowest figure in Western Europe (<http://specials.ft.com/ft500/may2001/>).⁷

Any discussion of political change in small states naturally starts with the seminal contribution of Peter Katzenstein (1984, 1985). Katzenstein's analysis was one of the first in contemporary political economy to show that organized employers have been an important force in determining the structure of what we now call CMEs. Although Katzenstein's (1985) work noted differences among the preferences of Austrian employers, he more heavily emphasized the negotiated nature of change in these countries and the "low-voltage politics" (p. 32) they shared. The literature on small states that built from Katzenstein's insights developed in two broad directions. The first, associated with Visser and Hemerijck's (1997) study of the Dutch miracle, emphasizes the consensual capacity of small-state corporatism, attributing to this organizational capacity the success of these states in developing and implementing difficult reforms. The second direction essentially challenges the focus on consensual politics, arguing that such regimes were less innovative (U. Becker & Schwartz, 2005; Schwartz, 2001) and certainly less consensual (Jones, 1999) than the small-state corporatism literature credits them with being. Although I do not question the considerable adjustment capacity of corporatist institutions, I share the approach of Jones (1999) in drawing attention to the fact that institutional change, even in rich small states, is likely to be the result of conflict between distributive coalitions: small versus large firms.

Throughout the postwar period, Austria and Switzerland have been small, open economies with a strong export orientation (Harvey, 1963; Katzenstein, 1984). Yet the nature of the industry producing these exports, and the organizational expression of these industries, was dramatically different in the two countries. This is a result of both industrial and political structure. Austrian industry was heavily nationalized immediately following the war, and this fact marked Austrian industrial structure until privatization began in the late 1980s. In the mid-1970s, more than half of the shares of publicly listed companies were owned by the state or state-owned enterprises (Lacina, 1977, p. 8). This ownership was concentrated in the largest firms: Of the 50 largest firms in Austria, two thirds were nationalized, and only 10% were in private, domestic hands (Katzenstein, 1984, p. 50). The defining feature of the Austrian economy in comparative context during the

postwar period is the predominance of small- and medium-sized firms (Hussain, 1988). The fact that the few existing large firms were almost entirely state owned through the 1990s has left the representation of employers' interests in Austria dominated by small, private firms.

It is important to understand this small-firm predominance to grasp the nature of employer representation in Austria. The two major representatives of employers are the Economic Chamber, a public law body to which all companies must belong, and the employers association, which is voluntary. As is widely known from the literature on neo-corporatism, the role of the chambers is more important in Austria than in most countries because of their formal consultative role in a variety of political venues. Less remarked on in comparative perspective is the fact the federal employers association—which in many European countries is dominated by the voices of large employers—was in Austria much more responsive to relatively small companies for much of the postwar period. Nationalized companies were not members of the employers association, and the relatively few large, private firms found themselves in the distinct minority in the association (Katzenstein, 1984). Thus, the organizational capacity of large employers in Austria is, in comparative perspective, low.

By contrast to Austria, both the structure of the Swiss economy and its organizational architecture favor the representation of large firm interests. Internationally oriented, large firms, both financial and nonfinancial, dominate the representation of Swiss business interests. Indeed, a 1974 survey that asked about the degree of influence of interest groups showed that 60% of the Swiss public thought “big business” had “too much influence” over Swiss politics, which was by far the largest such opinion held about any group, including banks (Sidjanski, 1974, p. 115). Swiss business organization is divided, as in Germany, between a business association concerned with trade and export-promotion policies and an employers association, with regional and sectoral affiliates, concerned primarily with firm-based issues such as wages and vocational training. The most important of the sectoral associations in the Swiss context for most of the postwar period was the association of metal and machine employers (first called the ASM and later *Swissmem*,⁸ and comparable to *Gesamtmetall* in Germany).

The next two sections demonstrate the gradual divergence of Austrian and Swiss training institutions under the pressure of these two different employer configurations. Using UNESCO data on TVT, it appears as late as 1980 that Switzerland and Austria exhibited similar skill profiles: Vocational training in both countries was very largely secondary training. Only 5% of those in the Swiss tertiary education age cohort were enrolled

in tertiary vocational education, whereas only 2% of Austrians were. Secondary education in both countries was dominated by the dual system of apprenticeship training, which they shared with Germany. Sixteen years later, the role of vocational education in the tertiary system had grown by 49% in Switzerland, whereas the enrollment in apprenticeship had dropped by 8%; in Austria, the role of vocational education in the tertiary system had shrunk by 14%, whereas apprenticeship in the secondary system increased by 2%.⁹ These changes foreshadowed very different levels of success with the introduction of universities of applied sciences (FH) in the two countries in the mid-1990s.

The Origins of Divergence: 1945 to 1995

Prior to 1950, the Swiss and Austrian education and training systems were in most respects equivalent: dominated by apprenticeship, with a very minor presence for technical secondary schools. During the 1960s and 1970s, both faced pressure to expand higher-level education, as industry tried to respond to technical change. This pressure to upgrade the skill base was widespread among industrial country policy makers at the time, “based on the conviction of employers and policy-makers that the national output of highly-qualified manpower had to grow if the respective countries were to compete successfully on the world market in times of rapidly changing technologies” (Organisation for Economic Co-operation and Development [OECD], 1991, p. 13).

In response to the perception of skill shortage, Austrian policy makers tried to introduce schools similar to the German FH (tertiary technical schools) in 1970. Franz Partisch, a civil servant in the education ministry, drafted a plan to introduce these institutions with two goals: to reduce the overburdened universities and to upgrade the training of engineers to “international standards” (OECD, 1988, p. 14). The Partisch plan appeared to have support from the employers group within the Austrian People’s Party (ÖVP). However, the only companies on record as supporting the plan are two large nationalized companies: the VÖEST and Böhler & Co (Partisch, 1974, p. 59). In public hearings on the law, the Wirtschaftskammer and employers group of the ÖVP both united to shoot down the proposal on two grounds (“*Ingenieurverband Fordert Aufwertung der HTL zu FHS*,” 1995). First, it would have imposed increased costs on the training system by offering longer training courses. Second, the representatives of small employers, joined by the universities, wanted to keep the distinction between tertiary

(general) training and vocational training clear (Piskaty, 1971; Wirtschaftsbund ÖVP, 1970-1971, p. 10). The secondary engineering degree (HTL) could be undercut by the introduction of a tertiary (more attractive, more expensive) engineering degree (OECD, 1988, p. 16; WB, 1970-1971, p. 10). Austrian employers' representatives, while acknowledging the need for more engineers, adamantly opposed Partisch's proposal to build a tertiary training course that could be accessed via vocational apprenticeship. Such a move would have raised the cost of their apprentices and lowered the prestige of the secondary HTL engineer degree (which was placed at the same educational level as apprenticeship; the two certifications competed with each other). The defeat of the Partisch plan by small employer mobilization took the reform of higher vocational training off the political agenda in Austria until the late 1980s (Steiner, Scheibelhofer, Lassnigg, & Steger, 2001, p. 7).

The Swiss employer discourse on TVT differed in two important but related respects from that in Austria. First, the upper technical schools (Techniken or HTLs) that roughly corresponded to the Austrian HTLs were, from the mid-1940s onward, conceived as postsecondary education (i.e., requiring a secondary education certificate) rather than as a secondary school degree. Second, the primary pathway to the *Technikum* was via an apprenticeship certificate (vocational training), not via general school training ("*Mangel an Arbeitskräften*," 1956). In the middle of the 1950s, the number of *Technikum* students was tiny, at fewer than 3,000. For the large-firm-led metal employers association, this was perceived as a crisis for the future skill needs of Swiss industry. Even in their earliest framing of the problem, the Swiss metal employers pushed for more *Technikum*-trained engineers through the promotion of more apprenticeships ("*Die Förderung Wissenschaftlichen und Technischen Nachwuchses*," 1959; "*Förderung des Technischen Nachwuchses*," 1956). That is, the association advocated secondary vocational training as the preferred route to TVT for engineers rather than trying to separate engineering training by encouraging it either at the universities (which apprentices could not in practice attend) or through the secondary system (where it was equivalent to apprenticeship, not a subsequent educational step beyond it).

As in Austria, Swiss employers associations were concerned throughout the 1960s with a perceived lack of engineers and other technical employees for the future (Aebli, 1969, p. 11; Fatzer, 1961, pp. 35-37). Firms in the Austrian economy had experienced this same perceived shortage of technical workers, which led to the Partisch plan; the mobilization of small employers against the plan had defeated it. In the Swiss constitutional structure, whose decentralized organization gave primary authority for education to the cantons, no such central

law was required. Rather than working through formal legal channels, the principal employers organizations worked with cantonal governments to promote the development of Technikum and HTL education, over which the federal government had little oversight. By 1974, the metal employers association boasted that its member firms employed 3 times more graduates of HTL education than graduates of the university system (*Arbeitgeberverband Schweizerischer Maschinen- und Metall-Industrieller* [ASM], 1974, p. 27). Yet the enrollment in HTL education, which had more than doubled between 1955 and 1965, had remained stagnant since then, and the forecast of organized employers suggested that by 1976 there would be a shortfall of 2,500 HTL-trained students in metal firms alone (ASM, 1974, p. 32; Bundesamt für Statistik, 1965).

To give an impetus to the development of tertiary vocational education, in which Switzerland was correctly perceived as lagging behind its principal competitors, a regulatory reform of the structure of the higher technical schools was included in the reform of the basic vocational training law in 1978 (Schweizerischer Wissenschaftsrat, 1978, p. 117). This reform was significant for both its form and its consequences. Although the eventually failed reform of the Austrian tertiary vocational system had been divorced from any legal changes to the existing vocational education system, the regulation of higher technical schools in Switzerland was included in the basic vocational reform law, most of whose regulations dealt with the conditions of apprenticeship. Even if small employers viewed the Austrian proposal as a potential drain on apprenticeship, the Swiss lawmakers emphasized the greater tertiary measures as a basic element to reinforce the competitiveness of the Swiss economy, which required "a broad supply of deep training and the largest possible degree of permeability in the [vocational] educational sector" ("Attraktivere Berufliche Ausbildung," 1977). From their very conception, these schools were intended to save apprenticeship, not to replace it. The consequence of their regulation was to create steadily increasing enrollment in Swiss tertiary training throughout the 1980s.

As in almost all advanced industrial countries, tertiary sector enrollment increased in both countries during the 1980s, but in Switzerland the tertiary vocational enrollment (by now starting from a much higher base) more than doubled, whereas the corresponding growth was less than 50% in Austria. The Austrian employers association only attempted to reopen discussion of the Partisch plan for technical tertiary training in 1987, but their primary ground for doing so was to facilitate Austrian accession to the European Communities.¹⁰ Their effort came at the same time as the OECD comparative study that identified small-firm-dominated Italy and Austria as the outliers in

the nonuniversity tertiary field, having failed to expand this sector faster than the university sector (Arnold, Pechar, & Ungar, 1998, p. 62; OECD, 1991). As in Switzerland, large employers expressed dissatisfaction with the available skills profile. Unlike in Switzerland, though, the large employers did not drive the Austrian higher education discussion.

Formal Institutional Change: The Transition to FH

Developments in Swiss and Austrian tertiary training appeared to reconverge in the 1990s, when both introduced universities of applied sciences (FH). In both countries, the desire to align on European standards and the demands of business were adduced as primary causes for the adoption of the law (Arnold et al., 1998, p. 61). However, the real impact of the introduction of new training institutions would depend on the developments of the past decades, for two reasons. First, the attractiveness of a new educational track is a function of how much students believe it represents an asset on the labor market, which depends on how they think employers value the credential of a FH degree. Second, it depends on its ease of integration with the lower educational tracks that feed into it. In both cases, the previous years' developments systematically favored much faster growth in the Swiss than in the Austrian schools.

The Swiss FH were not officially founded until 1997; those in Austria were begun in 1994. However, in part because they built on the existing tertiary vocational education schools, enrollment at Swiss FH has significantly outpaced that at Austrian schools, despite being founded 3 years later: In 2004, 29% of the enrollment of Swiss tertiary education was in the FH; the corresponding figure in Austria was only 9%. Lassnigg et al. (2003, p. 61) cite evidence that Swiss FH graduates have gained greater acceptance on the labor market than their Austrian counterparts. Moreover, graduates of Swiss FH have a lower unemployment rate than graduates of Swiss universities (2.8% vs. 4.1%), and, 1 year after graduation, their average salary exceeds that of their university compatriots (Bundesamt für Statistik, 2002, p. 38). Clearly, the Swiss schools have convinced a significant number of students to enroll at least in part because they have a track record as producers of labor market credentials and are not a brand new experiment.

Second, though, Swiss FH have a radically different student body than do Austrian FH. Both countries have dual systems of apprenticeship training, through which a large proportion of youth pass. As OECD reports

underline, this system results in comparatively low youth unemployment in both countries, but at the cost of assigning students to vocational tracks at a young age and having low levels of permeability between tracks of the education system (OECD, 1999, pp. 10-12). It is not surprising, therefore, that governments in both countries attempted to introduce greater permeability to their systems of vocational training in conjunction with the introduction of FH education, although the timing in the two countries is interesting. The Swiss introduced the *Berufsmaturität* (BM) in 1994, 3 years before the introduction of the FH, thus creating the vehicle by which apprentices could transition to the FH before the FH were officially introduced. The Austrians introduced the *Berufsreifeprüfung* (BRP) in 1997, which delayed the entry of apprentices into the FH. Both degrees offered access to higher education institutions, and it was foreseen by politicians in both countries that the two degrees would allow a passageway between apprenticeship and higher education through the FH (“Gleichwertig wie Universitäten, aber andersartig,” 1994).¹¹

By 2003, however, only the Swiss BM was numerically significant, with more than 9,000 awarded that year (constituting more than 15% of all upper secondary diplomas in Switzerland). In Austria, there are no official statistics available from the ministry—only “estimates” that between 8,000 and 11,000 youth had received this degree in total (NOT per year) since its inception in 1997.¹² Of the first-year FH students in Switzerland in 2001, 52% had a BM; in 2003, only 6% of entering FH students had passed a BRP in Austria. A 2004 report by the Austrian government representative for youth employment and apprenticeship asserted that “to my surprise, [the measure] was known in the population too little or not at all” (Blum, 2004, p. 14). Given that the statistics branch of the education ministry has not bothered to count the number BRP recipients per year, the representative’s shock is perhaps overstated. Nine years since its introduction, there is no evidence the BRP has made any headway at all.

The outcome of the Austrian reform is very little change on the part of the partners to the education and training nexus in the country. The FH have been slow to attract students, and this is partly because one target population—apprentices—are by and large unaware that the barrier to entry to higher education has been lowered. Even if this knowledge were widespread, it would not be likely that employers would push for greater take-up of this option. Throughout the 1970s and 1980s, it was small employers who dominated the discourse of training reform in Austria, and those small employers have little desire to move away from a system based on apprenticeship in 1970 or to pay

workers more because of their higher educational qualifications. In Switzerland, by contrast, large employers have led the push for improvement of the dual system through its connection to TVT, and later to FH. Swiss employers are no more egalitarian than Austrian employers, to be sure, but Swiss companies need workers with increasingly broad skill sets, as they have recognized for decades. The range of tertiary vocational schools expanded throughout the 1980s, increasing the choices of educational options that were close to the workplace while involving more extended theoretical training. The establishment of the BM as the dominant credential to accede to FHs accentuated this movement: Switzerland is not abandoning dual system training, but it is using apprenticeship to increase the breadth and general level of vocational skills. Whereas Austrian small employers have “protected” the dual system from encroachment by tertiary training, Swiss employers have used tertiary training to upgrade the skills provided through dual training and to increase the permeability of the system. In 2004, Swiss employers were active advocates of a constitutional amendment setting vocational and general education on equal terms (Bundesamt für Bildung und Wissenschaft, 2004). Austrian employers, by contrast, have done little if anything to promote greater permeability of the vocational educational system, seeing this as a weakening of the apprenticeship system on which many of them still rely heavily for production.

Conclusion

Skill specificity lies at the core of the varieties of capitalism approach to explaining the divergent institutional outcomes of modern political economies. During the postwar era, Switzerland has experienced a significant institutional change, moving from a system based largely on the provision of specific skills to one that increasingly develops the general skill profile of young apprentices by sending them to tertiary educational institutions. Austria—the country most similar in its educational system to Switzerland for much of the postwar period—has remained rigidly attached to a specific skills system. The root of this divergence lies not in the consensual institutions characteristic of small states in world markets (cf. Katzenstein, 1985; Visser & Hemerijck, 1997) but in the result of conflicts between large and small employers in the two political economies. Small employers in Austria have maintained apprenticeship training, with little connection to tertiary education, as the primary skill provision model of the country. The domination of

large employers in Switzerland has led, instead, to a focus on increasing skill levels and portability by linking the TVT system to the dual apprenticeship system.

This study has also exposed a puzzle in the varieties of capitalism literature, which generates a series of opportunities for future research on the politics of skills systems. The puzzle is that most of the countries called CMEs have skill systems that confer significant degrees of general skills on young people. Recognizing this puzzle is as easy as seeing that the *absence* of secondary-school vocational training systems is not the same as the *presence* of a high degree of general skills. VTS, the measure developed by Estevez-Abe et al. (2001) and used in several influential pieces of comparative political economy research, commits this fundamental error. Countries that have significant TVT systems fed by significant secondary vocational training programs produce workers with more general skills than do those countries that have only significant secondary vocational training. I have developed a preferred measure of skill generality, TVT, based on enrollment in TVT as a proportion of an age cohort. This measure does a much better job than VTS of predicting the skill profiles that we observe in advanced capitalism.

The most important frontier this study opens up for future research is why small CMEs have more general skill systems than the big CMEs of Germany and Japan and what explains the variation among them. The hypothesis that emerges from this article is clear: Countries such as Sweden and the Netherlands, which are dominated by very large firms, are likely to have the most general skill systems within the small, coordinated economies, whereas the prevalence of small firms in Norway may account for the lower TVT scores observed there. Yet in a world of equifinality and contingent causation, it is certainly possible that multiple causes may lead to similar outcomes. Here, the interaction of party politics with the development of tertiary education systems should be examined in the context of varieties of capitalism. Ansell (2006) has recently demonstrated that parties of the Left and Right have clear and consistent higher education preferences: Right parties in many situations like to expand higher education because it helps their voters (the upper classes), whereas Left parties prefer to channel any funding of education directly to poor students rather than expanding tertiary education for everyone. How these preferences interact with the preferences of employer groups over TVT may provide some explanatory leverage on the puzzles unearthed by the use of TVT.

This article suggests a further area of inquiry for comparative political economists: how to integrate the variable of “small stateness” with a

varieties of capitalism perspective, particularly in the area of skill formation. First, as in the case of Switzerland, we expect that small states are more conscious than large states of the demands of multinational corporations (MNCs). Other things equal, this need to attract direct foreign investment probably imparts a general skills bias to these education systems (cf. Crouch et al., 1999). Large states, which are still primarily worried about national firms, are less subject to this pressure, and domestic constituencies are more likely to dominate the process of determining the shape of skills systems. Second, it is not only small CMEs that challenge the established skills logic of the varieties of capitalism literature. Ireland in particular has a markedly less general skills profile than the United States and Canada, as shown in Table 4.¹³ Because Ireland is presumably subject to the same MNC pressures as other small states, this is puzzling. What drives the variation in preferences for general skills among LMEs? Finally, the argument in this article casts some doubt on the validity of the empirical link between systems that produce specific skills and the structure of the welfare state, at least those based on aggregate scores for country skill specificity (cf. Estevez-Abe et al., 2001; Iversen, 2005). If the small states that have lots of vocational training at the tertiary level also have lots of employment protection—such as Sweden and the Netherlands—then their high degree of employment protection cannot be related to their highly specific skill profiles. The relationship between welfare state structure and occupational risk is complex, and exposure to risk through asset specificity is certainly part of the story (Mares, 2003). Yet we need more and better composite indicators of the asset specificity of national skills systems before we can confidently make a tight link between welfare states and training systems.

For too long, education and training systems stood outside the purview of comparative politics. One of the reasons the varieties of capitalism literature has proven so influential is the development of a clear link between skill systems and other parts of the political economy that political scientists conventionally study: financial systems, industrial relations systems, and welfare states. Studies of the politics of change in training systems reveal much about the coalitions and processes involved in institutional change (Culpepper, 2003; Thelen, 2004). In an age marked not only by international trade but also by the development of global production chains, skills systems are of central concern to political actors in most countries, and their politics involve stakes as high as that surrounding welfare state reform or changes in tax policy. They are ripe for careful empirical study by those interested in the causes of change and stability in modern capitalism.

Notes

1. The 10 cases considered uncontroversial coordinated market economies are Austria, Belgium, Denmark, Finland, Germany, Japan, the Netherlands, Norway, Sweden, and Switzerland. Italy, France, and Spain are controversial cases, sometimes classified as mixed-market economies (for a discussion, see Hall & Gingerich, 2004). Two recent, empirically rich studies of skills tend to include the largest countries (France, Italy, Germany, Japan, the United Kingdom, and the United States), although one includes a study of Sweden (Brown, Green, & Lauder, 2001; Crouch, Finegold, & Sako, 1999).

2. The literature on wage-bargaining systems has also emphasized the important division between exposed and sheltered sector employers (cf. Pontusson & Swenson, 1996). This cleavage is highly salient for wage bargaining in an open economy because companies constrained by wage costs on international markets have different sensitivity to wages than do those only working in a domestic market, and the large-small firm cleavage overlaps to some degree with the exposed-sheltered sector cleavage (large firms being more exposed to international markets, other things equal). This article emphasizes the large-small cleavage because it is the one that it is more likely to have organizational and political expression in coordinated economies and thus to be more salient for political conflict over a range of issues beyond wages. Virtually all studies of the organizing strategies of employers emphasize not the sectoral cleavage but rather the cleavage between small and large firms (Martin, 2000; Silvia, 1997; Thelen, 2001).

3. In later work, Iversen and Soskice (2005) and Iversen, Rosenbluth, and Soskice (2005) call this measure vocational training intensity.

4. To assess vocational training share (VTS), Estevez-Abe, Iversen, and Soskice (2001) combine two different sorts of measure, which has the effect of slighting the role of postsecondary vocational training in their analysis. For the secondary school component (which includes apprenticeship), they use the *share* of students enrolled in vocational training programs as a proportion of total enrollment in secondary education. For the tertiary component, however, they use as the numerator only tertiary vocational (ISCED5) *graduates* rather than students *enrolled* in vocational training at the tertiary level. The measure I use, by contrast, uses enrollment in tertiary vocational education, which seems the most comparable figure to enrollment in secondary vocational education.

5. One tertiary vocational training (TVT) country placement that appears anomalous but is not is the United Kingdom. Comparative educational research up to the mid-1990s—including the work by Finegold and Soskice (1988)—showed that the United Kingdom did much less well in the general skills training of young people than did most comparable economies, including coordinated-market economies (Bierhoff & Prais, 1995). The United Kingdom began to expand tertiary training only in the early 1990s, and this move accelerated under the Labour Government of Tony Blair after 1998 (Ansell, 2006). This is a very recent change, one that would not yet be reflected in the data on which both VTS and TVT are based.

6. In recent work, Iversen and Rosenbluth (2006) combine VTS with an index of median workplace tenure (longer tenure equals more specificity). This measure makes intuitive sense, but workplace tenure is at least as influenced by the extent of legal measures of employment protection as by skill system. Its use to explain any characteristics of welfare state arrangements creates significant endogeneity problems. Hiscox and Rickard (2002) criticize the use of a cross-national index of job tenure as an indicator of specificity, arguing that measures of the movement of workers within and across industries may be more reliable than tenure rates in measuring skill specificity. Hiscox and Rickard's approach is highly problematic because of

its total exclusion of educational systems—the most important single element of skills systems—but it is an important attempt to develop better measures of skill specificity.

7. GDP figures are from the World Bank, and all data are for the year 2000. With 31 companies in the top 500, Switzerland had a company-GDP ratio of 0.12; with only 4 companies, the same ratio in Austria was 0.02.

8. Swissmem stands for the *Schweizer Maschinen-, Elektro- und Metallindustrie*.

9. After 1996, UNESCO introduced a new International Standard Classification of Education (ISCED) classification, making it very difficult to compare ISCED categories before and after this time in a cross-nationally reliable way.

10. Interview with Gerhard Riemer, Federation of Austrian Industry, December 7, 2005.

11. The Austrian Berufsreifeprüfung also allows for access directly to universities.

12. This estimate was received in response to an e-mail communication with Gerhard Orth of the education ministry in Austria.

13. Ansell (2006) shows that Ireland also shows general trends of tertiary enrollment that are much more characteristic of continental European countries than of Anglo-American ones.

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