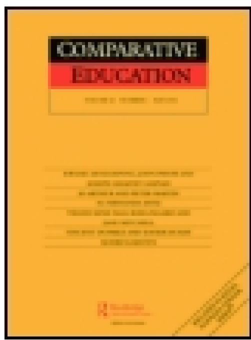

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How country size matters for institutional change: comparing skill formation policies in Germany and Switzerland

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ABSTRACT

This paper argues that country size can play a crucial role in shaping the type of gradual change observed in collective skill formation systems. Collectively governed dual-apprenticeship training has its base in the industrial and crafts sectors of the economy and builds on the decentralised cooperation of multiple public and private stakeholders. As a result, it tends to be strongly path dependent, which favours gradual over radical forms of change. However, in recent years, dual-apprenticeship training has been increasingly challenged by the rise of the knowledge and service economy and the growing popularity of academic forms of education. In this context, I compare policy responses in Switzerland and Germany, which represent one small and one large collective skill formation system, respectively. The historical-institutionalist analysis finds that the dominant trajectory of change is conversion in Switzerland but layering in Germany, with different implications for the future viability of collective skill formation.

KEYWORDS

Institutional change; comparative education research; skill formation policy; collective skill formation; apprenticeship training; Germany; Switzerland

Introduction

Collective skill formation builds on the decentralised cooperation of multiple public and private stakeholders (Culpepper 1999), including firms, the state as well as intermediary associations such as employers' associations and trade unions (Busemeyer and Trampusch 2012). Dual-apprenticeship training is at the core of collective skill formation, systematically combining training in the workplace with vocational schooling (Pritchard 1992). Systems of collective skill formation need to constantly balance the profit-driven motives of individual firms and the broader societal interest to maintain collective governance solutions (Schriewer and Harney 1999; Bonoli and Emmenegger, forthcoming). However, in recent years, these systems have been increasingly challenged by the rise of the knowledge and service economy, related changes in production models and workplaces, rising educational aspirations of individuals, and, more generally, the growing popularity of academic forms of education (Powell and Solga 2010; Graf 2013; Ertl 2020). Moreover, European reforms, like the Bologna and the Copenhagen processes, push for greater mobility between vocational education and training (VET) and higher education (HE), not least to reduce social inequalities linked to educational opportunities

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(Bernhard 2017). This is relevant, for instance, in countries like Switzerland and Germany in which VET and HE are historically characterised by a strong institutional divide (Baethge and Wolter 2015; Leclercq 1994). Overall, dual-apprenticeship training is increasingly confronted with the challenge to accommodate intellectual knowledge that is typically associated with school-based or academic forms of learning (Schriewer and Harney 1999). Thus, collective skill formation, whether in Europe or elsewhere (Vossiek 2018), faces increasing competition through more academic educational pathways.

However, systematic change in collective skill formation systems is difficult to achieve as they tend to be strongly path dependent due to their embeddedness in national system of industrial relations and the vested interests of the involved stakeholders (Hall and Soskice 2001; Thelen 2004). Furthermore, dual-apprenticeship training builds on the long-standing vocational principle (*Berufsprinzip*) and is historically based in the industrial and crafts sectors of the economy. How then do these systems react to the challenges related to rise of the knowledge and service economy? The paper compares institutional changes in the collective skill formation systems at the examples of Switzerland and Germany and asks whether the similar systems of Switzerland and Germany deal with these challenges in similar ways. To address this question, the historical-institutional analysis combines – for the first time – small state corporatism (Katzenstein 1984, 2003) with the theory of gradual institutional change (Streeck and Thelen 2005; Mahoney and Thelen 2010) to explore whether key developments in Switzerland (representing a small state) and Germany (representing a large state) resemble specific modes of change. While Switzerland and Germany are the most prominent and two structurally similar examples of collective skill formation (Pilz 2012; Rothe 2001), they significantly differ in size. According to the theory of small state corporatism (Katzenstein 1984, 2003), the relative vulnerability of a small open economy like the Swiss one facilitates the flexible interpretation of rules and a culture of consensual politics, which is crucial for the argument in this paper. In recent years, institutionalists have developed fine-grained concepts to analyse institutional change in path-dependent environments. Amongst the most prominent ones are the modes of gradual institutional change – such as conversion or layering (Streeck and Thelen 2005; Mahoney and Thelen 2010) – which emphasise that incremental changes over time can add up to transformative change. By linking the theory of gradual institutional change to the context of small state corporatism, I derive the expectation that the Swiss reform process around dual-apprenticeship training is characterised by *conversion*, whereas *layering* represents the dominant mode of change in the German case – which has specific implications for the future viability of collective skill formation.

The comparative analysis builds on historical institutionalism (Thelen 2004) and process tracing (Mahoney 2004; George and Bennett 2005; Blatter and Blume 2008) in both countries from the 1960s to the 2010s. The studies' findings are primarily derived from an in-depth analysis of policy documents and a range of semi-structured expert interviews in both countries. The paper focusses on major developments as collective skill formation responds to the expansion of the knowledge and service economy and the growing relevance of academic forms of learning. A central finding for Switzerland is that, through the creation of the vocational baccalaureate and the universities of applied sciences in the mid-1990s, apprenticeship training has been gradually turned into a main pathway to HE. In Germany, dual-study programmes combine in-firm training

with HE studies, leading to a bachelor's degree and in many cases also to an official upper secondary VET certificate. However, while the growth of dual-study programmes signifies an innovation in the German skill formation system, it does not contribute to adjusting traditional dual-apprenticeship training to the demands of the knowledge and service economy. Therefore, the future viability of traditional dual-apprenticeship training looks more robust in the Swiss case of conversion than in the German case of layering.

The paper's findings suggest that country size matters as a key contextual factor for the type of change observed. This contributes to our understanding of crucial scope conditions for policy reform in collective skill formation systems. The following section presents the theoretical framework. Next, the methods and data are outlined. Then, the Swiss and the German cases are presented. This is followed by a comparison. The paper concludes with an outlook and a discussion of the broader relevance of the findings.

Theoretical framework: small state corporatism and modes of change

This section introduces the key literature around gradual institutional change and small state corporatism. It then suggests a combined application of the two theories, the latter outlining contextual conditions for the mechanisms suggested by the former.

Path dependency and modes of gradual change

In this paper, the arrow of time is brought into the analysis by reference to historical-institutionalist concepts such as path dependence. As Pierson (2004, 179) observers, '[…] policymakers operate in an environment fundamentally shaped by policies inherited from the past'. In the case of collective skill formation there are powerful constraints built into such systems that prevent an outright defection from the nationally standardised collective governance of VET. These constraints include institutional complementarities between VET and the industrial relations system, such as collective bargaining, and labour-market security regulations (e.g. Estevez-Abe, Iversen, and Soskice 2001) that link the VET system to the overall institutional configuration of the national political economy. In such a context, the theory of gradual institutional change is a suitable means for identifying institutional changes for which no critical juncture is necessarily required.

Definitions of institutions usually refer to some sort of regulative, normative, or cultural-cognitive social ordering (Scott 2008). Thus, institutional theory has long tended to explain institutional stability rather than institutional change. Classical institutional theory has typically accounted for change processes via exogenous shocks that unsettle a given social institutional ordering and lead to critical junctures. However, in the past few years, institutionalists have developed more fine-grained concepts to analyse institutional change. For example, while Campbell (2004) sees institutional change as 'constrained innovation', Ebbinghaus (2005) discusses several 'branching pathways' (path cessation, path switch, path departure, and path stabilisation). Here, I apply the typology of *modes of gradual institutional change*: Streeck and Thelen (2005), similar to Hacker (2004), describe four specific modes of gradual change: (a) displacement, (b) layering, (c) drift, and (d) conversion. In all four modes, incremental changes over time can add

up to transformative change (Thelen 2004), and substantial institutional change may be masked by relative stability on the surface: (a) when existing rules are removed and new ones are introduced, this is *displacement*. (b) When, instead of replacing existing institutions, new institutions are added on top of existing institutions, this is *layering* (see also Schickler 2001). (c) Following Hacker (2005), *drift* refers to shifts occurring in the external conditions of a rule, implying that the rule formally stays the same but that its impact changes. (d) When rules are interpreted and implemented in new ways but formally stay the same, this redirection or redeployment is called *conversion*.

Do key reform processes around skill formation in Switzerland and Germany represent any of these modes of gradual institutional change? Recent work by Mahoney and Thelen (2010, 18–22) is instructive in this regard, as it links each of these modes of gradual institutional change to a typical combination of (1) key characteristics of the *political context* and (2) the *targeted institution* (Table 1). The political context is defined in terms of the veto possibilities (strong or weak), whereas the characteristics of the targeted institution refer to the level of discretion in the interpretation or enforcement of a particular institution (low or high):

- Where the *political context* gives the defenders of the status quo strong veto possibilities, potential change agents will find strategies of displacement and conversion less feasible; this is because – unlike layering and drift – they require direct changes to the targeted institution.
- Where the *targeted institution* offers potential change agents a low level of discretion in interpreting or enforcing that institution, drift and conversion strategies are less likely to be successful, as both these modes rely on significant leeway in how the institutions are implemented: drift often builds on a gap between institutions and how they are enforced; such gaps usually occur when a specific institution is not strongly enforced. Conversion builds on the ambiguities related to a specific institution, which allow it to be reinterpreted for a different purpose.

Next, I present the theory of small state corporatism and connect it to the modes of gradual institutional change.

Small state corporatism

Recent research on small (and micro) states points out that these 'cannot insulate themselves from global economic pressures individually' (Jules 2015, 202), which 'calls for greater flexibility in the approach of small states to the development and utilisation of

Table 1. Modes of change in relation to characteristics of political context and targeted institution.

		Characteristics of targeted institution (A)	
		Low level of discretion in interpretation/enforcement (A.1)	High level of discretion in interpretation/enforcement (A.2)
Characteristics of the political context (B)	Strong veto possibilities (B.1)	*Layering*	*Drift*
	Weak veto possibilities (B.2)	*Displacement*	*Conversion*

Source: Mahoney and Thelen (2010, 19), annotations added by author.

their own human resources' (Bacchus 2008, 127), with people being 'the greatest resource of many small states' (Crossley 2008, 251). To further explain variety in recent developments of the German and Swiss collective skill formation systems, I refer specifically to the theory of small state corporatism (Katzenstein 1984, 2003), which resonates with other research on small states, for instance, in terms of these states' greater economic vulnerability to global developments, the relative ease of reforms in small systems (Brock and Crossley 2013, 392, 395) and their capacity for flexible adaptations (Baldacchino 2019).

Katzenstein (1984, 2003) observes that political reforms in many small corporatist states in Europe, like Austria or Switzerland, tend to safeguard domestic stability but are nevertheless guided by the perceived need to adapt rapidly to new exogenous societal challenges.[1] For instance, to mediate the influence of exogenously induced structural economic change (see Campbell 2004), small states exposed to global trade flows have relied on interventions on the supply side of the economy to raise the workforce's skill level (Culpepper 2007). At the core of Katzenstein's argument lies inclusiveness, characterised by 'an ideology of social partnership expressed at the national level; a relatively centralised and concentrated system of interest groups; and voluntary and informal coordination of conflicting objectives through continuous political bargaining between interest groups, state bureaucracies, and political parties' (Katzenstein 1984). Katzenstein emphasises the relative 'vulnerability' of small (and export-oriented) states like Switzerland to developments in the international political economy. This vulnerability facilitates corporatism and a culture of consensual politics – as opposed to a system in which veto players dominate the political bargaining process. As I will show below, in the case of VET, this 'vulnerability' can, for instance, relate to the significant role of migrant workers in an increasingly internationalised domestic labour market but also to the appeal of policies promoted by international agencies (e.g. OECD, EU) or the influence of dominant educational models of large neighbouring countries (in the Swiss case: France and Germany).

The theory of small state corporatism leads to the expectation that in the Swiss political context there should typically be – in relative terms – fewer stakeholders acting as veto players to policy reform. In fact, Katzenstein (1984) characterised Switzerland as belonging to the liberal variant of democratic corporatism in which the business community tends to enjoy more power than the labour movement. Nevertheless, small state corporatism implies that weaker parties (here: labour representatives) are well incorporated into the political process (see also Mach 2006). More generally, in small corporatist states like Switzerland or Austria, internal rigidity can still go together with the capacity to find flexible institutional responses (Katzenstein 1984, 2003). While in Switzerland, as an extreme example of a consensus democracy (Lijphart 2012), there are multiple actor groups and potential veto players involved in political processes at various levels, the cooperative search for consensus remains an important mode of decision making (Vatter 2008), associated with a very effective form of corporatism (Armingeon 1997). Thus, in comparison to the more rigidly structured and conflictual type of corporatism in the larger state of Germany (see Emmenegger, Graf, and Strebel 2020 on social versus liberal collective skill formation systems), this can explain why in Switzerland, despite a high number of potential veto players, the context of small state corporatism implies that there is a greater willingness to search for consensus and, if need be, to work flexibly with the institutional arrangements in place.

The theory of small state corporatism can also be connected to the argument by Lehmbruch (1993) on consociational democracy and corporatism: Switzerland is a typical case of a small European country in which there is a tradition of resolving major conflicts not by majority decision making but rather through the bargaining between various organised groups. Referenda being strongly institutionalised further incentivises political actors to seek consensus to avoid reform blockades (Lehmbruch 1993). This type of governance structure is easier to maintain in a smaller country in which actors can more easily network. It emerged in the late nineteenth century to overcome the differences between various societal groups in the face of challenges around industrialisation and social mobilisation (Lehmbruch 1993, 44). This speaks for the high adaptability of the Swiss corporatist system and, more generally, helps us understand the dominance of the principle of amicable settlement ('amicabilis composition') in Switzerland as a small but internally highly diverse state (Lehmbruch 1993).

Here I would like to highlight a related element of small state corporatism that has not yet received as much attention in the literature. This is the capacity of a small corporatist system to cope with new challenges by flexibly reinterpreting institutions for different purposes, which is, for instance, enabled by the creative handling of ambiguities related to these institutions. A key condition here is that in small corporatist states key actors know each other well and tend to cooperate closely, for example, as geographic proximity allows them to meet frequently (Katzenstein 1984, 2003). For instance, Bern, the Swiss federal city, and Zurich, the country's main business centre, are quickly reached from most places in Switzerland and serve as hubs for the networking of relevant stakeholders. More generally, in Switzerland actors on the ground have multiple channels to shape the concrete implementation of formal institutional arrangements depending on specific circumstances. In Swiss VET, an important illustration of this is the VET reform in the early 2000s which created an institutional framework that provides stakeholders with significant leeway in (re-)shaping the VET intermediary associations in charge of the governance of VET programmes (Strebel, Emmenegger, and Graf 2020; Martin and Graf 2019). In other words, relevant actors from business to unions and public agencies were enabled to define these associations and related institutions in ways that serve the needs of their specific industries, occupations, and regions.

In this context, the German case presents a counter-image to the Swiss case. In this larger country, the corporatist system is more rigidly organised. That is, the institutional configuration is formalised in a more rigid way at the various governance levels, for instance, if we consider the intermediary organisations in charge of VET, like the chambers of industry and commerce (Emmenegger, Graf, and Strebel 2020). With Katzenstein (1984, 2003) it can be argued that this is in part conditioned by the greater geographic distance that prevents the more informal, network-based arrangements across relevant stakeholder groups as outlined for the Swiss case. One effect is that in the German case there is typically less scope for discretion in the interpretation of institutions compared to the Swiss case (see below). Furthermore, in the German case dialogue between the social partners is often more confrontational. Representatives of labour and employers face each other in various VET governance boards at different levels (national, state, and local) – where their respective positions are strongly institutionalised (Emmenegger, Graf, and Strebel 2020). Beyond this, unions and employer associations

regularly face one another in collective bargaining (Hall and Soskice 2001). Thereby, German sectoral collective negotiations encompass conflictual items such as apprentice pay and, less commonly, can result in legally binding rules on the number of training places that firms must offer (Wolf 2017, 622). Here, both unions and employers' associations are organised by sector. This, on the one hand, facilitates the arrangement of such negotiations but, on the other hand, inevitably renders the German system, relative to the Swiss one, more prone to conflict along class lines (Emmenegger, Graf, and Strebel 2020). Overall, relative to the case of Swiss small state corporatism, the conditions for consensual decision making and the flexible interpretation for rules are less favourable in Germany.

The argument

To begin with, it should be noted that the focus of this analysis is not to explore the macro-level factors, such as the position in the international economy, that help to explain small state corporatism in a country like Switzerland. Instead, the implications of small state corporatism as defined by Katzenstein (1984, 2003) are taken into account to define the context for institutional changes in VET in Switzerland relative to Germany and, hence, to increase our understanding of why one mode of gradual change might be more dominant than another. The core argument here is that country size matters in terms of its influence on the trajectories of change in skill formation systems. Considering the contextual boundedness of causal explanations (Falleti and Lynch 2009), I argue that small state corporatism sheds light on the contextual conditions under which institutional change unfolds in the small Swiss collective skill formation system relative to the larger German one.

I expect that the Swiss collective skill formation system is more flexible in its approach to reform than the German one. This involves, for instance, more flexibility in terms of the negotiations between stakeholders but also regarding the interpretation of relevant rules. The application of the theory of small state corporatism suggests that the political context for collective skill formation in Switzerland, with its stronger tradition of consensual decision making, induces potential veto players to make use of their veto power less frequently than in the German case (see Table 1, Switzerland: B.2, Germany: B.1). At the same time, small systems can more easily operate with less tightly formulated institutional rules as there is more scope for actors to directly interact with each other, to build a common understanding of certain policy problems, and to interpret institutions more flexibly. Thus, I expect that the characteristics of the targeted institutions in collective skill formation offer a higher level of discretion in interpretation in Switzerland than in Germany (Table 1: Switzerland A.2, Germany: A.1). Using the theory of small state corporatism to conceptualise the context for the modes of gradual institutional change, I thus hypothesise that *conversion* is likely to be the dominant mode of change in the Swiss case but *layering* in the German case. It should be noted that both these change patterns would operate without removal (as in the case of displacement) or neglect (as in the case of drift) of dual-apprenticeship training. Rather, conversion in Switzerland would be characterised by the changed enactment of dual-apprenticeship training, while layering in Germany should operate through the introduction of new institutions.

Methods and data

The study compares institutional changes from the 1960s – when massive educational expansion of higher levels of education started to exert significant pressure on VET systems – up to the 2010s in Switzerland and Germany. The analysis builds on a similar systems design. In global comparison, the two countries' VET systems can be considered as similar. For instance, both corporatist systems feature collective governance structures embedded in decentralised cooperation as well as high levels of federalism (Graf 2021). Both countries belong to the cluster of collective skill formation systems together with Austria, Denmark, the Netherlands and Luxembourg (Busemeyer and Trampusch 2012). Switzerland and Germany are often considered to represent ideal types of these systems (Ryan 2012; Ebner 2013). In Switzerland, 61% of the learners at the upper secondary level are enrolled in VET (BFS 2020b). In Germany, relative to other educational offers, the biggest group of the 19-year-olds is participating in VET (34%) (BIBB 2020a, 82). Yet, while Switzerland and Germany are very prominent examples of collective training, they significantly differ in sizes. In 2019, Switzerland had a population of 8.6 million (area: 41,285 sq km), while Germany's population was 83.2 million (area: 357.582 sq km), which is the largest number in the European Union.[2] Hence, using 10 million as a cut-off for population size for small states (Maass 2009) as well as looking at country size in relative terms (Baldacchino 2018), Switzerland represents a small and Germany a large state – which can help us understand differences in the change processes in these two countries.[3]

The paper focusses on the major developments in these two countries in relation to how dual-apprenticeship training deals with the expansion of the knowledge and service economy and the growing relevance of academic forms of learning. The concrete cases studied are the genesis and institutionalisation of the vocational baccalaureate in Switzerland and the dual-study programmes in Germany.[4]

Regarding the comparative method, the article applies the method of parallel demonstration of theory (Skocpol and Somers 1980; Beck 2018). That is, Switzerland and Germany are juxtaposed to examine whether the theoretical propositions derived from the combination of modes of gradual institutional change and small state corporatism can be convincingly applied and might generate portable knowledge. To account for institutional changes, the case analyses rely on causal process tracing (Blatter and Blume 2008). That is, in tracing modes of gradual institutional change, the paper offers for each country case a dense narrative account of crucial sequential events within their context. Process analysis has special value for exploring theory-oriented explanations in the context of small-n case studies. That is, process tracing is referred to as the analysis of sequences of events to account for relevant linking mechanisms and intervening processes in specific cases (Mahoney 2004). When applying this method, ideally, the researcher will find that the most significant historical steps towards the outcome can be understood by reference to a theory (George and Bennett 2005) – in this paper, this is the theory of gradual institutional change in relation to country size as highlighted by Katzenstein's small state corporatism.

In terms of data, in addition to secondary sources, I analysed official documents from national stakeholders, such as statements by state ministries, political parties, social partners, and the educational organisations. To uncover and explore pertinent developments

in dual-apprenticeship training and understand contemporary change processes not adequately represented in the available literature and quantitative datasets, I conducted semi-standardised interviews with experts in Switzerland (CH: 18 interviews) and Germany (DE: 18 interviews) between 2011 and 2017. The experts were selected as a representative sample of the relevant key stakeholders, i.e. responsible state agencies, intermediary organisations such as employer associations and trade unions, and firms themselves. After I selected the relevant organisations, I chose the interviewees based on their expertise regarding the relevant developments. The interviews lasted for at least 45 min, and in some cases, up to two hours. To interpret the interviews, I applied the instruments of theory-guided qualitative content analysis (Gläser and Laudel 2009).

Next, I present the empirical analysis. In each of the two country sections, I first provide a description of the outcome of the main change process (i.e. the relevant educational programmes) before tracing their historical evolution.

Switzerland: conversion as a collective effort

In this section, I show that the creation of the vocational baccalaureate was a case of gradual institutional change driven forward by the majority of the relevant VET stakeholders. It signifies a conversion of the traditional dual-apprenticeship training into the key pathway into universities of applied sciences, with the implication that apprenticeship training is kept attractive also for talented youth that might otherwise opt for an academic educational pathway. The process tracing analysis yields that this conversion was enabled through the context of Swiss small state corporatism, which supports the consensus principle and reduces veto points (see B.2 in Table 1), and implies a relatively high level of discretion in the flexible interpretation of institutions (A.2).

Key case: the vocational baccalaureate

The vocational baccalaureate – available in six different subject areas linked to the study fields offered at the universities of applied sciences – is often referred to as the ‘royal path’ (*Königsweg*) to the Swiss universities of applied sciences (e.g. Backes-Gellner and Tuor 2010; several interviews). It was established at around the same time as these universities in the mid-1990s. The preparation for the vocational baccalaureate examination takes place in classes parallel or subsequent to dual-apprenticeship training. The vocational baccalaureate is targeted at the large group of apprentices in Switzerland and especially the most ambitious among them. It provides direct access to thematically related study courses at universities of applied sciences. In contrast, holders of an academic baccalaureate from an academic secondary school are required to complete a one-year practical experience within the desired field of study before they can commence studies at a Swiss university of applied sciences. This regulation is intended to prevent academic drift and to ensure that these universities remain firmly grounded in vocational training (Interview CH13). In 2019/20, around a third of all Swiss HE students studied at universities of applied sciences (Bundesamt für Statistik 2020a), which offer programmes in engineering, business, design, health, social work and art. In the same academic year, 60% of all first-year students at Swiss universities of applied sciences had previously acquired a

vocational baccalaureate (out of those with a domestic HE entrance qualification) (Bundesamt für Statistik 2020c).

Analysing the trajectory of change in Switzerland

The establishment of the vocational baccalaureate in 1993 went hand in hand with the creation of the universities of applied sciences in 1995. First, the vocational secondary schools (*Berufsmittelschulen*) – originally founded in 1968 in the wake of educational expansion – were converted into vocational baccalaureate schools to provide the vocational baccalaureate after 1993 (Interview CH9; Gonon 1994, 398). Second, the most prestigious schools of higher vocational education and training, higher technical schools, and higher economic and administration schools were converted into universities of applied sciences following the passing of a federal law in 1995 (BBT 2009). By and large, all the actors were ready for such reforms (Interview CH16) and regarded them as useful (Interview CH2). Veto points were playing a limited role (see B.2 in Table 1). While the original initiative for establishing universities of applied sciences came from the institutes of higher vocational education and training themselves, the actual implementation of the vocational baccalaureate and universities of applied sciences was planned as a joint effort between major VET stakeholders largely based on consensus (Interview CH3, CH5). The change process was closely supervised by the public authorities (including cantonal authorities like the Swiss Conference of Cantonal Ministers of Education) (Interview CH1). The planning of the universities of applied sciences was headed by the Swiss Federal Office for Industry, Trade, and Labor with the involvement of the Federation, the Swiss Conference of Cantonal Ministers of Education, the occupational groups, and the various organisations of the world of work (*Organisationen der Arbeitswelt*) (see Weber, Tremel, and Balthasar 2010).

Factors that led to the emergence of the vocational baccalaureate, in combination with the universities of applied sciences, include demands in the labour market for more theoretical knowledge (Interview CH12), the increasing attractiveness of academic titles in general (Interview CH6), as well as the perceived need to improve the attractiveness of dual-apprenticeships (Interview CH2; Graf 2013). The development of greater institutional permeability within the education system was also supported by the pedagogical commission of the Swiss Conference of Cantonal Ministers of Education in the 1980s and 1990s (Interview CH9). Furthermore, an important impetus for change was exogenously induced (Interview CH17), which is in line with Katzenstein's argument about the 'vulnerability' of small but open corporatist systems. In Switzerland, it is not unusual that the most important forces of modernisation come from outside its borders (Interview CH4). That is, there are frequently exogenous influences that force the stakeholders in the Swiss education system to act (Interview CH12). This facilitates close stakeholder collaboration and success in finding common ground for reform through the creative interpretation of the institutional arrangement in place. Indeed, the general move towards tertiarisation in the 1990s was not so much triggered by endogenous but rather by exogenous pressures (Interview CH8). For instance, in 1990 the OECD published an influential report on the Swiss education system (Gretler 1991). As a result of the report, stakeholders in Switzerland became much more aware of the international dimension of education (Interview CH16, CH7). In comparing Switzerland with other countries, mostly their European neighbours,

the OECD report raised two major concerns: the relatively small HE sector and, connected to this, the low rate of students acquiring a baccalaureate (see Gonon 1994, 396–397; Gretler 1991). Therefore, this OECD report played into the hands of those who were promoting a proliferation of pathways into academic education (Interview CH5).

Furthermore, it should be borne in mind that relative to country size, in Switzerland there are many large multinational companies, which means that the Swiss education system can hardly isolate itself from a global trend towards educational expansion (Interview CH2; Baker 2014). Exogenous pressure to reform was also exerted by the surge in mobility of labour on the European labour market (Interview CH13). From around the early 1990s an increasing number of workers with academic qualifications came to Switzerland to work – and especially from countries that are culturally similar (Müller-Jentsch and Zürcher 2008). This exerted pressure on the Swiss VET system, as these immigrants' academic qualifications were competing with Swiss VET qualifications (especially in the service sector) (Interview CH4). The providers of higher VET qualifications faced the challenge that their qualifications were usually not well understood in other countries. Thus, and especially due to the increasing number of Germans with an academic education working in Switzerland, the Swiss stakeholders were 'forced' to react in some coordinated way to position and upgrade their VET qualifications (Interview CH11). This, in turn, spoke in favour of the conversion of dual-apprenticeship training into a pathway towards academic qualifications (Interview CH15, CH12, CH4, CH9).

In this context, the small state political system and related close-knit actor networks have provided leeway for the reinterpretation of dual-apprenticeship training and to allow overcoming significant regional differences in terms of culture but also education and training (A.2). The way the vocational baccalaureate was implemented was further influenced by the cultural proximity of the Romandie (*Westschweiz*) towards France. Throughout its historical development, the Swiss education system has also been influenced by developments in its large neighbouring countries: Germany to the north and France to the east. The diffusion of French educational concepts and ideals is limited as far as the German-speaking part of Switzerland is concerned (Interview CH2) but significant in the case of the Romandie (Interview CH5). In France, full-time school-based VET is prominent and there are several measures that serve to create permeability between VET and HE, like the *baccalauréat professionnel* introduced in 1985 (Bernhard 2017). This helps to explain why full-time school-based training (Seibert, Hupker-Brunner, and Imdorf 2009, 615) and the discourse on permeability are more prominent in the Romandie than in the German-speaking part of Switzerland (Interview CH8, CH2). France's influence, via the Romandie, is likely to have positively influenced the discussions on the creation of the vocational baccalaureate in Switzerland (Interview CH17). This creation builds on the room for discretion given in the rather diverse Swiss system – in which, however, stakeholders know each other well, meet regularly and often closely work together when it comes to the (re-)interpretation of institutional arrangements. This helped forging the vocational baccalaureate despite the strong path dependencies typically associated with collective skill formation.

In sum, starting in the 1990s two major reforms were introduced through conversion. The complementary creation of the vocational baccalaureate and the universities of applied sciences increased the degree of institutional permeability between VET and HE and helped to safeguard the dual-apprenticeship system from reputational decline (Interview CH8, CH2). The vocational baccalaureate was designed to provide the best

possible route into the newly created universities of applied sciences. This process of institutional change was facilitated by exogenous international and European influences. Examples are international educational standards promoted by the European Community – the forerunner of the European Union founded in 1992 – and the OECD, as well as the increasing immigration of academically qualified workers to Switzerland. Such exogenous challenges and developments have facilitated the activation of consensual politics and the capacity for the creative interpretation of rules in line with the theory of small state corporatism. The genesis of the vocational baccalaureate configuration was a relatively smooth process signifying incremental change in the form of conversion shaped by the Swiss corporatist socio-political context.

I next provide the analysis of the relevant developments in the German case, which will then be compared with the Swiss case.

Germany: conflict avoidance through layering

This section shows that in the larger corporatist state of Germany, the emergence and expansion of dual-study programmes unfolded in a gradual way, representing a case of layering driven forward especially by large firms that were not able to push through their envisaged reforms in the traditional VET system. By placing the dual-study programmes in a grey zone on top of traditional dual-apprenticeship training, large firms circumvented both the low level of discretion in traditional VET (see A.1 in Table 1) as well as the strong veto possibilities by trade unions and smaller firms to changes in the traditional system (B.1). Thus, the process tracing shows that the genesis of dual-study programmes is characterised by a bottom-up layering process involving large industrial firms and local stakeholders.

Key case: dual-study programmes

Dual-study programmes are gaining increasing relevance in the German skill formation system at least since the 1990s (Graf 2018). They combine two distinct learning environments, namely HE institutions and the workplace. In some of the dual-study programmes, a vocational school is also integrated (Krone 2015). In dual-study programmes, students and firms are bound by a contract. The programmes usually lead to a bachelor's degree in about three to four years (dual studies at master's level are still relatively rare) and connect two didactical principles, namely scientific grounding and practical training. For example, the teaching staff is composed of lecturers, trainers from industry and sometimes vocational school teachers. Dual-study programmes combine institutional and organisational elements from the fields of VET and HE regarding the respective curricula, teaching staff or funding structures. The original type of dual-study programmes, those integrating an initial VET certificate, leads to a bachelor's degree from the HE sector (post-secondary level) as well as an official vocational certificate from the field of vocational training (upper secondary level). This type is the only one with direct linkages to the traditional system of collective VET governance as far as the VET certificate is concerned. All other types 'only' lead to a bachelor's degree, not a double qualification. Over the past decade, dual-study programmes expanded markedly (Ertl 2020). In 2019, around 108,000 students were enrolled in around 1,700 study programmes (BIBB 2020b). In universities of applied sciences, dual students already make up around 13% of the student

population (BIBB 2020b, 8). Dual-study programmes are most commonly offered in engineering sciences, IT, business studies but also, for instance, in social work, health and care.

Analysing the trajectory of change in Germany

The concept of dual training at the HE level originated from the so-called vocational academies: 'The cradle […] of dual training in the field of higher education is the vocational academy' (Interview DE8, translation by author). In 1972, on the initiative of large industrial firms, such as Bosch, Daimler-Benz, and Standard Elektrik Lorenz (Kramer 1981, 19), the Wuerttemberg Academy of Administration and Business and the Chamber of Industry and Commerce of the Stuttgart region stepped out of the regular policy processes in the policy field of skill formation to create the first vocational academies, the prototype for dual-study programmes (Beschoner 2009, 13). The so-called 'Stuttgarter Modell' aimed to help these firms recruit talented young people who had general academic skills and held a university-entrance diploma into vocationally oriented education and training. Given the growing demand for academically qualified workers with experience of and a strong affinity for concrete work practice (Waldhausen and Werner 2005, 49), one of these large firms' key motives was to recruit qualified personnel who were more attuned to the firm's specific skills demands than regular HE graduates (see Mucke and Schwiedrzik 2000, 9).

Initially, vocational academies were not taken seriously by most of the established actors in the VET and HE fields (Interview DE3). This is because vocational academies were placed in a niche or grey area between the established but institutionally separated fields of VET and HE. The vocational academies also have a unique status regarding their representation at the national level, as they are neither part of the German University Rectors' Conference, nor do they fall under the remit of the Federal Institute for Vocational Education and Training (Interview DE4, DE7). This location in an institutional grey area – which offered far more room for a more flexible interpretation of dual forms of training – is crucial, as it implies that neither the rather rigid standardisation procedures of the collectively governed dualist VET sector nor those in the HE sector directly applied to these newly created programmes. The discovery of this grey area outside of traditional dual-apprenticeship training allowed employers to initiate this new type of work-based training.

Another indicator of their unique status and location in an institutional grey area is the absence of vocational academies from any general education policy plan (see also Kahlert 2006). They were first created by firms in reaction to the newly established universities of applied science, which threatened firms' ability to recruit promising young people: between 1969–1972 the first universities of applied science were created through a politically planned upgrading of technical and engineering schools (Metzner 1997) to meet increased demand for tertiary education (BMBF 2004, 6). However, influential large firms in Baden-Wuerttemberg responded by launching the first dual-study programmes to secure their hold on high-end VET. These firms feared increasing academisation (Interview DE16; Schwiedrzik 2001, 164) and a loss of influence due to the greater institutional autonomy of the new universities of applied science (Kahlert 2006). In addition, in the aftermath of the mass student protests of 1968, these firms were sceptical of the capacity of these new universities of applied science to produce 'loyal employees' (Hillmert and

Kröhnert 2003, 199). In this context, large firms were actively looking for new options that would allow them to (a) recruit talented young people for their work-based training programmes and (b) ensure that these programmes would generate the skills they needed. Thus, large firms acted as institutional entrepreneurs (Interview DE16) in pushing for greater differentiation in the established skills system.

However, large firms did not have sufficient influence within HE in Germany – which is typically dominated by 'political legalism' (Goldschmidt 1991), the 'academic oligarchy' (Clark 1983), and the *Bildungsbürgertum* (middle-class intellectuals) – to directly influence the upgrading of the engineering and technical schools into universities of applied science. At the same time, the traditional dual-apprenticeship system, with its strongly institutionalised collective governance system, did not provide the level of leeway or discretion the firms would need to carry out more radical changes of apprenticeship training in response to a broader academisation (A.1).[5] In other words, in the absence of a more flexible system as in the case of small state corporatism – i.e. given the more rigidly institutionalised governance system for dual-apprenticeship training in Germany – the change agents were seeking a new way to meet their demands. Thus, these firms opted to establish a new organisational form that specifically catered to their needs and integrated institutional elements from traditional dual-apprenticeship training with those of HE. They neither sought to entirely displace the newly established universities of applied science nor the traditional dual vocational training programmes, but instead established a new organisational form in a grey area between these two established ones. In grafting dual-study programmes – by way of a bottom-up *layering* process – on top of traditional dual-apprenticeship training, the firms managed to evade the veto power of both trade unions and smaller firms, whose influence in the policy field of education is firmly grounded in the traditional apprenticeship system alone (B.1). Unlike in small state corporatism, in the German case the veto powers of the opponents are firmly institutionalised, which led change agents to look for other channels to achieve their goals by evading the institutionalised veto powers of their opponents.

In fact, the German Trade Union Confederation was very critical of the launch of dual-study programmes, which it described as a short-term, narrow-gauge mono-education (Walitzek-Schmidtko 2014). Smaller firms also opposed the reform of the traditional system, albeit for different reasons. While trade unions are typically largely in favour of increasing the academic content of apprenticeship training, they feared that more differentiation and flexibilisation of the system would lead to a greater dominance of firm-specific instead of industry-specific skills. This would increase the dependence of apprentices and workers on specific employers, thus reducing the power of labour associations. In contrast, the main issue for smaller firms is that they do not need high-level academic skills as much as larger firms. Large firms, especially export-oriented ones, often experience a greater demand to upgrade their workers' skills and they usually have greater financial leverage to do so. Yet, smaller firms' interest in maintaining the traditional model often tends to be rather the result of the wage compression that comes with national collective bargaining and certification, which allows them to recruit relatively well-qualified apprentices at a low cost. Indeed, smaller firms' involvement in apprenticeship training often depends on the productivity or added value of apprentices during the training phase (Thelen and Busemeyer 2012),

whereas an increase in academic skills in the form of dual-study programmes implies less time spent in the workplace. Through creating dual-study programmes in a niche on top of traditional dual-apprenticeship training, large firms as the key change agents circumvented both the opposition of small firms and unions to major changes in traditional dual-apprenticeship training. It should also be noted that subsequently, dual-study programmes were increasingly taken up by German universities of applied science themselves as these realised the attractiveness of this new type of work-based training to students and large employers.

In sum, large firms' initial move to create vocational academies can be characterised as a defensive response to increasing academisation and especially the rising numbers of young people entering academic secondary schooling. However, these firms subsequently realised that they had created a new institution on which the trade unions and smaller firms did not have any direct governance claim. Overall, in the larger German corporatist state the change agents faced a more conflictual political context and a less flexible institutional configuration in which a direct reform of the core of dual-apprenticeship training was less feasible. Hence, a more subversive change strategy was developed which implied a layering of a new, innovative educational pathway on top of traditional dual-apprenticeship training. This change strategy leaves in place the traditional way of organising dual-apprenticeship training – and thus dual-apprenticeship training is still a key pillar of skill formation in Germany. However, in the long run, this development implies increasing competition for traditional apprenticeship training.

Comparison of institutional changes Switzerland and Germany

This section compares key insights related to the emergence of the vocational baccalaureate and universities of applied sciences in Switzerland and the establishment of dual-study programmes in Germany.

Table 2 provides a schematic overview on the respective change processes identified through process tracing. Neither in Switzerland nor in Germany do we find the removal (displacement) or outright neglect (drift) of dual-apprenticeship training. However, while in Germany the enactment of dual-apprenticeship remains mainly unchanged, in Switzerland a reinterpretation of dual-apprenticeship training takes place adjusting it to new skill demands. This signifies a process of conversion in the Swiss case. On the other hand, in the German case, we see the introduction of a new institutional pathway in the form of dual-study programmes. This is associated with layering.

Table 3 provides further comparative insights in relation to the characteristics of the political context and of the targeted institution and supports the finding of conversion in the Swiss case and layering in the German case. Read in combination with Table 1, it

Table 2. Change in relation to traditional dual-apprenticeship training.

	Conversion in Switzerland	Layering in Germany
Removal	No	No
Neglect	No	No
Changed enactment	Yes	No
Introduction of new institution	No	Yes

Source: structure of table adapted from Mahoney and Thelen (2010, 16).

Table 3. Summary and comparison of key findings regarding change processes in the Swiss small state corporatist context relative to the German one.

	Switzerland	Germany
Discretion in interpretation/ enforcement (A)*	**Higher,** as small state corporatism facilitates flexible adjustments to institutions to address ongoing challenges (A.2)	**Lower,** as rigid institutional governance configuration implies that traditional dual-apprenticeship training is firmly embedded in the VET sector (A.1)
Role of veto points and veto players (B)**	**Weaker,** as small state corporatism facilitates consensual politics (B.2)	**Stronger,** as the power of trade unions and small firms is strongly institutionalized (B.1)
Resultant key change process	**Conversion** of traditional dual-apprenticeship training through vocational baccalaureate	**Layering** of dual-study programmes in a niche on top of traditional dual-apprenticeship training

*Refers to the characteristics of targeted institution (here: dual-apprenticeship training), see Table 1.
**Refers to the characteristics of the political context for dual-apprenticeship training, see Table 1.
Source: Author's synthesis of key findings.

provides an explanation for the type of change found in each country. In Switzerland, small state corporatism provides a context that facilitates a systematic conversion of dual-apprenticeship training. That is, through the emergence of the vocational baccalaureate and the creation of universities of applied sciences in the 1990s, significant parts of apprenticeship training have been converted into a main pathway to HE. This reinterpretation has helped to maintain the dominant role of apprenticeship training in the Swiss qualification system. In contrast, in the larger state of Germany, a more conflictual and rigidly institutionalised type of corporatism has made it difficult for large firms, as the core change agents, to reform traditional dual-apprenticeship training to integrate more academic forms of knowledge. As a result, they have established a new form of work-based training, namely dual-study programmes, and grafted it on top of traditional dual-apprenticeship training. This new form of work-based training has been expanding rapidly especially since the 1990s.

The impact of conversion on dual-apprenticeship training in Switzerland is positive as it thus gets adjusted to new challenges related to the knowledge and service economy. This is mirrored in the continued high participation rate in VET in Switzerland (61% of the learners at the upper secondary level) (BFS 2020b), whereas in Germany VET struggles much more to keep up with increasing participation rates in HE (Statistisches Bundesamt 2019, 87). In Germany, the institutional changes related to layering have a limited direct impact on traditional dual-apprenticeship training. However, in the long run, the effect of this development is likely to be negative for apprenticeship training as a major opportunity is missed to adapt it to growing academisation.

Outlook

This paper has compared institutional changes in Switzerland and Germany in response to the growing demand for academic knowledge in the service and knowledge economy. The historical-institutional analysis has combined small state corporatism with the theory of gradual institutional change. The goal was to explore whether key developments in Switzerland and Germany resemble specific modes of change. Indeed, the analysis has found that as collective skill formation adjusts to the knowledge economy, distinct patterns of gradual change are evolving in otherwise relatively similar systems:

conversion in Switzerland and layering in Germany. This finding indicates that country size can be a key contextual factor for the type of change observed, which contributes to the understanding of general socio-economic scope conditions for educational policy reform. The paper provides support for the thesis that in the context of a small state like Switzerland, there tend to be fewer veto points for institutional adjustments to address major policy challenges. Furthermore, it contributes to the literature on small state corporatism by showing that in such states limited veto powers can go hand in hand with a relatively high capacity to flexibly reinterpret institutions to new purposes.

The comparison shows that Switzerland features a more consensual approach to reform, which is effective in upholding dual-apprenticeship training and its collective governance structures as a stronghold in the Swiss skill formation system. The vocational baccalaureate and universities of applied sciences provide systematic pathways for apprentices into HE. In contrast, in Germany, the process of gradual institutional change – in the form of the layering of dual-study programmes on top of traditional collective governance structures – breaks with the usual tradition of collectively organised skill formation. This can be seen as a further indication of what Schriewer and Harney (1999) have pointed to regarding work-based forms of training in Germany being increasingly based on in-house patterns of human resource development rather than collective cooperation. Overall, the paper suggests that in the long run, the smaller corporatist system in Switzerland is in a better position to maintain collective governance traditions in challenging times.

This finding is of broader interest for researchers in comparative education and the political economy of skill formation as it provides a theoretical argument that can be applied to other countries in which collective governance traditions plays a central role in the national skill formation system. Not least, these insights should be relevant for other European countries offering dual-apprenticeship training, such as Austria, Denmark, Luxembourg, the Netherlands, or Norway. For instance, the case of Luxembourg's rapid transition to the knowledge and service economy (Graf and Tröhler 2017) points to a very high capacity for conversion in this small country. Against the backdrop of a growing interest in VET reforms in small and large middle- and low-income countries, both domestically and by international organisations (McGrath, Ramsarup, and Zeelen 2020; Doner and Schneider 2020), further research could extend the small state lens on institutional changes in skill formation to other cases in the Global North and South. Moreover, the paper's insights on the relationship between country size and modes of institutional change might be of interest for analysists of policy fields beyond skill formation. That is, future research could explore to what extend the analytical approach of combining small state corporatism with the modes of gradual institutional change applies also to other contexts in which multiple public and private actors cooperate in providing collective governance solutions to societal challenges.

Notes

1. Katzenstein (1985) analysed industrial adjustment strategies in seven small European corporatist states (Austria, Belgium, Denmark, the Netherlands, Norway, Sweden), comparing these cases to large industrial countries like Germany.

2. Data retrieved from the German Federal Statistical Office (https://www.destatis.de/) and the Swiss Federal Statistical Office (https://www.bfs.admin.ch) on November 6, 2020.
3. In this paper country size is seen to shape the conditions for gradual institutional change through its influence on the role of potential veto players and the given room for discretion in otherwise relatively similar corporatist systems.
4. Dual-study programmes are an important feature of the German skill formation system but very rarely exist in the Swiss one. In contrast, the vocational baccalaureate is an important element of the Swiss skill formation system. While there are also pathways linking dual-apprenticeship training with HE entrance qualifications in Germany (see Ulbricht 2016), the respective integration of VET and general education is significantly lower. Furthermore, these pathways in Germany are less systematically institutionalized at the national level.
5. After German reunification some of the educational programmes in the former GDR that had helped to provide institutional permeability between VET and HE, like *Berufsausbildung mit Abitur* (VET with HE access qualification), could have served as a source of innovation to overcome the more rigid divide between the two educational sectors in Western Germany, but instead were abolished due to political opposition especially on the part of the federal government and the business camp (Graf 2013, 104–106). It seems likely that also before reunification, adopting certain innovations regarding the nexus of VET and HE, such as *Berufsausbildung mit Abitur*, were hindered by the ideological conflict between Western and Eastern Germany, through which the respective educational models in many cases were mutually discredited (Anweiler 1990).

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