

The end of cooperation?
Collective skill formation systems in the knowledge economy

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Summary

This dissertation asks how collective skill formation systems, typically found in the German-speaking countries, Denmark, and the Netherlands, adapt to changing skill demands in the face of the knowledge economy. Strategic employer coordination and private interest governance are distinctive characteristics of collective skill formation systems, which is why these systems are prime examples of coordinated capitalism. While previous research has described dualisation as a common feature of processes of institutional change in coordinated capitalism, it remains open how collective skill formation systems deal with the pressures that global socio-economic trends, such as globalisation, technological change, and deindustrialisation, put on them. This dissertation provides a fine-grained picture of the preferences of public and private actors in collective skill formation in light of the knowledge economy and describes how these preferences are enforced. In four individual articles, it adopts a meso-level approach, analysing processes of institutional change in two prototypical collective skill formation systems, Austria and Switzerland, and in two training occupations that are particularly affected by the knowledge economy. Its findings support the assumption that “varieties of liberalisation” characterise institutional change in coordinated capitalist economies since dualisation as well as increasing statism in the provision of skills characterise the analysed reforms. It also shows that even in cases where it is possible to preserve high levels of cooperation, collective action is hard to achieve in the long run because of the cooperation dilemmas entailed in these systems. Lastly, this dissertation finds that vocational education and training can be sustained in the knowledge economy, and not only as a venue for the weakest students to access the labour market, but also as a point of entrance to a career for students with higher aspirations.

Zusammenfassung

Diese Dissertation untersucht, wie sich kollektive Berufsbildungssysteme, zu finden in den deutschsprachigen Ländern, Dänemark und den Niederlanden, an die sich verändernden Qualifikationsanforderungen der Wissensgesellschaft anpassen. Strategische Arbeitgeberkoordination und enge korporatistische Beziehungen zwischen staatlichen und privaten Akteuren sind Merkmale kollektiver Berufsbildungssysteme, weshalb sie auch als prototypische Beispiele koordinierter Marktwirtschaften bezeichnet werden. Während bisherige Studien Prozesse der Dualisierung beschreiben, die institutionellen Wandel in koordinierten Marktwirtschaften charakterisieren, bleibt offen, wie kollektive Berufsbildungssysteme mit dem Druck umgehen, den globale sozioökonomische Trends wie Globalisierung, technologischer Wandel und Deindustrialisierung auf sie ausüben. Die vorliegende Dissertation liefert ein differenziertes Bild der Präferenzen öffentlicher und privater Akteure hinsichtlich der kollektiven Berufsbildung vor dem Hintergrund der Wissensgesellschaft und beschreibt, wie diese Präferenzen durchgesetzt werden. In vier Einzelbeiträgen analysiert sie Prozesse des institutionellen Wandels in zwei prototypischen kollektiven Berufsbildungssystemen, Österreich und Schweiz, sowie in zwei Ausbildungsberufen, die von den Entwicklungen der Wissensgesellschaft besonders betroffen sind. Die Forschungsergebnisse unterstützen die Annahme, dass "Varianten der Liberalisierung" den institutionellen Wandel in koordinierten Marktwirtschaften charakterisieren, wobei sowohl Dualisierung als auch eine zunehmende Rolle des Staates in der Berufsbildung beobachtet werden. Sie zeigt auch, dass selbst in Fällen, in denen es möglich ist ein hohes Mass an Kooperation zu etablieren, dies aufgrund von kollektiven Handlungsproblemen langfristig nur schwer aufrecht zu erhalten ist. Schließlich wird in dieser Dissertation festgestellt, dass die Berufsbildung auch in der Wissensgesellschaft eine wichtige Rolle spielt, und zwar nicht nur als Möglichkeit, um den schwächeren Lernenden den Zugang zum Arbeitsmarkt zu ermöglichen, sondern auch als Einstiegspunkt für eine Karriere für Lernende mit höheren Ansprüchen.

1 Introduction

Globalisation, technological change, and deindustrialisation profoundly question the institutions that constitute coordinated capitalism, most importantly the close cooperation between the state, business, and trade unions. The new constituencies that emerge in response to these socio-economic trends are not covered by the existing industrial relations institutions, which were designed during the formation of the welfare state to protect workers in the industrial sector. As a consequence, less coordination, deregulation and the declining coverage of worker groups characterize coordinated capitalism today (Baccaro & Howell, 2011; Emmenegger, Palier, & Seeleib-Kaiser, 2012; Martin & Thelen, 2007; Streeck, 2009).

These trends also affect collective skill formation systems, which are prime examples of coordinated capitalism (Crouch, Finegold, & Sako, 1999; Streeck & Yamamura, 2001; Thelen, 2014). Collective skill formation systems are characterized by the intense involvement of firms and intermediary associations in their governance and financing, by the provision of certified and standardized skills, and by two training sites, vocational schools and firms, where apprenticeships take place (Busemeyer & Trampusch, 2012a). This last feature explains why the type of skill formation in these countries is often called “dual”. The share of students in vocational education and training (VET) is relatively high in comparison to other industrial economies (OECD, 2017, Indicator C1.3). CEDEFOP, an EU agency specialised on vocational education and training, defines VET as “education and training which aims to equip people with knowledge, know-how, skills and/or competencies required in particular occupations” (CEDEFOP, 2008, p. 202). In contrast to general education, VET prepares for a specific occupation and combines practical training on the job and theory-based education (Field, Hoeckel, Kis, & Kuczera, 2009, p. 108). Because firms are engaged in the definition of training content and the financing of training, it is generally assumed that the skills provided are very close to labour market demands (Busemeyer, 2015; Streeck, 1992). At the same time, states can achieve social policy goals within their VET system, for example the inclusion

of disadvantaged youths into the labour market (Bonoli & Emmenegger, 2020; Bonoli & Wilson, 2019; Carstensen & Ibsen, 2019; Di Maio, Graf, & Wilson, 2020).

Globalisation, technological change, and deindustrialisation change the skills needed in the labour market. Higher education and more general skills, such as analytical skills or language skills, become more and more important (Culpepper & Thelen, 2008; Thelen, 2019). The jobs collective skill formation systems have traditionally prepared for – mid-level jobs in the industrial sector – increasingly disappear (Oesch & Murphy, 2017). Against this backdrop, this dissertation asks how collective skill formation systems adapt to changing skill demands.

Why should we care about the future of collective skill formation systems? The answer to this question can be found in their societal as well as theoretical relevance. Regarding the former, skills and education policies have become a top priority to policy-makers in most developed economies in the last two decades. For example, the 2000 Lisbon Strategy of the European Council as well as its successor strategy, Europe 2020, identify education and skills policies as a priority issue of the European Union to enhance economic growth (European Commission, 2010; European Council, 2000). Many have argued that investments in education are central to social well-being, economic growth, and competitiveness (OECD, various years). Education increases political and social participation of individuals and is key for the successful entrance of individuals into the labour market (Allmendinger, 1989; Busemeyer, 2015).

Western societies have long concentrated on expanding participation rates in higher education. Repeatedly, the Organisation for Economic Co-operation and Development (OECD) criticized countries such as Germany or Switzerland for their low participation rates in universities (OECD, various years). However, during the economic crisis starting in 2008, the focus has shifted increasingly towards vocational education and training, because countries with a strong dual VET system experienced much lower (youth) unemployment rates than countries with a strong university system did (SKBF, 2018, p. 117). It is assumed that the close involvement of employers and trade unions that characterizes collective skill formation systems affects the labour market participation of young people in a positive way (SKBF, 2018). Today, organizations

such as the OECD or the European Union promote the expansion of VET systems (European Union, 2010, 2015; OECD, 2010, 2020).

But the future of collective skill formation systems is not only relevant from a societal perspective. As prototypical examples of coordinated capitalist systems, they represent an excellent case to analyse collective action problems and the interaction between private and public actors in the provision of a collective good. Dual vocational education and training depends on firms that are willing to train apprentices. To do so, these firms need to be convinced that they benefit from training. This is not always the case. For example, other firms could refrain from training and instead poach skilled employees from training firms (Bowman, 2005; Busemeyer, 2009). Therefore, collective action problems are immanent in collective skill formation systems (Acemoglu & Pischke, 1999; Bonoli & Emmenegger, 2020; Marsden, 1999). Globalisation, deindustrialisation, and technological change increase the likelihood of cooperation dilemmas as they remove beneficial constraints and increase uncertainties about the benefits of training and the behaviour of other firms (Brown, Lauder, & Ashton, 2011; Sorge & Streeck, 2016; Streeck, 2009).

In this dissertation, I aim to shed light on the processes of coordination that take place in prototypical collective skill formation systems in response to changing skill demands. I adopt a meso-level perspective, analysing how occupations that are heavily affected by socio-economic trends react to these challenges. In four individual articles, three of them co-authored with other researchers, I trace the origins and effects of various training reforms in Austria and Switzerland. This dissertation has been written in the context of a larger research project on the Governance of Vocational and Professional Education and Training (Swiss Leading House GOVPET). In addition to the four papers that are part of this dissertation, I was engaged with other projects that also touch upon education policies and the governance of education systems. Among these is a project on the systemic governance of the Swiss skill formation system on behalf of the Swiss State Secretariat for Education, Research and Innovation (Emmenegger & Seitzl, 2019b, 2020), two projects on strengthening the governance of the skill formation systems in Portugal and Massachusetts, US, on behalf of the OECD (Seitzl, 2020a, 2020b), and a

project on public spending for early childhood education and care in Germany (Busemeyer & Seitzl, 2018).

In the following, I provide a description of the case of collective skill formation systems as well as a discussion of the challenges that these systems face in the context of globalisation, technological change, and deindustrialisation. Afterwards, I give an overview of arguments in the literature about how corporatist economies adapt to these socio-economic trends before I define several research puzzles that this dissertation addresses. A description of the case selection strategy and the methodological approach, as well as an outline of the four articles that constitute the main part of the dissertation finalize this chapter.

1.1 The Case: Collective Skill Formation Systems

Vocational education and training has a long tradition in the so-called collective skill formation systems, most prominently found in Austria, Denmark, Germany, the Netherlands and Switzerland (Busemeyer & Trampusch, 2012b). The skill formation systems in these countries share three characteristics (Busemeyer & Trampusch, 2012a, p. 14f). First, the proportion of students in VET is comparatively high, and these students typically are trained in both schools and firms. On OECD average, 17 per cent of upper-secondary education takes place in combined school- and workplace-programmes. In collective skill formation systems, the share ranges from 33 per cent in Austria to about 40 per cent in Denmark and Germany and 59 per cent in Switzerland (OECD, 2017, Indicator C1.3).¹

Second, because of the importance of work-based learning, firms, business intermediary associations, and trade unions participate in the administration, financing and reform of the VET system. Thus, all relevant actors are involved in the development of these systems. Third, collective skill formation systems provide portable, certified, and standardized skills, which go beyond the firm level and are recognized on the national

¹ Data for the Netherlands is not available.

labour market. This ensures that employees are not bound to one firm but can apply their skills also in other firms in the same industry.

Thus, collective training systems are very distinct from other training regimes. Compared to other countries, both the degree of public commitment to skill formation and the degree of firm involvement in education and training is high (Busemeyer & Trampusch, 2012a, p. 12). In contrast, in statist systems such as France or Sweden, state commitment to vocational education and training is high, but firms' involvement is minimal. A high share of school-based training characterizes these countries. In segmentalist systems such as Japan, firms have a central role in training while public commitment is low. Systems in which neither firms nor the state engage in training are called liberal. The UK and the US are examples of this kind of skill formation regime (Table 1.1).

TABLE 1.1: Varieties of skill formation regimes in advanced industrial economies

		Public commitment	
		High	Low
Firm involvement	High	Collective skill formation systems (e.g. DE, CH)	Segmentalist skill formation systems (e.g. JP)
	Low	Statist skill formation systems (e.g. FR, SE)	Liberal skill formation systems (e.g. US, UK)

Source: Busemeyer & Trampusch (2012a, p. 12)

In collective skill formation systems, public and private actors work together closely to ensure the supply of skilled labour needed in the economy. This has the advantage that the skills taught in dual training usually are very close to the demands of the labour market, while also fulfilling education policy goals such as the inclusion of disadvantaged groups into the labour market (Bonoli & Emmenegger, 2020; Carstensen & Ibsen, 2019). However, dual training relies on firms willing to train apprentices. In order to do so, firms need to be convinced that they gain from training apprentices

(Streeck, 1997). This can be a difficult task. While, overall, business would benefit from training apprentices because it ensures the provision of a skilled workforce, individual firms have strong incentives not to train (Marsden, 1999). They fear that their participation in the VET system might not pay off because of the risk of poaching of trained workers by other firms, because the training system does not teach the skills that are needed in the individual firms or because of high transaction costs (Acemoglu & Pischke, 1999; Culpepper, 2000; Iversen & Soskice, 2009; Thelen, 2014; Williamson, 1981). Thus, collective skill formation systems face a collective action problem.

Cooperation dilemmas can only hardly be solved by the state as private firms are very reluctant to share private information with state actors and because state sanctions might discourage firms from participating in training (Culpepper, 2003; Finegold & Soskice, 1988). Therefore, employer associations are central to prevent free-riding as member firms perceive them as trustworthy and as they have sanctioning power (Bonoli & Emmenegger, 2020; Culpepper, 2003; Emmenegger, Graf, & Trampusch, 2019; Ryan, 2000). In addition, public policies that support cooperation by providing financial and administrative assistance can help to encourage firms to train apprentices (Culpepper, 2003; Johansen, 2002).

Because of the central role of firms as providers of apprenticeship positions, the literature on collective skill formation systems argues that business is a “pivotal actor” (Busemeyer, 2012). However, business is not a united actor. Rather, differences in the preferences for skills policies exist between small and large firms. Large firms have access to internal labour market, which is why they want employees that are flexible to work in different sections of the firm (Streeck, 1987, 1991). Because they compete in international markets, they also need highly skilled employees (Culpepper, 2007). Therefore, they prefer a skill formation system that includes strong firm-specific elements and ask for administrative control over training. As training content becomes specific to the individual firms’ needs, the mobility of VET graduates would be restricted if large firms enforced their preferences.

In contrast, small firms recruit their workforce mainly from the external labour market. In the absence of an internal labour market for their skills, prospective apprentices are

unlikely to opt for training in a small firm. Small firms thus have a high interest in maintaining occupational mobility, which makes them more attractive as employers (Culpepper, 2007; Culpepper & Thelen, 2008). Also, small firms often lack financial and administrative resources to invest in their employees' skills. Therefore, small firms prefer a strong collective skill formation system (Culpepper, 2007; Thelen, 2004; Trampusch, 2010b).

Also, different preferences might come up between business intermediary associations and their member firms. As intermediaries, these associations represent their members in front of the state and negotiate with other actors in the VET system, for example, other associations at the business and the labour side (Streeck & Schmitter, 1985, p. 19). Thereby, business intermediaries are not simple transmission belts of their members' preferences. Rather, as organizations, they follow their own interests such as ensuring their survival and autonomy from member firms and other organizations they engage with (Schmitter & Streeck, 1999; F. Traxler & Huemer, 2007). Strong collective elements equip them with influence because of the prominent role business intermediary associations play in the governance of these systems (Emmenegger & Seitzl, 2020). In addition, they might also benefit financially from collective VET, for example, because the state provides subsidies for specific tasks they deliver or because firms pay fees for the usage of training workshops provided by the associations. Thus, while especially large firms might have an interest in weakening the collective elements of VET in dual training systems, their intermediary associations might have different preferences.

To summarize, decentralised cooperation between state actors, firms, business intermediary associations, and labour unions characterize collective skill formation systems. As a consequence, the skills provided in training are usually very close to the demands of the labour market. However, collective skill formation systems are prone to cooperation dilemmas as they depend on firms that voluntarily train apprentices. These collective action problems are likely to increase in the knowledge economy, as the next section shows.

1.2 The Challenge: Changing Skill Requirements in the Knowledge Economy

Today's advanced political economies deal with socio-economic trends such as technological change, globalisation, and deindustrialisation, that have the potential to change the skill demands in these economies profoundly. These trends are generally subsumed under the term "knowledge economy" (Hope & Martelli, 2019; Iversen & Soskice, 2015, 2019; Thelen, 2019). The knowledge economy is characterized by "production and services based on knowledge-intensive activities that contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence" (W. W. Powell & Snellman, 2004, p. 201). It comes with an increase in the demand for higher skills and a shift of labour to the service sector. The high participation rates in VET at the upper-secondary level and the strong orientation of apprenticeships towards the industrial sector (Diessner, Durazzi, & Hope, 2020) stand in contrast to the presumed needs of labour markets in the knowledge economy.

On the one hand, the knowledge economy is "associated with a heightened premium on higher education" (Thelen, 2019, p. 295). Scholars in the tradition of the routinisation thesis argue that, because the prize of computer capital declines, computers can be used increasingly to substitute labour (Autor, 2013; Autor, Levy, & Murnane, 2003; Goos & Manning, 2007; Goos, Manning, & Salomons, 2009; Goos, Manning, & Solomons, 2014; Spitz-Oener, 2006). However, only routinized tasks "can be accomplished by machine following explicit rules" (Autor et al., 2003, p. 4), whereas non-routine tasks need to be carried out by humans. The result is "skill-biased technological change", in which high- and low-skilled jobs profit from technological change because in these jobs non-routine tasks dominate. In contrast, the number of medium-skilled jobs with routinized tasks decreases. Others argue that digitisation leads to upskilling but not necessarily to a polarisation of the labour market (Ibsen & Thelen, 2017; Murphy & Oesch, 2018; Oesch & Rodriguez Menes, 2011; Thelen, 2019). According to their findings, factors such as migration, labour market institutions, and "the ways in which employers are encouraged to view technology as complementary to, or a substitute for,

job tasks” (Murphy & Oesch, 2018, p. 1112) mediate the effect of technological change on the labour market.

Summing up, the literature argues that in the knowledge economy, mid-level jobs are hollowed out increasingly. This development has been observed in manufacturing, where lean production strategies dominate (Clement & Lacher, 2007; Herrigel, 2015; Jürgens & Krzywdzinski, 2016). It has also been observed in the service sector, where back-office jobs are increasingly standardized or outsourced to low-cost countries (Brown, Lauder, & Ashton, 2007; Iten et al., 2016; Kinkel & Maloca, 2009).

On the other hand, deindustrialisation and the rise of the service sector characterize the knowledge economy (Ansell & Gingrich, 2013; Hope & Martelli, 2019; Wren, Fodor, & Theodoropoulou, 2013). This comes along with a different type of skills needed in the labour market. It is argued that the service sector prefers general skills over specific skills (Culpepper & Thelen, 2008; Thelen, 2014). In addition, because of the decoupling of business activities from a geographical position, language skills become more and more important (Brown et al., 2011; Lauder, Brown, & Ashton, 2008; Unterweger, 2020). Also, new jobs are created as a response to the rise of the service sector, for example in internet and communication technologies (ICT), that have not been trained in VET before (Anderson & Hassel, 2013; Eichhorst, 2015). Digitalisation enhances these trends since the usage of digital technologies increases productivity in the industrial sector in particular, forcing people to find jobs in non-affected sectors (Zenhäusern & Vaterlaus, 2017). To summarize, the jobs apprenticeships have traditionally prepared for – mid-level jobs in the industrial sector – disappear. Against it, jobs at the higher and lower end of the skill distribution become more important, and the role of the service sector increases.

Two implications arise from this. First, higher skills are increasingly valued when entering the labour market (Ansell & Gingrich, 2013; Diessner et al., 2020; Wren et al., 2013). Thus, vocational education and training competes more and more with university education (Baethge & Wolter, 2015; Severing & Teichler, 2013). For school leavers, apprenticeships might not be attractive anymore since they do not promise a smooth transition into the labour market (J. J. W. Powell & Solga, 2010). As a consequence,

higher education programmes that combine work- and school-based learning gain in importance, as the dual-study programmes in Germany show. These programmes are located at the nexus between vocational education and training and higher education but are governed less collectively than dual apprenticeship training (Graf, 2018). Within the VET system, further training, which takes place after receiving a first vocational certificate, becomes more relevant (Baumeler, Dannecker, & Trede, 2014).

Second, these trends have also implications for the competencies that are taught in initial vocational education and training. Employees need to be able to adapt their knowledge constantly to new skill demands. Next to specialist knowledge, soft skills such as analytic and communicative skills become important (Mayer & Solga, 2008; Zenhäusern & Vaterlaus, 2017). Globalised labour markets require intercultural and foreign language skills as well as ICT competencies. Thus, the more specific skills produced by collective skill formation might need to adapt to the new skill needs in the labour market.

Overall, the knowledge economy increases uncertainty among firms about the type of skills needed and the behaviour of other firms. In addition, digitisation and globalisation remove beneficial constraints, for example, because business activities are not restricted anymore to a geographical area in a globalised and digitalised world (Sorge & Streeck, 2016; Streeck, 2009). Therefore, cooperation dilemmas are likely to increase in collective skill formation systems in the coming years.

1.3 Current State of the Literature

Because of the high levels of strategic employer coordination and private interest governance, collective skill formation systems are prime examples of coordinated capitalism (Culpepper, 2003; Hall & Soskice, 2001; Thelen, 2014). How do these systems react to new skill demands arising as a consequence of broader socio-economic trends such as technological change, globalisation and deindustrialisation? The following section gives an overview of the current state of the literature that could help answer this question. I start with an overview of the literature about institutional change in advanced coordinated democracies and collective skill formation systems more

specifically. In the third part of this section, I present research on innovation and corporatism.

Institutional Change in Coordinated Capitalism

There is a vast literature on institutional change in coordinated capitalism. However, this literature's findings are often contradictory regarding the trajectories of change. Scholars in the tradition of Varieties of Capitalism (VoC) find that political economies are very resistant to change because they create institutional complementarities (Hall & Gingerich, 2009; Hall & Soskice, 2001). The VoC approach builds on the neo-corporatist literature but takes firms at the centre of analysis. It argues that firms act within five spheres of the political economy – industrial relations, education and training, inter-firm relations, firm-employee relations, and corporate governance (Hall & Soskice, 2001). These spheres create institutional complementarities: On the one hand, there are coordinated market economies, characterized by high levels of strategic coordination between firms, trade unions, and other actors. On the other hand, in liberal market economies, competitive markets organize the interaction between firms and the state (Hall & Soskice, 2001). Because institutional complementarities create path dependencies, the political institutions constituting liberal and coordinated market economies remain comparatively stable. Thus, this body of literature assumes that the characteristics of coordinated market economies – non-market coordination, strong intermediary associations, and generous welfare states – do not change.

Another group of scholars observes convergence of coordinated capitalism towards liberal market economies. Adherents of this liberalisation thesis argue that globalisation and deindustrialisation have weakened trade unions, reduced beneficial constraints and put the state under pressure to decrease public expenditure. This resulted in massive deregulation and reductions in social expenditure, creating more social inequality (Albo, 2005; Baccaro & Howell, 2011, 2017; Hassel, 1999; Kinderman, 2017; Sorge & Streeck, 2016; Streeck, 2009). Employers play a key role in this account, as they lobbied intensively for liberalising reforms (Fleckenstein & Lee, 2017; Kinderman, 2017). The latest financial crisis has increased neo-liberal tendencies because it restricted the financial leeway of states (Streeck, 2010; Streeck & Mertens, 2010).

A third group of scholars emphasizes the dismantling of centralized bargaining, social partnership, and other core institutions of coordinated capitalism. However, this does not necessarily take on the form of deregulation, but there exist “varieties of liberalization” (Thelen, 2014). Globalisation (Genschel, 2002; Scharpf, 1991), the growth of the service sector (Martin & Knudsen, 2010; Martin & Thelen, 2007), and the feminisation of labour markets (Estévez-Abe, 2005; Oesch, 2006) produce new groups of employees. Whereas the core group of workers – mainly male and employed in the manufacturing sector – is still covered by existing welfare state arrangements, the new labour market constituencies are not (Emmenegger, Palier, et al., 2012; Martin & Thelen, 2007; Palier & Thelen, 2010; Rueda, 2007). The result is a dualisation of societies, which increasingly differentiates between “rights, entitlements, and services provided to different categories of recipients” (Emmenegger, Häusermann, Palier, & Seeleib-Kaiser, 2012, p. 10).

At the core of this literature is the assumption that industrial relations and welfare institutions rest on political coalitions. In traditional coordinated market economies, these institutions were created and maintained by a cross-class coalition of employers and employees in the manufacturing sector (Martin & Thelen, 2007; Thelen, 2014). New constituencies emerging from globalisation and deindustrialisation, for example, part-time employees, less-skilled workers or employees in the service and public sector, are not part of this political coalition. According to Thelen (2014), how these new constituencies are involved and form coalitions in the political economy affects the trajectories of change in coordinated capitalism. If “the strong and in some way still resilient cross-class coalition that was so central to the politics of coordination in the CMEs is no longer able (labour) or willing (employers) to exercise political leadership for the economy as a whole” (Thelen, 2014, p. 195) and the new constituencies fail to organize, dualisation is triggered (Hassel, 2014; Ibsen & Thelen, 2017; Martin & Knudsen, 2010; Martin & Thelen, 2007; Palier & Thelen, 2010; Thelen, 2014).

However, dualisation is not inevitable. If the service sector and the public sector – hence the new constituencies – manage to organize among themselves, coordinated market economies develop towards “embedded flexibilisation” (Thelen, 2014). In this case,

strategic coordination declines but the coverage of existing institutions remains high because the new constituencies are covered (Bonoli, 2005; Martin & Swank, 2012; Martin & Thelen, 2007; Thelen, 2014). According to Martin and Thelen (2007), the state plays a central role in ensuring the coverage of new constituencies by welfare and labour market institutions. They show that in the case of Denmark, the state was engaged in organizing the employees in the social and service sector. Because of this, Denmark could maintain national-level cooperation in industrial and labour market institutions. In contrast, the case of Germany shows that “strong and well-organized manufacturing interests can pose a serious obstacle to reform efforts that can be overcome only through strong and proactive intervention under the auspices of the state” (Martin & Thelen, 2007, p. 5).

Institutional Change in Collective Skill Formation Systems

Varieties of liberalisation are also observed in the literature on collective skill formation systems. On the one hand, scholars describe a development of collective skill formation systems “towards a less encompassing, more segmentalist orientation, which is organized around internal, rather than national, occupational labour markets (...)” (Thelen & Busemeyer, 2012, p. 71). While the commitment and involvement of firms and the state remain high, collective action is restricted to ever-smaller segments. This leads to a restriction of the occupational and sectoral mobility of employees because collective skill formation systems are increasingly fragmented. An example for segmentalism in a collective skill formation system are the so-called dual study programmes in Germany (Graf, 2018). In these programmes, students are trained in higher education institutions and firms, and gain a Bachelor’s degree. In contrast to vocational education and training, where training content is coordinated between business, labour and the state, in these programmes the typically large firms can influence training content directly (Graf, 2018). Examples of segmentalism also include the introduction of two-year apprenticeships in Germany (Busemeyer, 2012; Thelen & Busemeyer, 2012). In this case, the government met the demands of large employers in the manufacturing sector because it feared that apprenticeship position would be lost otherwise. The reform was enacted against the opposition of trade unions and the crafts sector.

There are firm- and system-level explanations for segmentalism. On the system level, the decline in the training participation of small and medium-sized firms is argued to be an important explanatory factor (Culpepper & Thelen, 2008; Thelen, 2009, 2014; Thelen & Busemeyer, 2012). As a result, the influence of large firms is strengthened because the “state and the unions [...] have a fundamental dependence on the cooperation of business in a very concrete case: the provision of sufficient numbers of training slots” (Busemeyer, 2012, p. 696). Hence, trying to ensure the training participation of the remaining firms, the state increasingly meets the demands of large firms. On the firm level, the decentralisation of wage bargaining institutions is an important factor for explaining segmentalism (Busemeyer & Iversen, 2012; Thelen & Busemeyer, 2012). In systems of decentralized wage bargaining, wage dispersion is larger, and the hiring of skilled workers is thus more expensive compared to the employment of unskilled workers. Because of the high costs, firms in decentralized systems refrain from training above their skill needs (Busemeyer & Iversen, 2012).

Similar as argued in the broader literature on coordinated capitalism, segmentalism is not inevitable in collective skill formation systems but depends on institutional legacies, the strength of trade unions, and party politics (Carstensen & Ibsen, 2019; Durazzi & Geyer, 2020). Thelen (2014) describes a process of embedded flexibilization in the collective skill formation system of Denmark. In this case, strategic employer coordination is decreasing, on the one hand, leading to a liberalisation and individualisation of training content (Thelen, 2014, p. 109). On the other hand, state subsidies compensate for the loss of employer involvement. This results in an expansion of vocational education and training to new constituencies and strengthens the social inclusion function of the Danish skill formation system (Thelen, 2014, p. 108f).

According to Durazzi and Geyer (2020), institutional resources and institutional legacies determine institutional change in collective skill formation systems. They argue that union strength is an important explanatory factor for the segmentalist versus the embedded flexibilization pathway (Durazzi & Geyer, 2020, p. 104). They show that Austria’s trade unions supported the expansion of non-firm-based training to increase the inclusiveness of the VET system, resulting in embedded flexibilization. Their strong

role in the Austrian political economic system ensured that they would be an important partner also in this type of training (institutional resources). In addition, they believed in the quality and efficiency of non-firm-based training (institutional legacies) (Durazzi & Geyer, 2020, p. 119). In Germany, both conditions were not fulfilled, which is why the unions opposed the introduction of non-firm-based vocational training. As a consequence, employers act as gatekeepers when it comes to the inclusion of disadvantaged youths into the German VET system (Durazzi & Geyer, 2020, p. 120).

Coordinated Capitalism and Innovation

The literature on innovation and capitalism asks how market economies stay competitive in a globalised and digitalised world. It argues that the capability to innovate rapidly is essential to compete in the changing circumstances that characterize the knowledge economy (Breznitz, 2007; Ornston, 2012; Zysman, 2006). In contrast, the success of coordinated capitalism builds on incremental innovation, a long-term perspective in the decision-making process, investment in high-quality products, and generous social benefits in exchange for wage restraints (Lundvall & Edquist, 1993; Pontusson, 2005; Porter, 1990; Soskice, 1999; Thelen, 1991). Therefore, “neo-corporatist economies appear poorly equipped to respond to these challenges and opportunities. The same institutions that defended existing industries throughout the post-war period are perceived to inhibit the redistribution of resources to new activities” (Ornston, 2012, p. 11).

However, Ornston (2012) finds that corporatist economics can be innovative and thriving in the context of rapid innovation-based competition. He distinguishes between conservative, competitive, and creative corporatism. Innovation in conservative corporatism takes place in the form of incremental upmarket movement: “Institutional innovation occurs at the margin, circumventing rather than engaging traditional stakeholders” (Ornston, 2012, p. 18). Competitive corporatism is based on market-led adjustments. Neo-corporatist institutions are used to strengthen private actors, which are then expected to boost innovation in the economy (Ornston, 2012, p. 19). However, research and development (R&D) activities are limited in competitive corporatist economies because firms have few incentives to invest in R&D. Breznitz (2007, p. 191)

calls this the “fundamental market failure of industrial R&D”. Lastly, in creative corporatist economies, the state and the social partners collaborate to reorient the economy towards new innovative industries: “Stakeholders can instead ‘convert’ coordination to invest in new actors, activities, and industries” (Ornston, 2012, p. 21). Therefore, creative corporatist economies are characterized by high investments in research and development.

The literature on corporatism and innovation finds that high levels of state engagement as well as stakeholder involvement support innovation in an increasingly globalised and digitalised world (Breznitz, 2007; Breznitz & Zysman, 2013; Mazzucato, 2013; Ornston, 2012). It argues that innovation is an “inherently collective endeavour” (Breznitz, 2007, p. 191), but entails collective action problems, especially with regard to R&D activities. Therefore, the state’s role is to initiate innovation and to help firms develop these innovations further (Mazzucato, 2013). In order to do so successfully, the state has to get firms on board that develop innovations and place them on the market: “We should picture the state, therefore, as the national management consultant and central arbiter and promoter of the industry, with the distinction between public and private roles and power becoming more ambiguous” (Breznitz, 2007, p. 29).

What can we learn from this about collective skill formation systems and innovation? On the one hand, the strong emphasis on vocational education and training is detrimental for rapid innovation according to this literature that emphasizes the importance of higher education and R&D activities.

On the other hand, the state and the social partners play a decisive role in collective skill formation systems. According to the literature on corporatism and innovation, this is a prerequisite for keeping pace in a globalised and digitalised world. Thus, there should be potential for innovation in the context of the knowledge economy in dual training systems. However, research on this aspect is missing so far.

1.4 Research Puzzles

The overview of the different strands of literature that touch upon the question of how collective skill formation systems as prototypical examples of coordinated capitalism react to socio-economic pressures leaves several questions open. I have identified four main research puzzles that the dissertation will answer. In the following, these research puzzles are presented.

The Role of Business

In collective skill formation systems, business intermediary associations and firms play a decisive role in their governance and financing (Busemeyer, 2012; Busemeyer & Trampusch, 2012a; Culpepper, 2003). As described above, the segmentalism literature argues that the role of large employers has increased in the last two decades because the number of training firms decreases which makes these systems only more dependent on the few (large) firms that still train (Busemeyer & Iversen, 2012; Thelen & Busemeyer, 2012).

From the literature on business preferences, we know that small and large firms have different preferences regarding social policies, labour market institutions, but also skills policies (Mares, 2003; Martin, 1995, 2000; Pontusson & Swenson, 1996). While large firms prefer more general skills because they can make use of an internal labour market, the financial and personnel resources of small firms are more restricted (Culpepper, 2007). Therefore, segmentalism is not in the interest of small firms, which prefer (collectively provided) occupational skills and cannot invest too many resources into training (Culpepper, 2007; Trampusch, 2010b). Also, business intermediary associations have not necessarily an interest in segmentalism. Because of their important coordinating role in collective skill formation, a strong collective system gives them influence and authority (Schmitter & Streeck, 1999; F. Traxler & Huemer, 2007).

According to the argument on segmentalism, the influence of small firms is decreasing because they do not train anymore (Thelen & Busemeyer, 2012). However, small firms might be represented by powerful associations that campaign against segmentalist reforms. Also, they might employ a significant share of workers in some sectors, which

gives them a more influential role than in other sectors. Thus, there is potential for conflict among different business actors. The current literature on institutional change in collective skill formation systems does not take this into account. Assuming that business is pivotal but divided, the literature does not explain who succeeds in enforcing its preferences and why.

Chapter 2 in this dissertation addresses the shortcomings concerning the role of business in collective skill formation systems. It theorizes on the preferences of the different actors within the business community as well as on the mechanisms that explain who prevails and why. The theoretical assumptions are then assessed empirically in the context of two large-scale reforms of commercial vocational training in Switzerland. Chapter 3 also looks at the role of business in VET reform but touches on the micro-foundation of institutional change. It analyses coalition-building within incumbent and challenger coalitions. Lastly, Chapters 4 and 5 look at business reactions to the state's involvement in skill provision.

The Role of the State

Collective skill formation systems are not only characterized by high levels of firm involvement but also by a high degree of public commitment to training (Busemeyer & Trampusch, 2012a). Amongst other things, the state provides the legal framework, decides on the establishment of new and the reform of existing training occupations, runs vocational schools, and supports collective training financially (Emmenegger & Seitzl, 2020; Rauner, 2009). However, while the literature attributes a pivotal role in the governance of collective skill formation systems to the business community (Busemeyer, 2012; Thelen & Busemeyer, 2012), the role of the state is often argued to be restricted to institutionalizing the outcomes of coalitional dynamics between incumbents and challengers (Palier & Thelen, 2010).

However, public actors have interests themselves and therefore shape actively which coalition prevails. Global innovation-based competition is likely to increase the role of the state in collective skill formation systems. The literature on corporatism and innovation argues that the state plays a central role in initiating innovation by private

actors to overcome collective action problems (Mazzucato, 2013). For example, because of technological change, new sectors are emerging where business is not organized (yet). In these cases, uncertainty among firms about the benefits of training is high, and collective action problems are very likely to occur (Culpepper 2003). Therefore, the state might replace business as the pivotal actor because it has an interest in a skilled workforce in these sectors.

Chapters 3 to 5 address the role of the state in collective skill formation systems, each with a different perspective. Chapter 3 traces back processes of institutional change in Swiss commercial training. Amongst others, it analyses how the state agency responsible for VET in Switzerland interacts with the incumbent and challenger coalitions and how it influences which coalition prevails. Chapter 4 expands the focus to a new, emerging sector, namely the internet and communication technology (ICT) sector. It analyses how states expand upper-secondary VET to a field, where business preferences are not articulated, and the business community is not organized. Lastly, in Chapter 5, the rivalry between collective apprenticeship training and statist school-based VET is analysed in the context of training at the lower and the higher end of the skill distribution in Austria.

Collective Skill Formation in the Knowledge Economy

The knowledge economy is characterized by technological change and heightened pressure on individuals to increase their skills and educational level (W. W. Powell & Snellman, 2004; Thelen, 2019). The rise of high-tech industries implies that new skills develop, for example, in ICT. Existing research on the future of corporatism argues that economies must invest heavily in research and development activities to stay competitive in an increasingly globalised and digitalised world (Brenitz & Zysman, 2013; Breznitz, 2007; Ornston, 2012). As a consequence, higher education programmes become more and more attractive among employers and young school leavers alike (Graf, 2018).

These developments severely challenge upper-secondary vocational education and training that mainly prepares for mid-level jobs in the industrial sector (Anderson &

Hassel, 2013; Diessner et al., 2020). The question arises if VET has a future in new economic sectors that are emerging in the knowledge economy. Several authors argue that the emergence of ICT pushes coordinated market economies even more towards higher education (Diessner et al., 2020; Wren et al., 2013).

Despite these arguments, collective skill formation systems expand upper-secondary VET to new high-tech sectors, as the introduction of ICT apprenticeships in countries such as Austria, Switzerland and Germany shows. This dissertation aims at contributing to the blank spot that the literature leaves regarding collective skill formation systems and innovation in the knowledge economy. In chapters 4 and 5, I shed light on the processes and motives that resulted in the establishment and institutionalization of upper-secondary VET in the information and communication technology sector in Austria and Switzerland.

Level of Analysis

In all collective skill formation systems, formal rules are stipulated at the national level, for example, in national VET laws (Emmenegger & Seitzl, 2020). However, social practices can vary a lot at the regional, sectoral, and occupational level (Emmenegger et al., 2019). Thus, collective training systems are characterized by decentralized cooperation between private and public actors at these different levels (Culpepper, 2003). However, so far, the literature on the governance of collective skill formation systems is heavily biased towards the national level.² For example, Thelen and Bussemeyer (2012) analyse how state actors in Germany gave in to the demands of large, industrial firms for more flexibility to ensure the participation of these firms in training. Similarly, in her work on varieties of liberalisation, Thelen (2014) describes reform processes at the national level that resulted in liberalisation, embedded flexibilisation, and segmentalism, respectively. Graf (2018) analyses the introduction of dual-study programmes in Germany also from a national perspective.

² Of course, there are several notable exceptions to this. For example, Culpepper (2003) analyses the establishment of dual apprenticeships in France and Eastern Germany at the sectoral level, focusing on the metal and the electronics sector.

This dissertation adopts a meso-level perspective and analyses institutional change at the occupational level. It is at this level where training content is defined by firms, their associations, employee representatives, and occupational schools (Emmenegger & Seitzl, 2020). Thereby, occupations differ a lot – for example, with regard to their size, the number and types of sectors in which they are trained, or the organizational degree of firms and employees. This perspective allows a more detailed picture of the reform processes taking place. The occupational perspective is applied in all chapters of the dissertation. Chapters 2 and 3 analyse institutional change in commercial training in Switzerland, by far the largest training occupation in the country (SBFI, 2019, p. 12). The two subsequent chapters focus on vocational training in the field of information and communication technologies (ICT), an area that becomes increasingly important due to technological change.

1.5 Case Selection and Methodological Approach

This dissertation analyses processes of institutional change at the occupational level in two collective skill formation systems, Austria and Switzerland. I selected Austria and Switzerland as cases because they are prototypical collective skill formation systems and because they are both affected profoundly by global socio-economic trends. As collective skill formation systems, the share of students in VET is comparatively high in both countries. About 70 per cent of the students between 15 and 24 years participate in upper-secondary vocational education and training in Austria and Switzerland (OECD, 2017, C1.3).³ The social partners are essential in the governance of the VET system as they participate in the definition of training content, the financing of training, and the organization of VET exams. In Switzerland, so-called “organizations of the world of work” (*Organisationen der Arbeitswelt*, OdA), which represent the social partners (Strebel, Emmenegger, & Graf, 2020), are responsible for the organization of VET at the occupational level. They define the training regulations, curricula, and final exams (Emmenegger & Seitzl, 2020). The federal government is responsible for the

³ However, the share of students in combined school- and work-based programmes differs between the two countries. In Austria, a larger share of students participate in full-time school-based VET programmes than in Switzerland (OECD, 2017, C1.3).

overall strategic development of the system, monitors its quality, and approves training regulations (Barabasch, Scharnhorst, & Kurz, 2009; Gonon & Maurer, 2012). Since Switzerland is a federal state, the cantons also have a say in VET. Their main responsibility is the organization and provision of the vocational schools, but they are also engaged in other tasks, for example the promotion of VET among young people (Emmenegger & Seitzl, 2020). In Austria, the social partners are represented by the Austrian Economic Chamber (*Wirtschaftskammer*, WKÖ) and the Chamber of Labour (*Arbeiterkammer*, AKÖ). Both chambers form the Federal Advisory Board on Apprenticeships (*Bundesberufsausbildungsbeirat*, B-BAG) that prepares the reform of existing training occupations and the curricula for new occupations (Rauner, 2009, p. 203). Similar to Switzerland, the Austrian federal government is responsible for the supervision of VET and approves new training regulations (Emmenegger & Seitzl, 2020, p. 35).

Austria and Switzerland also share the fact that they are small and open economies and are characterized by strong corporatist institutions. Their small size, both in terms of geography and in terms of population, forces them to open their economy to stay competitive: “Protectionism is therefore not a viable solution for them” (Katzenstein, 1985, p. 24). As a consequence, changing skill requirements in response to socio-economic trends are noticed directly in the two countries. For this dissertation, Austria’s and Switzerland’s exposure to global developments allows analysing the preferences and reactions of the skill formation systems to new skill demands and the resulting trajectories of institutional change.

Besides these similarities, there are also characteristics that distinguish the political economy in Austria from its Swiss counterpart. First, because of the mandatory membership of firms in the Austrian Economic Chamber, business representation in Austria is centralized and encompassing. In contrast, in Switzerland it is decentralized and segmented (Katzenstein, 1984, p. 32). Austria’s particular form of business representation results in a dominance of small and medium-sized firms in economic policy-making (Paster, 2014). In Switzerland, business intermediary associations are differentiated between sectoral and regional associations and between peak-level and

sectoral/regional associations. As a consequence, a cleavage between large, export-oriented firms and smaller firms operating predominantly on the domestic market characterizes Switzerland's political economy (Eichenberger & Mach, 2011, p. 66). Second, trade unions are much weaker in Switzerland than in Austria, where membership in the Austrian Chamber of Labour is mandatory and where the trade unions have a high impact on policy-making (Afonso & Mach, 2011; Emmenegger, Graf, & Strebel, 2020; Obinger, Starke, & Kaasch, 2012; Rathgeb, 2017). Lastly, the role of the state differs in the two countries. In Switzerland, market mechanisms are dominant and political institutions are rather decentralized (Afonso & Mach, 2011, p. 100). In contrast, the Austrian state plays a more active role, resulting in what Obinger et al. (2012) call "smooth dualisation", characterized by more social protection for atypical workers than in other conservative welfare states. According to Katzenstein (1984), these differences make Austria an example of "social corporatism", while Switzerland is an example of "liberal corporatism".

This dissertation adopts a meso-level perspective, analysing processes of institutional change in different training occupations, namely upper-secondary vocational training of commercial employees and information and communication technology (ICT) experts. This allows for a better understanding of the decentralized cooperation that takes place in collective skill formation systems and departs from the dominant research approach, which analyses national change processes at the macro level. Commercial training prepares for clerk positions in diverse fields such as customer service, human resources, and marketing. ICT experts are employees, "who have the ability to develop, maintain and operate ICT systems" (OECD, 2004, p. 219) and where "ICTs constitute the main part of their job" (OECD, 2004, p. 219).

Several reasons justify the selection of the training occupations analysed in this dissertation. First, both training occupations are affected profoundly by global socio-economic trends. Commercial training is a very suitable case for the routinisation thesis, which argues that in the knowledge economy, routinized tasks are substituted by new technologies or outsourced to other countries. For Germany, Dengler & Matthes (2015, p. 18) find that more than 40 per cent of the tasks that are performed by commercial

employees could be substituted potentially by digital technologies. The situation in Germany is comparable to Switzerland, where a recent study shows that twenty to thirty per cent of commercial employees perform tasks that are likely to be outsourced to low-wage countries (Iten et al., 2016). In contrast, the training of ICT experts is a nearly ideal test case for the capability of dual vocational education and training to expand to new sectors that are emerging in the knowledge economy. ICT have become a major source of innovation and economic growth in the last two decades (Breznitz & Zysman, 2013; Mazzucato, 2013; Ornston, 2012; Zysman, 2006). States have a high interest in ensuring the provision of trained ICT experts to be able to participate in the global competition for high-tech industries. Given the importance of VET in collective skill formation systems, it can be expected that vocational training of ICT experts is a crucial factor to ensure the supply of skilled labour in this area.

The second reason why I chose commercial training and the training of ICT experts is their relevance within the Austrian and Swiss skill formation system in terms of size and the economic sector they belong to. First, as both are service sector occupations, their importance is increasing, given the processes of tertiarisation that take place in advanced political economies (OECD, 2005b). Second, commercial training is simply relevant because of its size. Being by far the most popular training occupation in Switzerland (SBFI, 2019, p. 12), it can be assumed that reforms in commercial training have an effect on the overall VET system in Switzerland. Third, while the number of apprentices in ICT is also substantial, the main reason for choosing this training occupation is the fact that it takes place in an emerging field that is of great importance in the knowledge economy (Breznitz & Zysman, 2013; Eurostat, 2019).

Third, both occupations are trained in a large number of very different sectors. Commercial employees work in a wide range of industries, for example, in banks, logistics companies, tourism, and the public sector (SKKAB, 2016a). Similarly, ICT experts do not work only in the ICT sector but in a diverse set of industries, from retailing over the industrial sector to banking (WKÖ, 2020). As a consequence, there is a large number of very heterogeneous actors (concerning size as well as economic sector), especially among business actors. Assuming that not only large firms influence

institutional change in collective skill formation systems but that intermediary associations and small firms voice their preferences as well, the analysis of these two occupations allows me to gain a better picture on the preferences and strategies of a large variety of actors.

The dissertation uses the case study method to answer the question of how collective skill formation systems adapt to changing skill demands. A case study is “an intensive study of a single case or a small number of cases, which draws on observational data and promises to shed light on a larger population of cases” (Gerring, 2007, p. 28). The in-depth study of a small number of cases allows gaining insights into the mechanisms that link causes and effects (George & Bennett, 2005; Gerring, 2004). Chapters 2 and 3 of the dissertation are built on a single-case study and explore the temporal variations in this case to analyse processes of institutional change. In these single case studies, I use process tracing as a method of analysis. Process tracing is “the systemic examination of diagnostic evidence selected and analysed in the light of research questions and hypotheses posed by the investigator” (Collier, 2011, p. 823). In Chapters 4 and 5, the dissertation conducts cross-case comparisons to explore co-variation between the cases (George & Bennett, 2005). Again, a temporal perspective is adopted to capture processes of institutional change.

To be able to draw conclusions from individual cases to a broader population of cases, a careful case selection strategy is key (Gerring, 2007). In this dissertation, I analyse institutional change at the occupational level in two prototypical collective skill formation systems, Austria and Switzerland. Assuming that the knowledge economy affects other dual training systems in a similar way, the case selection strategy allows drawing generalizable propositions about the whole population of collective skill formation systems. In addition, the findings of this dissertation might be true for other aspects of coordinated market economies besides skill formation, since collective skill formation systems are prototypical coordinated capitalist systems. The selection of the two occupations – commercial training and the training of ICT experts – gives insights into two areas that are affected profoundly by the knowledge economy. Assuming that these global socio-economic trends continue to change political-economic institutions

in coordinated capitalism, the patterns observed in the two occupations could be exemplary for other service sector occupations, especially those who are emerging in the knowledge economy.

The dissertation builds on a large number of different data sources to gain a full picture of the processes underlying the occupational reforms observed. First, I conducted about forty interviews with individuals identified as “experts”. There are various reasons why I consider the interview partners as experts. For example, some of them were leading figures in the reform processes observed, some of them monitored the reform processes scientifically, and some of them are currently presiding an organisation involved. The interviews cover all important stakeholders: government agencies, business intermediary associations, training firms, and trade unions. Interviewing a broad range of involved organisations ensures that I take into account a large variety of views on the reform processes (Martin, 2013, p. 117f). The interviews are semi-structured in order to be able to compare the content of the interviews while not neglecting important issues (Leech, 2002, p. 665). I triangulated the interview data with primary and secondary literature, including position papers of stakeholders, press releases, statutes of organizations, VET ordinances, government statements etc. Besides, newspaper articles were used as a source. For the case studies on ICT training in Austria and Switzerland, these articles were retrieved from the media database Factiva. Lastly, I retrieved official government documents on the consultation process regarding the reform of Swiss commercial training from the Swiss Federal Archives in Berne. The individual articles that form the main part of this dissertation give detailed insights into the empirical strategies applied.

1.6 Outline

This dissertation investigates how collective skill formation systems react to changing skill requirements in four separate articles. Every article addresses some of the open questions highlighted above. At the same time, each of them approaches the research question from a different angle. Before presenting them in the following chapters, this section provides a brief summary of the individual articles.

The first article analyses the politics of segmentalism by asking who prevails in the reform of commercial training in Switzerland and why. It is co-authored with Patrick Emmenegger and published in the British Journal of Industrial Relations. Building on existing literature on business interests, it distinguishes between business actors, assuming that the preferences of firms differ according to their size and that business intermediary associations might have different interests as the firms they represent. The article argues that actors need to have a credible exit option and have to be able to voice their preferences collectively to be influential. In contrast, actors not represented by an intermediary association and dependent on collective training as a mean of skill provision are least powerful. The article finds that large firms are in a privileged position because they are organized and because they have alternatives to collective training. This facilitates segmentalism. However, segmentalism is avoidable if the supporters of a collective system have the means to force large firms to compromise, for example, by organising in strong intermediary associations.

The second article, co-authored with Patrick Emmenegger and published in Business & Politics, analyses the micro-foundations of institutional change and stability in collective skill formation systems, thereby responding to the paradox of plasticity that asks how institutions can have a causal role when they are challenged constantly. We argue that agency characterizes all situations of stability and change in institutions because it is needed when creating challenger coalitions, maintaining incumbent coalitions and gaining or maintaining support by state actors. Thereby, the agency's primary role is to be found in coalitional work by organized entrepreneurial actors. The article analyses the reform of Swiss commercial training and finds that coalition building is complicated, which contributes to the stability of institutions. One reason for this stability can be found in the role of the state that actively shapes whether the incumbent coalition or the challenger coalition prevails. Because the state prefers stability over change, it often privileges incumbents.

The third article departs from analysing existing training occupations and asks how collective skill formation systems ensure the provision of collective training in an occupational field that is of great importance in the knowledge economy, namely

information and communication technologies (ICT). Economies have a high interest in ensuring the provision of trained ICT experts to be able to participate in the global competition for high-tech industries. At the same time, the provision of ICT experts is challenging because of the cooperation dilemma inherent in these systems. I argue that the state plays a crucial role in initiating VET in this sector because firms are not able to voice their preferences collectively. However, the strong role of the state does not necessarily lead to a shift of collective to statist VET. Rather, institutional legacies shape the preferences of public authorities, defining what type of training the state enacts. Empirically, the paper examines how Austria and Switzerland integrated ICT into their VET systems. It finds that maintaining collective action in the knowledge economy is a very demanding task and requires an active state that is willing to engage in the establishment of institutions enabling coordination between private actors and to build up beneficial constraints that make apprenticeship training attractive for firms.

The fourth article analyses employer reactions to situations in which the state replaces firms in the provision of skills. Co-authored with Daniel Franz Unterweger, we argue that, while initially not intended, the expansion of statist training reinforces the decline of the number of training firms because it “unconstrains” firms, offering an attractive exit opportunity from employer coordination. We analyse these trajectories by looking at two reforms in the Austrian skill formation system at the higher and the lower end of the skills distribution: the expansion of VET to the field of ICT and the introduction of public training workshops. Both sectors can be expected to expand as the growth of the knowledge economy progresses because trends towards higher skill needs do not only lead to a growth of educational options at the higher end of the skill distribution but also necessitate the integration of those unable to cope with increasing skill demands (e.g., the lower end). We find that in both cases, employers increasingly learned to like statist VET because it allows them to save costs while the provision of a well-trained workforce is still ensured.

Summing up, this dissertation makes two broader contributions regarding the question of how collective skill formation systems adapt to changing skill requirements. On the one hand, its goal is to provide a more fine-grained picture of the preferences of the

different public and private actors in collective skill formation, including small firms, large firms, intermediary associations, and state authorities, and to contribute to our knowledge about how these preferences are enforced. On the other hand, it aims to shed light on the issue of how collective skill formation systems deal with the pressures that globalisation, technological change and deindustrialisation put on them.

2 Collective Action, Business Cleavages and the Politics of Control

Segmentalism in the Swiss Skill Formation System

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with Patrick Emmenegger, University of St. Gallen

Collective skill formation systems have come under sustained pressure in recent years. Scholars observe a fragmentation process, which is the result of changing power relations, putting large training firms in a dominant position. However, so far, the literature has examined neither the role of small firms and intermediary associations nor the source of power of the various business actors. In this case study, we ask: If business is pivotal, but divided, who prevails and why? We find that the availability of credible exit options and the ability to act collectively determines the degree of influence of the various business actors.

2.1 Introduction

Collective skill formation systems are prime examples of co-ordinated capitalism and have thus attracted much scholarly interest (Busemeyer, 2012; Crouch et al., 1999; Culpepper, 2003; Hall & Soskice, 2001; Streeck & Yamamura, 2001; Thelen, 2014). Three characteristics distinguish them from other training regimes and make them particularly relevant for scholars of varieties of capitalism (Busemeyer & Trampusch, 2012a, p. 14f): First, collective systems are dual systems, where training takes place in both schools and firms. Second, firms and their intermediary associations participate in the financing and administration of training, which presupposes inter-firm cooperation and the ability to act collectively. Third, collective systems provide occupational skills

that are portable, certified and standardized beyond the firm level. Hence, collective skill formation systems are based on high levels of non-market co-ordination and private interest governance and are thus possibly the best examples of co-ordinated capitalism.

Yet, these systems have come under sustained pressure in recent years due to the deindustrialization, globalization and digitalization of economies. These secular trends have major implications for the skill needs of the labour market. In general, the demand for higher and more general skills is increasing (Baethge & Wolter, 2015; Mayer & Solga, 2008). Partly as a consequence, the number of training firms has decreased considerably (Culpepper & Thelen, 2008). In addition, since firms are differently affected by these trends, the skill demands of firms have become increasingly fragmented.

Various scholars have observed that the content and governance of training increasingly focuses on the needs of large firms in these systems, resulting in a less encompassing and more segmented labour market with limited occupational mobility for employees (Graf, 2018; Hall & Thelen, 2009; Thelen, 2009). Scholars call this “segmentalism”. It is argued that small firms increasingly exit from collective skill formation because training becomes too costly for them. In order to motivate the other (larger) firms to remain in the system, the state agrees to their demands for a more fragmented skill formation system. However, by doing so, the collective nature of these skill formation systems is increasingly undermined.

The literature on segmentalism has greatly enhanced our understanding of recent developments in collective skill formation systems, but several questions remain. First, since most of this literature examines the German case, we ask whether this fragmentation can also be observed in other such systems. Second, the literature on collective skill formation systems emphasizes the role of within-business cleavages, in particular with regard to firm size. However, so far the literature on segmentalism has focused mainly on large firms as the drivers of this development. What happens when small firms do not exit from training? And what role, if any, do business intermediary associations play? Finally, we turn to the politics of segmentalism and ask: If business is pivotal, but divided, who prevails and why?

Empirically, we analyse the reform of commercial training in Switzerland, tracing developments from the mid-1980s until today. Switzerland is a prominent example of collective skill formation systems, not least because it is the country with the highest share of youth entering dual apprenticeships (Ryan, 2012, p. 382). At the same time, commercial training is by far the most popular type of apprenticeship in Switzerland (SBFI, 2016, p. 14). Commercial training prepares for administrative and custom-centred activities in diverse fields such as bookkeeping, human resources and marketing. It takes place in a wide range of industries, for example, in banks, in commerce and in the public sector.

Yet, commercial training is a least-likely case for segmentalism. Unlike most other types of training in Switzerland, vocational schools and their association traditionally have had the most influence on the governance of commercial training and not the large manufacturing firms that are typically identified as the drivers of segmentalism. In addition, the firms participating in commercial training are very heterogeneous, with regard to both size and economic sectors. As a consequence, a large number of business intermediary associations operate in commercial training and small firms, too, play an important role. Nevertheless, as we show in the case study, in the 1990s a reform process was set in motion that fundamentally changed the governance of commercial training. Today, firms and their associations not only participate in the financing but also in the administration of it.

Our analysis reveals that firms with credible exit options and the ability to act collectively through industry-level business associations are the main drivers of segmentalism. However, in the Swiss case, these firms' power was partly kept in check by the agile peak-level association of small- and medium-sized firms, which share the large firms' interest in control of training but have no interest in a fragmented training system. As a result, the reform activity paradoxically led to a collectivization of commercial training in the first phase of the reform with business attacks primarily directed at the role of vocational schools and their association. Only in the second phase of the reform, with the vocational schools out of the picture, could the large firms'

preferences prevail at least partly by threatening collective exit, which triggered segmentalism.

Thus, our case shows that collective skill formation systems may maintain their generally collective nature if their supporters, mostly small firms, have the means to force large companies to compromise. These means include strong intermediary business associations and the ability to undermine the credibility of the large firms' exit threat. However, our case also shows that large, internationally oriented firms with collective exit options are in a formidable position to enforce their preference for segmentalism in all collective skill formation systems since they become increasingly dominant. Some elements of segmentalism may thus be unavoidable.

This article is structured as follows. In the next section, we review the literature on segmentalism in collective skill formation systems and argue that the role of small firms and intermediary associations should not be neglected. Subsequently, we discuss businesses' preferences and develop a model to explain whose preferences are likely to prevail in the political process. We then present our empirical case, the reform of commercial training in Switzerland. A final section concludes.

2.2 Segmentalism in Collective Skill Formation Systems

In collective skill formation systems, state agencies, firms, trade unions and business intermediary associations closely co-operate in order to ensure a well-functioning training system. However, scholars have recently observed a development of these systems "towards a less encompassing, more segmentalist orientation, which is organized around internal, rather than national, occupational labour markets and caters increasingly to the specific needs of large training companies" (Thelen & Busemeyer, 2012, p. 71).

Importantly, this literature does not argue that collective systems have become almost entirely dominated by firms, as observed for instance in Japan or South Korea. Rather, the process leads to the fragmentation of collective training systems into an increasing number of parts with limited mobility between them. However, despite this process of

segmentalism, these training systems remain collective because the commitment and involvement of firms and the state remain high (Busemeyer & Trampusch, 2012a). Yet, collective action is confined to an increasing number of ever-smaller segments.

Some examples include the 2003 introduction of two-year apprenticeships in the German skill formation system, where the government met the demand of mostly large employers in the manufacturing sector (Busemeyer, 2012; Thelen & Busemeyer, 2012). The reform was enacted despite the opposition of trade unions and the crafts sector, with the latter fearing that it could no longer make use of apprentices as a cheap workforce. The literature on segmentalism in collective skill formation systems also takes the dual-study programmes in Germany as examples of employers' influence on training (Busemeyer & Thelen, 2016; Graf, 2018). In these programmes, students are trained in higher education institutions and firms where they gain a Bachelor's degree. Since these programmes do not take place within the traditional collective governance mode of dual training, the typically large firms can influence these programmes directly.

When looking at the causes of these developments, the literature distinguishes between firm-level and system-level explanations. With regard to the latter, researchers have pointed to the secular decline in the training participation of small- and medium-sized firms (Culpepper & Thelen, 2008; Thelen, 2009, 2014; Thelen & Busemeyer, 2012), which has resulted in a considerable lack of apprenticeships in Germany since the mid-1990s (Beicht, 2009; Ulrich, 2006). This development has strengthened the hand of large firms because the "state and the unions . . . have a fundamental dependence on the co-operation of business in a very concrete case: the provision of sufficient numbers of training slots" (Busemeyer, 2012, p. 696). Hence, in trying to ensure the training participation of the remaining firms, the state has increasingly met the demands of large firms.

The firm-level explanation centres on the question of which types of skills firms want. According to this literature, segmentalism is the result of a decentralization of wage bargaining (Busemeyer & Iversen, 2012; Thelen & Busemeyer, 2012). In systems where this occurs, wage dispersion is larger and the employment of skilled workers is more expensive compared with the employment of unskilled workers. Therefore, in contrast

to centralized wage bargaining systems, firms in decentralized systems refrain from training above their skill needs. This explains why in Germany the collective nature of the skill formation system has increasingly come under pressure since the country has experienced a massive decline in centralized wage bargaining since the mid-1990s (Thelen & Busemeyer, 2012, p. 82ff).⁴

The literature on segmentalism in collective skill formation systems has greatly contributed to our understanding of them. Most importantly, the literature shows that business is the “pivotal actor” (Busemeyer, 2012) in collective skill formation systems because they rely on firms voluntarily offering apprenticeship positions. As a result, business is in a structurally privileged position (Lindblom, 1977): Unless firms offer training positions, the system collapses. In addition, the various authors have shown that skill formation systems do not remain stable but react to changes in the labour market and adjacent policy fields. By focusing on the increasing influence of large firms, they have identified a key factor causing institutional change in collective skill formation systems.

However, in order to understand segmentalism in collective skill formation systems better, further research is needed, at least on three respects. First, the existing literature has focused mainly on Germany, which is of course the largest, but it is certainly not the only country with a collective skill formation system. The interesting question is; can segmentalism also be observed in countries with similar systems?

Second, while scholars emphasize the different skill preferences of small and large firms (Culpepper & Thelen, 2008), the segmentalism literature has mostly focused on large firms, since it is argued that small firms exit from training. But what about the small firms that do not? Segmentalism is certainly not in their interest; they prefer (collectively provided) occupational skills and cannot invest many resources in training (Culpepper, 2007; Culpepper & Thelen, 2008; Trampusch, 2010c). In addition, segmentalism is not

⁴ This firm-level explanation cannot account for the Swiss case because wage bargaining has always been rather decentralized in Switzerland. For this reason, and unlike Germany, wage bargaining and vocational training were never strongly coupled. We therefore focus on the system-level explanation in the remainder of this article.

necessarily in the interest of business intermediary associations that profit from a strong collective system, because theirs is an important co-ordinating role (Schmitter & Streeck, 1999; F. Traxler & Huemer, 2007). Thus, there is great potential for conflict within the business community that has not been addressed yet.

Finally, the mechanisms that explain the dominance of large firms remain rather blurred. Busemeyer (2012) rightly points to the fact that the state is only semi-autonomous vis-à-vis business because of the institutional set-up of collective skill formation systems. However, it remains unclear on what exactly the large firms' power is based, especially when looking at the conflicting preferences within the business community. Put differently, if business is pivotal but divided, who prevails and why?

2.3 A Model of the Politics of Segmentalism

The literature on segmentalism in collective skill formation systems identifies large firms as the pivotal actors. They can enforce their preference for a more fragmented skill formation system because the state depends on their participation as training firms. However, as we show below, segmentalism can also be observed in cases in which small firms make up an important part of the training firms and in whose administration, historically, business played only a minor role.

Actors and Their Preferences in Swiss Commercial Training

In the case study, we look at the reform of commercial training in Switzerland, which covers 20 per cent of all apprenticeships and is thus by far the most popular training occupation (SBFI, 2016, p. 14). For two main reasons, commercial training in Switzerland is a least likely case for segmentalism. On the one hand, large manufacturing firms, typically identified as the drivers of segmentalism, were historically not pivotal in Swiss commercial training. Rather, vocational schools and their umbrella association have traditionally had the most influence on commercial training. Since its formation in the late nineteenth century, *KV Schweiz* – a hybrid organization that owned many of the schools providing commercial training, while simultaneously representing the interests of commercial employees (not employers) – was responsible for the governance of commercial training, including examination and

certification (Winkler, 1973).⁵ Importantly, until the 1980s, training in firms was not relevant for the final exams, thus allowing *KV Schweiz* a disproportionate influence on training content compared with employers. However, as we show below, within 20 years employers managed to change the power relationships in commercial training completely, which is surprising given the strong role of path dependency.

On the other hand, the firms engaged in commercial training are very heterogeneous in terms of size and economic sector and include many small firms. Commercial training is organized in over 20 different industries, each organized in an association (SKKAB, 2016a). The one representing the small and domestically oriented training firms is by far the largest (Bundesamt für Statistik, 2017). Thus, large firms do not dominate commercial training, but large and small firms take an equal part. The important role of small firms is not specific to commercial training. In Switzerland in general, business is characterized by the contrast between small firms that are mostly active in the domestic market and large, typically export-oriented companies (Bonoli & Mach, 2000). The contrast is also mirrored at the level of peak-level employer associations in the division between the Swiss Trade Association (SGV) which typically organizes the former, and the Swiss Employers' Association (SAV) which generally represents the latter (Kriesi & Trechsel, 2008, p. 100ff). Hence, Switzerland, including the commercial occupation, is not only characterized by a large number of multinational firms (Culpepper, 2007), but also by exceptionally well-organized small- and medium-sized ones.

This mapping of the actors involved in the governance of training is important because of the range of preferences.⁶ Large firms can access internal labour markets, which make them emphasize the functional flexibility of their employees (Streeck, 1987, 1991). At

⁵ Swiss commercial employees founded *KV Schweiz* in the late nineteenth century in order to promote the knowledge and education of their fellow employees. To further this goal, the association established numerous vocational schools (Winkler, 1973). The hybrid nature of *KV Schweiz* as a school organization and employee association is thus the result of its historical origins.

⁶ A large body of literature deals with the skill preferences of firms in vocational training (Culpepper, 2007; Culpepper & Thelen, 2008; Thelen, 2004; Thelen & Busemeyer, 2012; Trampusch, 2010c). We derive our expectations about business preferences in Swiss commercial training from this literature. However, as we show below, our interview partners have confirmed these assumptions.

the same time, they are in need of high levels of skills in order to be able to compete in international markets (Culpepper, 2007). To ensure that these needs are met, they demand more firm-specific elements in, and administrative control over, commercial training. This pushes the training system towards more segmentalism.

In contrast, small firms prefer a collective/non-segmentalist skill formation system because this provides them with occupational skills for the external labour market and because it is less costly for individual firms (Culpepper, 2007; Thelen, 2004; Trampusch, 2010c). Occupational mobility, here understood as job mobility within the same occupation but across economic sectors, is an important issue for small firms because it increases their attractiveness as employers and facilitates the recruitment of skilled workers. In addition, small firms are more cost-sensitive than large ones (Culpepper, 2007; Culpepper & Thelen, 2008). Thus, small firms profit from a strong collective system and therefore oppose segmentalism.

Next to firms, business intermediary associations are key actors today. The work-based part of commercial training is separated into more than 20 industries, which are governed by different business intermediary associations. These are responsible for the newly introduced industry-level training (so-called inter-company courses) and co-ordinate work-based training. In addition, the two Swiss peak-level employer associations, the SGV and the SAV, are involved in the governance of commercial training as well. While, historically, the peak-level employer associations played no central role, today the two associations, and the SGV in particular, are important in the governance of commercial training.

These numerous intermediary associations are of course not simple transmission belts of their members' preferences. Rather, they are concerned with their organizations' prestige as well as autonomy—from their members and other powerful organizations in their environment (Schmitter & Streeck, 1999; F. Traxler & Huemer, 2007). As a consequence, the policy preferences of intermediary associations engaged in the governance of vocational training are also influenced by the logic of organization building, according to which control over commercial training strengthens the respective associations' power and prestige (Trampusch, 2010a).

Importantly, the role of these associations is often predicated on the collective nature of commercial training, where they define the training content, develop the curricula and organize vocational education and training (SBFI, 2016). In contrast, when these tasks are transferred to individual firms (or small groups of firms), the intermediary associations' control decreases considerably. Therefore, like small firms, intermediary associations are not necessarily interested in segmentalism. However, it should be emphasized that intermediary associations organized at the industry level might support segmentalism at the level of industries, as this development can strengthen their role at the expense of peak-level associations.

Summing up, although business is the pivotal actor in the Swiss skill formation system, there are important divisions within the business community. In commercial training, specifically, a large number of different firms and associations participate in its governance, which is also mirrored in varying preferences. Whereas segmentalism meets the needs of large firms for high and specialized training, small firms and some of the intermediary associations at the industry and national level might oppose this development. Therefore, in order to explain the reforms of Swiss commercial training it is not enough to single out businesses. Rather, one has to look at the power relationships within the business community. If business is divided, who prevails and why?

The Politics of Segmentalism

In order to shed some light on the power relationships within business, we refer to Hirschman (1970) who distinguishes between three possible reactions of business to unsatisfactory situations. Firms either abandon a certain activity ("exit"), formulate their discontent ("voice") or accept the unsatisfactory situation ("loyalty"). Since Hirschman's strategies are not mutually exclusive, we follow Collier et al. (2012, p. 225) and distinguish between two dimensions: (1) loyalty versus exit and (2) collective or non-collective voice.

With regard to the first dimension, the credibility of an exit option depends on the existence of alternatives to the status quo. In the case at hand, this can be a complete abandonment of commercial training or the use of alternative ways of skill formation

(e.g. traineeships or the employment of university graduates). Importantly, the credibility of the exit option and the resulting costs for those staying are not set in stone. Rather, the implications of exit are a function of exogenous factors. For instance, while a lack of apprenticeships is likely to increase the power of training firms (Busemeyer, 2012), business scandals may weaken the credibility of the exit threat due to reputational costs.

Regarding the second dimension, we maintain that the use of voice must be a collective exercise. In commercial training, numerous firms are involved; only in exceptional circumstances will the exit of a single firm (or the threat thereof) be noticed. Hence, firms need to act collectively to be heard. Importantly, spontaneous collective action is difficult and so the ability to act collectively is greatly facilitated by the presence of an intermediary association (Olson, 1965). Industry-level business intermediary associations can assist in organizing and communicating the possible collective exit of firms.⁷ However, it needs to be emphasized once again that these associations are not simple transmission belts of their members' preferences. Hence, whether they encourage or discourage their members' desire to exit is a matter to be addressed empirically.

Consequently, the most powerful firms are those, which have a credible alternative at hand and can mobilize quickly because they are organized in intermediary associations. They can proactively push for institutional change. However, this combination is not without tension. Firms in highly organized sectors will be less likely to threaten their exit since they are tightly integrated in a collective association. Therefore, this combination might occur only in very specific cases in which the exit option is easily available. With regard to commercial training, these cases of powerful challengers can be found in the banking and insurance industries which are big enough to manage their own occupation, are well organized in business intermediary associations and the relevant occupation is their main business. Therefore, it is generally accepted that these

⁷ According to Woll (2014, 2016), the inability to act collectively can also be a source of power for employers because they can credibly claim that they are not able to respond to state demand without the support of a collective association. In our case, however, business asks the state for institutional change and the availability of a collective exit threat determines if challengers can act proactively or only react.

firms are able to exit collectively. In addition, their exit would imply high costs for those remaining since they are some of the biggest industries engaged in commercial training (Bundesamt für Statistik, 2017).

Firms lacking an organization to represent their collective interest do not have a proactive exit threat at hand, since they are unable to act collectively through an organization. Therefore, their exits are often unorganized and typically reactive. Nevertheless, these firms are influential because they could exercise an exit option. What is more, their influence increases as the number of firms exiting swells. In this case, the political salience of their demands grows, since their exits are increasingly recognized as system threatening (Culpepper, 2011). In this situation, their dissatisfaction is heard. As we show below, the power of reactive exit became visible when small firms appeared to exit in large numbers in response to the first reform of commercial training, which prompted the others involved in the reform process to perceive their exit as a problem.⁸

The presence of business intermediary associations complicates this simple model. As organizations, business intermediary associations cannot exit from training because they do not offer apprenticeships. However, they can use their members' exit option in negotiations. In fact, throughout the reform debate, the Swiss Trade Association (SGV) asserted that its members, mostly small and medium-sized firms, would exit from training if the reform were not in their interest. However, in contrast to the banking and insurance industries, these firms are too small to organize their own training programmes. Rather, their exit would imply the complete abandonment of commercial training. Such an abandonment of training is not in the interest of the SGV, because it would reduce the association's control over commercial training.

⁸ The remaining firms have little influence. Although they might also be dissatisfied with the current state of the training system, they cannot exit the system because they lack any credible alternative. If some of them are able to act collectively, they can express their criticism from within the system, but their inability to exit severely weakens their position. 'Loyal' companies without the ability to act collectively have – despite their dissatisfaction with the situation – virtually no ability to influence change.

In sum, our model of business power suggests that firms with credible exit options and the ability to act collectively are the main drivers of reform. In the case of commercial training, these firms can be found in the banking and insurance industries, although their exit options' credibility, as we show below, varied over time. However, firms are not the only relevant actors. In particular, we expect the power of large firms dominating these industries to be partly kept in check by the influential peak-level association of small- and medium-sized firms, which shares the large firms' interest in control over training but has no interest in an increasingly segmentalist training system. In addition, less well-organized (small) firms can become a powerful force in the reform debate if their individual exits in response to the reforms are increasingly considered system threatening.

2.4 The Reform of Commercial Training

In order to understand the politics of reform in Swiss commercial training better, we examine the decisive steps of the reform process as well as the actors involved in that process. We systematically collected primary resources such as government documents and position papers of the involved intermediary associations and secondary political science literature as well as literature in the field of business education. In addition, we conducted seventeen interviews with people who were actively participating in the reform process. Most of them were at that time representatives of state agencies and intermediary associations but we also talked with independent experts involved in the reform. The interviews were conducted in 2016 and 2017 in various Swiss cities. The interview data were triangulated with the above-mentioned primary and secondary sources and with newspaper articles on the reform of commercial training in Switzerland.

Setting the Reform Process in Motion: A Large Business Coalition for Control Over Training

Historically, commercial training emerged out of a *KV Schweiz* initiative that aimed at educating commercial employees (Winkler, 1973). Ever since its creation, *KV Schweiz* remained firmly in charge of developing the content of the apprenticeships (Späni,

2011). As it owned most of the relevant vocational schools, the school-based part of commercial training was dominant. In contrast, the training firms played a secondary role in the system's governance. Work-based training was regulated very little as the skills taught in firms were not tested in the final examinations. Commercial training was thus unusual in the Swiss skill formation system because business interest associations did not dominate its governance. Consequently, commercial training was repeatedly criticized for being too distant from the labour market (CH2; CH3; CH10).

Firms in the banking and insurance industries were the ones most discontented with commercial training (CH5; CH6; CH11; CH17). Both industries recruit their workforces primarily from commercial employees, are big enough to organize training by themselves, are characterized by large firms operating on international markets and are supported by strong intermediary associations. As the firms in these industries have a credible exit option at hand, which they repeatedly expressed publicly, these industries are powerful actors in the training system (CH6; CH10; CH11; CH17). They criticized the excessive focus of commercial training on the needs of schools and not on those of the firms. According to them, participating in training was not attractive for firms, because the apprentices did not learn the skills that were required in the labour market. In order to increase attractiveness, firms needed more control over commercial training and training content would have to be adapted to the specific needs of individual firms.

By focusing on the skill needs of individual firms, and in particular large banks and insurance companies, these two industries pushed for a more segmentalist training system. In contrast, other business actors, most importantly the peak-level association of small- and medium-sized firms (SGV), saw reform as a possible way to expand their influence considerably and gain control over commercial training, however, without allowing commercial training to become more segmentalist. In order to gain control, they therefore joined the critique of the banking and insurance industries. Yet, according to one of our interviewees, the banks were the 'real opinion leaders that developed their own suggestions for commercial training' (CH2).

The opposition against the school dominance of commercial training was strengthened by the economic crisis in the early 1990s, which several business leaders and economists

used to push their neoliberal agenda (Mach, 1999, 2006). The poor condition of the Swiss economy heavily affected the skill formation system and caused an “apprenticeship crisis” (Gonon & Maurer, 2012, p. 140). Between 1985 and 1995, more than 10,000 apprenticeship positions were lost (Strahm, 2008, p. 5), while the number of apprentices decreased by about 20 per cent (Müller & Schweri, 2006, p. 30). As the most popular form of apprenticeship, commercial training was particularly affected.

The apprenticeship crisis put the responsible state agency, the Federal Office for Industry, Craft and Labour (BIGA), later merged into the Federal Office for Professional Education and Technology (BBT), under heavy pressure (CH8; CH17). Facing the accusation that “the BIGA sleeps” (CH5; CH6) as well as an increasing number of initiatives from within the parliament and from business intermediary associations and trade unions, the BIGA decided to launch a far-reaching reform of the Swiss Vocational Training Act (Strahm, 2008). For this, commercial training constituted the forerunner, since in this field, problem pressure and various reform suggestions had already existed for several years (CH6; Renold, Frey, & Balzer, 2002). Therefore, in 1997, the BIGA created a project to develop a reform proposal for commercial training. However, instead of asking *KV Schweiz*, which was originally responsible for commercial training, to develop a reform proposal, the BIGA put the project management in the hands of outside experts from a large private educational institute. This gave business the opportunity to get more involved in the reform process and ensure that its demands for a stronger labour market orientation of commercial training were met (CH10).

The weak position of *KV Schweiz* cannot be explained solely by the fact that the BIGA wanted to align training content with the firms’ skills needs. *KV Schweiz* was also internally weakened. In the years before the reform process had started, it had lost many of its schools — its main source of power—to the cantons (CH5; CH10). In addition, *KV Schweiz* was paralyzed by the conflict between those who argued that the association should focus on strengthening its schools and those who said that it should focus on its role as the representative of commercial employees (CH2; CH10; CH13). Finally, the BIGA had strongly rejected an earlier reform proposal by *KV Schweiz*, which included measures to increase the quality of training but did not touch the overall governance

structure in which *KV Schweiz* remained in charge of commercial training (Bürki, 1995). Consequently, when the reform group was constituted in 1997, *KV Schweiz* had little interest in taking the lead once again, since it was not willing to organize a reform of commercial training that would further undermine its role (CH10).

Summing up, constant criticism by the business community set the reform process in motion. According to it, commercial training was too school-dominated. In particular, the banks and insurance companies wanted to have more control over commercial training in order to ensure it met their skill requirements. They openly threatened to use other ways to recruit their workforce (e.g. universities) or to create a new occupation (e.g. commercial banking) if commercial training did not change (CH3). Their exit threat was credible because these firms offer a large number of apprenticeships and could organize training by themselves. Their exit would have reduced the attractiveness of commercial training considerably, which would not have been in the interest of the small firms that depend on external labour markets for recruitment.

While the primary goal of the banking and insurance industries was to align commercial training to their specific skill needs, thereby leading to segmentalism, the two industries faced a fundamental problem. Since training was primarily in the hands of *KV Schweiz*, they first had to gain control over its governance. They therefore welcomed that the SGV, the peak-level association of small firms, joined the large firms in their criticism of commercial training. The SGV sided with the large firms because it realized that a reform could strengthen its role in this field (CH9). The apprenticeship crisis further strengthened criticism of *KV Schweiz*'s domination of commercial training and emphasized the pivotal role of business in the skill formation system.

The large firms' exit threat also affected the vocational schools since their survival depended on firms offering enough apprenticeships. *KV Schweiz* was weakened by the incremental loss of its schools (which were bought by the cantons) and internal divisions and was thus unable to position itself against business (CH9). Thus, the coalition of large firms, their industry-level associations and the two peak-level employer associations against *KV Schweiz* and its schools ultimately succeeded in imposing their problem definition. They made the responsible state agency accept that commercial training was

simply not sufficiently attractive for firms (Leardini, 2002; OECD, 2009; Trampusch, 2010c).

The 2003 Reform: The Collectivization of Commercial Training

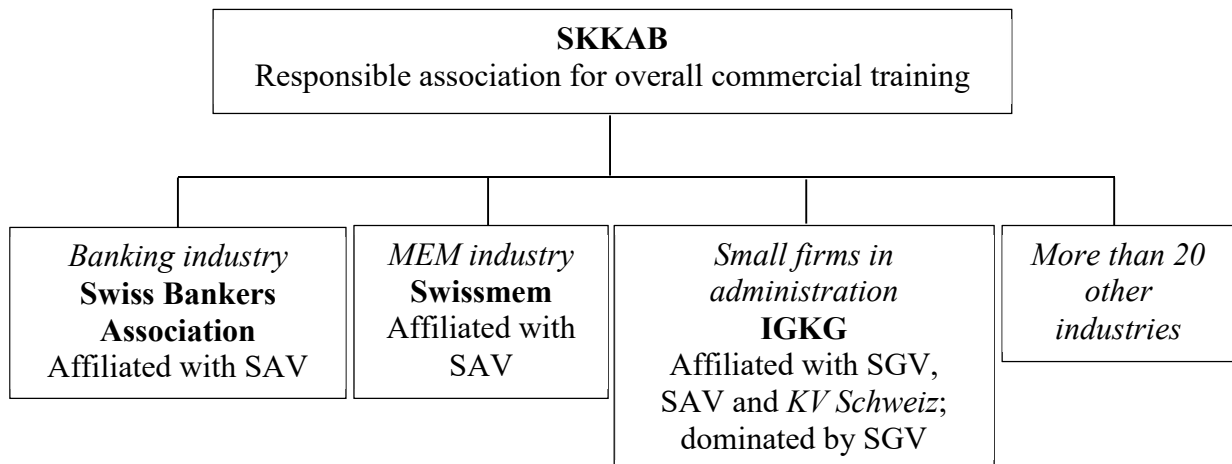
The reform draft that was developed in the project group and agreed by the SGV and the large firms contained three major changes: the development of a new governance mode of commercial training, a stricter regulation of work-based training and the introduction of inter-company courses as part of work-based training.

With regard to the governance structure, a new intermediary association, the SKKAB, was created. It replaced *KV Schweiz* as the responsible body for the curriculum development and the overall steering of the occupation. SKKAB is carried by associations representing the various industries within commercial training (e.g. banking, small firms in administration), which are in turn responsible for the industry-specific part of training (SKKAB, 2016a). Figure 2.1 provides an overview of the new governance structure. Two changes are particularly noteworthy. First, employers dominate most of these industry-level associations. For example, the Swiss Bankers Association, a trade association founded in 1912, represents the banking industry. Within a few years, commercial training thus experienced a complete shift of power from school-dominated to employer-dominated apprenticeships. Second, with the creation of the SKKAB the most important (business) stakeholders meet on a regular basis to discuss the future of commercial training. Hence, through shared responsibilities and regular meetings the SKKAB encourages proponents of segmentalism (e.g. the banking industry) to seek compromises with proponents of more encompassing solutions (e.g. small firms).

For training firms that had not been organized before, mostly small firms operating in the domestic market, the SGV took on a leading role. It saw in the organization of these firms a possibility to increase its influence on commercial training significantly. In addition, representing these firms would provide access to public subsidies and more organizational prestige. As a result, the SGV was instrumental in the creation of a new intermediary association, the IGKG, which represents more than one-third of all

apprenticeships in commercial training and is thus the largest industry-level association in commercial training (SKKAB, 2016b).

FIGURE 2.1: Intermediary associations in Swiss commercial training, 2003



Own illustration

Although the SGV, the SAV (the peak-level association of large firms) and *KV Schweiz* are part of it, the IGKG has always been dominated by the SGV. The SGV provided the first president and the (still active) general manager (CH3; CH13; Hagenbüchle, 2002). Most cantonal sections of the IGKG are today in the hands of the SGV (CH9) and due to the close relationship with its administrative office, the SGV is more influential in the IGKG than any of the other members (CH11; CH12; CH13). Thus, with the creation of the IGKG, the SGV gained control over a large part of commercial training. In addition, through its prominent role in the IGKG, the SGV is strongly involved in the SKKAB and therefore in the overall governance of commercial training. Thus, according to one interviewee, the IGKG is a “power instrument” to the SGV (CH5). In this case, the SGV profited from the large business coalition against *KV Schweiz*. In order to ensure control over commercial training, the various business actors joined forces although originally the BBT had wanted KV Schweiz to organize these small firms (CH6).

In addition to major changes in the governance structure, the work-based part of training was reformed as well. Before the reform, commercial training mainly focused on vocational schools but work-based training remained largely unregulated. As a consequence, the quality of the latter differed widely between firms (CH3; CH4; CH9).

The reform aimed to equalize the training conditions across the country. With the new commercial training regime, firms were now expected to evaluate their apprentices regularly according to predefined standards (Maurer & Pieneck, 2013; Pilz, 2007; Trampusch, 2010c).

Further, the reform established mandatory inter-company courses in commercial training as part of work-based training. Originally an instrument of the crafts occupations, these courses offer additional work-based training in specialized learning centres. Importantly, in the case of commercial training, they are organized by the different industries and their respective associations. The training firms finance them by contributing a fixed amount of money for each apprentice they send. With the establishment of these courses, the industry-level business associations considerably expanded their influence (CH13). Since these associations have an almost monopolistic position in the operation of the courses, the inter-company courses are a profitable endeavor (CH12; CH13).

Within a few years, commercial training thus experienced a complete shift of power from school dominance to employer dominance, initiated by the banking and insurance industries and based on their threat to abandon commercial training. Thereby, a coalition between small and large firms (including their industry- and peak-level intermediary associations) enabled businesses to gain control over commercial training. Paradoxically, however, this large business coalition led to more inter-firm and inter-industry cooperation, thus causing a further collectivization of commercial training. It did not lead to more fragmentation, the large firms' primary goal, because the SGV, the peak-level association of small firms, opposed the segmentalism of commercial training but was needed to wrest control from *KV Schweiz*. As a result, after the reform, the governance of commercial training resembled the governance of vocational education and training in Switzerland's manufacturing and crafts sectors, where business is dominant.

The 2006 Adjustments: Deregulation because of the Reactive Exit of Small Firms

For cost-sensitive small firms, the new regulation of their training activities posed a big problem. Because training had been largely unregulated in these firms before the reform, they lacked the necessary resources and expertise to implement the new regulations (CH9). Therefore, these firms were highly critical and expressed an intention to exit from commercial training (CH6; CH11). At first, the small firms' criticism remained unheard because the apprenticeships they offered were perceived as small in numbers and because the SGV as their main peak-level organization was prominently involved in the reform. This situation changed only when the project group started to implement the reform of commercial training (CH6; CH11). After national media began to pick up on the small firms' criticism in the beginning of 2003 (Cortesi, 2003; Hagenbüchle, 2002, 2003; Schneebeli, 2003), the proponents of the commercial training reform increasingly perceived the opposition of small firms as a threat to the system (CH6). As one interviewee pointed out, 'the reform's success was on a knife's edge' (CH11).

The SGV defended the new commercial training regime fiercely and publicly (CH4; Huber, 2002; Schweizerische Depeschenagentur, 2003). Its position is not surprising, because the small firms' criticism threatened its central role in the new regime. For the first time, business could participate in the curriculum and regulation development of commercial training and through the IGKG the SGV had a significant influence on this. Therefore, the SGV's quest for control over commercial training was in conflict with its ambition to represent the small firms. Hence, it formed a coalition with the large firms and the responsible state agency to ensure that the reform could be implemented in autumn 2003.

Internally, however, the SGV used the small firms' criticism to push for an adaptation of the reform. Already before the new regulation was implemented, a second reform group had been created with the aim of evaluating the reform's success (CH6). This is highly unusual and shows that, although not organized, the small firms' exit was eventually perceived as threatening the system (Hagenbüchle, 2006; P. Traxler, 2005).⁹

⁹ In retrospect, the large majority of small firms did not exit from commercial training. A survey conducted between 2003 and 2006 found that 77 per cent of them employed as many apprentices as they

Therefore, in 2006, simplifications were introduced in commercial training that freed the work-based part of training of some of the most burdensome regulations (BBT, 2008).

The 2012 Reform: Segmentalism Because of the Proactive Exit Threat of Large Firms

The 2003 reform profoundly changed the governance of commercial training. A coalition of small and large firms and their intermediary associations was now in charge of a collective system in which occupational skills were transmitted. However, the large firms, in particular, were still not satisfied with the content of commercial training and their ability to influence it. Specifically, they wanted to increase the proportion of high general skills and their control over school-based training in order to meet the demands of their more complex production processes. As a result, they—once again—openly threatened to establish their own occupation if their requests were not met (CH2; CH3; CH4; Sommerhalder, 2011).

Unlike the 2003 reform, the large firms' renewed demands for reform led to a conflict with the SGV and the small firms. Now that *KV Schweiz* was out of the picture (CH13), the conflicts between small and large firms, in particular about the organization and content of training, could finally break out. For small firms, it was central that commercial training continued to focus on occupational skills and encompass all relevant sectors in order to ensure an attractive commercial training regime with high levels of occupational mobility. The large firms' request that industry-specific courses should also be part of the school-based training would have undermined this principle (CH7). However, the small firms did not want to edge out large and attractive employers from commercial training and therefore needed to appease their preferences.

In addition, there was also a dispute between the large firms and their intermediary associations, on the one hand, and the responsible state agency, BBT, on the other (CH3;

did before the reform, 8 per cent employed more and only 15 per cent of the firms employed fewer. Although more cost-intensive, 70 per cent of the firms rated commercial training's attractiveness as high (BBT, 2008, p. D24f).

CH6). The BBT was strongly opposed to any major reform of commercial training because it did not want to relive the big disputes of 2003 (CH2) and was concerned that a new reform would destroy its “masterpiece” (CH4; CH6). That the various interested parties nevertheless agreed on a major reform shows once again how system-threatening a possible exit from commercial training by (large) firms in these very important industries was perceived.

The resulting 2012 reform was a compromise between small and large firms that contained a clear division of responsibilities. It determined that work-based training today is solely organized along industry lines (as demanded by the large firms). There is no common ground for this part of commercial training anymore (Sommerhalder, 2011). This holds also for the inter-company courses. The various industries within commercial training are autonomous in defining the content and the length of these courses, which results in very heterogeneous inter-company courses (CH9). For example, with 30 course days, the number of days an apprentice in the banking industry spends in an inter-company course considerably exceeds the obligatory 15 days that are prescribed by the respective ordinance (CH7). The banking industry thus uses these courses to meet its need for higher and more industry-specific skills. Consequently, we see a fragmentation of commercial training along industry lines. As several interviewees noted, occupational mobility within commercial training is today more about marketing than reality (CH6; CH13).

On the other hand, the banking industry (this time supported by the machinery, electronics and metal (MEM) industries) could not totally enforce its preferences for a segmented school-based training. As requested by the small firms, a comprehensive school curriculum across all sectors remained in place. The banking and MEM industries were not successful because the credibility of their exit threat was reduced this time. The MEM industry recruits its workforce mainly from the technical occupations (CH3; CH7) and commercial employees are only an “additional benefit” (CH6, own translation) to their main workforce, which is why this industry has no primary interest in training commercial employees. In contrast, the banks could not afford further reputational damage after the 2008 financial crisis and the 2008 bailout of UBS, as a bank

representative indicated in an interview (CH3). In this delicate situation, risking a standoff over commercial training could have been politically costly. Therefore, the large firms did not manage to enforce their request for a differentiated school-based part of training.

Nevertheless, the various industries within commercial training today have considerable leeway to shape the training according to their firms' needs since they are free to decide about the work-based content. The final diploma indicates the sector in which the apprentice was employed and it is unlikely that a person who was trained within an IGKG firm will later be hired by a bank, even in times of skill shortage (CH6; CH13). Thus, the reforms since 2003 have fragmented commercial training, in order to meet the skill demands of mostly large firms. This process is likely to continue. The large firms and their associations have already announced that by 2022, they also want to differentiate school-based training along industry lines, thereby essentially dividing commercial training into over 20 different occupations (CH1; CH3; CH4). Only time will tell whether the small firms and their peak-level association can prevent such segmentation.

2.5 Conclusion

Segmentalism in collective skill formation systems, understood as the increasing focus of the content and governance of training towards the needs of large firms, is not restricted to Germany. Similar developments can be observed in other countries. As our case study has shown, commercial training in Switzerland is now business-dominated and the work-based part of training is entirely organized along industry lines. Compared with the situation before the reforms, occupational mobility within the commercial occupation is severely restricted, while the training content has been adapted to the specific needs of firms, in particular large ones. This is not to say that segmentalism can be observed in all corners of the Swiss training system. Nevertheless, it is revealing that it was possible in such a substantively important and theoretically unlikely case.

Unlike Germany, the secular decline in the training participation of small firms or the decentralization of wage bargaining were not the drivers of segmentalism in Swiss

commercial training. Rather, segmentalism was the result of large firms' interest in defining the content of training and their ability to exit collectively from commercial training if they did not get what they wanted. Yet, the reform was not a straightforward, linear process. Although large firms initiated the reform, based on their ability to exit collectively, they soon faced the need of forming a large coalition with others involved, most notably the peak-level association of small firms. In the first phase of the reform, this large business coalition was necessary to gain control over training and to overcome the resistance of the vocational schools and their association. But the newly gained control came at a price: To get the small firms and their peak-level association on board, the large firms had to accept collectivization, rather than segmentation, of commercial training.

However, once the vocational schools were out of the picture, the conflict dynamics changed. In the second phase of the reform, the large firms reiterated their preference for more segmentalism and — once again — threatened to exit the system, while small firms and their peak-level association morphed from attackers into defenders of the status quo. Although exogenous developments weakened the credibility of the exit threat, the large firms and their associations still managed to enforce a reform that transferred the full responsibility for work-based training to over 20 industry-level intermediary associations.

What do these developments imply for the viability of collective skill formation systems? First, segmentalism is not restricted to Germany. Similar developments can be observed in other prominent collective skill formation systems such as Switzerland. What is more, the tendency towards more employer involvement might not be restricted to collective skill formation systems. Rather segmentalism might take place in non-liberal skill formation regimes in general since major socioeconomic trends such as digitalization and globalization increasingly strengthen the structural power of large firms (see Busemeyer and Thelen (2016) for the case of Sweden). Second, even if small firms continue to train and wage bargaining is not being decentralized, segmentalism is still possible due to the structurally privileged position of large firms. Not only are they important providers of training, they are often able to exit collectively. As a result, large

firms are typically in the position to enforce their training and governance preferences. Finally, as large, export-oriented firms are increasingly facing highly competitive international markets, their willingness to support constraining regulations decreases, as their ability to exit from these constraints increases. Hence, some elements of segmentalism may be unavoidable. However, as our case study demonstrates, these systems may maintain their generally collective nature if their supporters, typically small firms, have the means to force large firms to compromise. Such means include strong intermediary associations and the ability to undermine the credibility of the large firms' exit threat.

Appendix: List of interview partners

- CH1: Independent expert, 26.10.2016, Berne
- CH2: Representative of SKKAB, 15.11.2016, Berne
- CH3: Representative of Swiss Bankers Association, 28.11.2016, Basel
- CH4: Former representative of *Swissmem*, 29.11.2016, Winterthur
- CH5: Former representative of Federal Office for Professional Education and Technology (BBT), 05.12.2016, Berne
- CH6: Representative of Swiss State Secretariat for Education, Research and Innovation (SBFI), 05.12.2016, Berne
- CH7: Researcher at Zurich University of Teacher Education, 07.12.2016, Zurich
- CH8: Former member of parliament, 08.12.2016, telephone interview
- CH9: Representative of Swiss Trade Association (SGV), 09.12.2016, Zurich
- CH10: Former representative of *KV Schweiz*, 12.12.2016, Zug
- CH11: Representative of public administration sector, 15.12.2016, Zurich
- CH12: Representative of Swiss Employers Association (SAV), 15.12.2016, Zurich
- CH13: Representative of a regional section of *KV Schweiz*, 16.12.2016, Schaffhausen
- CH14: Representative of Swiss Trade Association (SGV), 03.08.2017, telephone interview
- CH15: Former representative of Federal Office for Professional Education and Technology (BBT), 16.08.2017, telephone interview
- CH16: Representative of Swiss Employers Association (SAV), 17.08.2017, Zurich
- CH17: Former representative of Federal Office for Professional Education and Technology (BBT), 12.09.2017, Zurich

3 How Agents Change Institutions

Coalitional Dynamics and the Reform of Commercial Training in Switzerland

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Historical institutionalist research has long struggled to come to terms with agency. Yet injecting agency into historical-institutionalist accounts is no easy task. If institutions are structuring agents' actions, while they are simultaneously being structured by these very agents' behavior, the ontological status of institutions remains unclear. Hence, most historical-institutional accounts, at the conceptual level, tend to downplay the role of agency. However, in this way, they also remain incomplete. Following the "coalitional turn" in historical institutionalism, we develop a new account of institutional change and stability that awards a central role to agency. At the heart of our approach is the notion that both stability and change in institutions presuppose constant coalition building by organized entrepreneurial actors. However, for several reasons, such coalition building is complicated, which ultimately leads to institutional stability. In addition, we argue that relevant state agencies actively shape whether the incumbent coalition or the challenger coalition prevails. We illustrate the potential of our actor-centered approach to institutional change by analyzing the reform of commercial training in Switzerland, tracing developments from the beginning of the 1980s until today.

3.1 Introduction

While historical institutionalism gives priority to structure over agency, institutions have never developed and operated without the intervention of interested groups (DiMaggio, 1988). However, despite numerous recent advances in historical institutionalism (Mahoney & Thelen, 2015), the literature has made little progress in developing a “more actor-centered approach” (Fioretos, Falleti, & Sheingate, 2016). This should not come as a surprise. Injecting agency into historical-institutionalist accounts is challenging. The reason is what Peter Hall calls the problem of plasticity: If institutions are structuring agents’ actions, while they are simultaneously being structured by these very agents’ behaviors, the ontological status of institutions remains unclear (Hall, 2016). At the most extreme, institutions may play no causal role at all (Capoccia, 2016). Hence, a more actor-centered approach must ultimately explain both what changes and what stabilizes institutions.

In this paper, we aim to inject more agency into historical institutionalism. Based on recent historical institutionalist scholarship following the “coalitional turn” (Hall & Thelen, 2009), we develop a new account of institutional change and stability that awards a central role to agency. Our main argument is that constant coalition building by organized entrepreneurial actors is necessary for both stability and change in institutions. While social coalitions supporting institutions provide stability, challenger coalitions often seek to undermine institutions. The stability of institutions therefore presupposes constant coalitional work by the incumbent coalition in order to maintain the institution. At the same time, opponents engage in coalitional work in order to build up a powerful challenger coalition. However, for a variety of reasons we discuss below, collective action is complicated for challenger coalitions. In addition, institutional incumbents might be in a situation in which they can actively undermine the challengers’ coalitional work. Finally, we argue that relevant state agencies do not only institutionalize the outcomes of such coalitional dynamics but also actively shape whether incumbents or challengers prevail.

To illustrate the potential of our actor-centered approach to institutional change, we analyze the reform of commercial training in Switzerland, which is by far the most

popular apprenticeship in Switzerland's vocational education and training (VET) system, tracing developments from the beginning of the 1980s until today. During this period, a reform process was set in motion that fundamentally changed the governance of commercial training. While commercial training was originally stabilized by a coalition between vocational schools and commercial employees, business interest associations from diverse economic sectors now dominate its governance. Methodologically, we conduct a systematic process analysis. In order to be able to trace back the decisive steps of the reform process as well as the actors involved in that process, we systematically examined primary resources and conducted twenty-one expert interviews with people who participated in the reform process. The interview data were triangulated with the primary resources and secondary literature as well as with newspaper articles on the reform.

This article is organized as follows. The next section discusses the role of agency in historical institutionalism and develops the implications of a more actor-centered approach to institutional stability and change. Subsequently, we provide a short summary of the reform process before we look at the coalitional dynamics of institutional change. Thereby, we discuss the coalition building by the institutional challengers, the parallel collapse of the incumbent coalition, the resulting institutional change, and, finally, how coalitional dynamics changed once challengers turned into incumbents. A final section concludes.

3.2 Towards a More Actor-Centred Approach

Historical institutionalist research has long struggled to come to terms with agency, because, according to Vivien Schmidt, "the historical institutional framework is all focused on structures and processes, mostly with agent-less institutions following path-dependent logics if not incrementally changing ones" (Schmidt, 2011, p. 9). Clarifying the role of agency in historical-institutionalist accounts is, however, no easy task (Marsh, Akram, & Birkett, 2015). Hall refers to this as the paradox of plasticity: If institutions are structuring agents' actions, while they are simultaneously being structured by these agents' behavior, the ontological status of institutions remains unclear (Hall, 2016).

Hence, most historical-institutional accounts, at the conceptual level, tend to downplay the role of agency (Fioretos et al., 2016).

However, in this way, they remain incomplete (DiMaggio, 1988). Traditional accounts of historical institutionalism emphasize “sticky” institutional constraints and path dependency (Pierson, 2000). Neglecting agency in this way (albeit without denying its existence), these accounts were soon confronted with the challenge of how to explain institutional change (Hall & Taylor, 1996). In most of these accounts, exogenous critical junctures, defined as “relatively short periods of time during which there is a substantially heightened probability that agents’ choices will affect the outcome of interest” (Capoccia & Kelemen, 2007, p. 348), were identified as the moments during which agency mattered. Outside such critical junctures, little room was left to agency.

More recent historical institutionalist accounts understand institutions as being permanently contested (Mahoney & Thelen, 2015). This literature has convincingly demonstrated that institutional change is more common than the critical juncture framework suggests (Streeck & Thelen, 2005). Yet if institutions regularly change, we must reconsider the question of whether institutions still have an independent causal role (Hall, 2016). If we can no longer assume institutions to be stable per definition (as in the “sticky institutions” tradition), we must ask what explains the stability of institutions amid all these changes, because without some sort of stability (i.e., institutions delaying or shaping how social changes translate into some kind of policy), institutions cease to play a causal role in the explanations of social phenomena (Capoccia, 2016).

Institutionalist research must thus explain not only how institutions change but also how they remain stable despite constant change among actors and contexts. In response to this challenge, historical institutionalists have begun to emphasize the role of social coalitions in stabilizing and changing institutions (Hall & Thelen, 2009). According to Hall, “institutions are created by social coalitions composed of actors powerful in the relevant arena and persist only as long as they retain an ample supporting coalition, even if the composition of that coalition changes over time” (Hall, 2016, p. 40). The coalitional perspective stresses that institutions are both supported and challenged by social coalitions. While a coalition of (individual or collective) actors actively maintains

and defends the institution, other social coalitions might oppose and attack it (Fligstein & McAdam, 2012; Lawrence & Suddaby, 2006). In this perspective, institutional stability and change is a function of these social coalitions' activities.

Although social coalitions are an important concept in historical institutionalist research, the literature remains ambiguous with regard to who is part of these coalitions and how to recognize them (Hall & Thelen, 2009). Hall's (2016, p. 40) rather thin description of social coalitions as "composed of actors powerful in the relevant arena" exemplifies this weakness. Researchers in the tradition of sociological institutionalism are more precise in describing actor constellations. According to them, actors are part of several institutional fields (equivalent to Hall's arenas), which are "constructed meso-level social order[s]" (Fligstein & McAdam, 2012, p. 9). Coalitions are built between those that share a common understanding about the rules governing legitimate action in the field (incumbents), and between those that are marginalized and intend to challenge these rules. Importantly, sociologists assume that actors within the field implicitly know to which coalition they belong. The identification of these coalitions is thus primarily an empirical matter.

The coalitional perspective resolves the paradox of plasticity because it emphasizes the difficulty of building a coalition that is sufficiently strong to enforce institutional change. As Hall observes, "discontent with existing institutions has to reach certain levels" because "actors have to be convinced they should abandon procedures with which they are familiar to enter uncertain territory" (Hall, 2016, p. 40). Collective action is complicated for challenger coalitions, since actors might want to free-ride on other actors' contributions, someone has to take the lead in order to organize, and actors need to be convinced that they can contribute to changing the institutional status quo (Wijen & Ansari, 2007, p. 1080). In addition, institutional incumbents might actively try to undermine the challengers' coalitional work, for example, through their agenda-setting power (Capoccia, 2016). Thus, while the coalitional perspective adopts a considerably more dynamic and actor-centered approach, it still emphasizes institutional stability over change, because the creation of sufficiently strong challenger coalitions is difficult.

Yet there is a striking omission in this recent coalitional turn in historical institutionalist research. While both stability and change in institutions presuppose constant coalition building, the existence of social coalitions is typically not further problematized. But coalitions do not come out of nowhere. As the rich literature on collective action problems has repeatedly emphasized, coalition building is difficult (Olson, 1965). The same can be said about the maintenance of coalitions (Capoccia, 2016; Lawrence & Suddaby, 2006). Put differently, the coalitional perspective in historical institutionalism still lacks a micro-foundation (Emmenegger, 2018).

We argue that one has to consider at least three important issues when analyzing the micro-foundations of institutional change. First, analyses of institutional change must problematize the questions of who engages in coalition building and how collective action problems are overcome. For this, “organized actors with sufficient resources” that see in institutions “an opportunity to realize interests that they value highly” (what DiMaggio (1988, p. 14) famously called institutional entrepreneurs) and their strategies must be identified, because they are the agents who do the coalitional work (Fligstein & McAdam, 2012; Lawrence & Suddaby, 2006). In any case, the existence of social coalitions cannot simply be assumed. Rather, coalition building must be part of the analysis.

In order to organize coalitions, entrepreneurial actors, who can be individual or collective, need to have access to material and social resources (DiMaggio, 1988; Farrell & Newman, 2015). In this context, their position in actor networks is also an important resource (Culpepper, 2005; Winecoff, 2015). Business often has an advantage compared to other actors, not only because it possesses more financial resources but also because it is often in a position of structural power (Culpepper, 2015; Lindblom, 1977). In addition, these actors must be socially skilled, meaning that they must “possess a highly developed cognitive capacity for reading people and environments, framing lines of actions, and mobilizing people in the service of broader conceptions of the world and of themselves” (Fligstein & McAdam, 2012, p. 17). Among others, social skills are needed when these actors aim at building strategic alliances with others that share only some interests but not all. In this process, entrepreneurial actors can rely on a large number of

strategies for coalition building.¹⁰ Thereby, collective entrepreneurial actors typically have advantages when forming a coalition compared to individual ones—both with regard to the access to resources and with regard to the successful framing of decisive events. Finally, institutional and political opportunities such as changes in the political environment, the field’s degree of institutionalization, or exogenous shocks influence the likelihood of coalition building (Blyth, 2001; Capoccia, 2016; Meyer, 2004). For instance, we should expect more agency in (temporarily) unsettled or non-settled institutional fields.

Second, analyses must consider to what extent the incumbent coalition is able to stabilize and maintain the relevant institution. Challenger coalitions will have difficulties influencing institutions if they face a strong incumbent coalition and vice versa. Recent contributions on institutional change have emphasized how negative (rather than positive) feedback effects may lead to situations in which the normal functioning of institutions undermines the institution’s external preconditions (Jacobs & Weaver, 2015; Streeck & Thelen, 2005). Similarly, internal divisions might weaken the incumbent coalition. In these cases of institutional exhaustion, incumbents have shown little skill in maintaining an institution, which is therefore vulnerable to attacks by challenger coalitions. In any case, the stability of institutions (and the coalitions supporting it) cannot simply be assumed.

Finally, analyses of institutional change must examine how the emerging (challenger) coalitions try to win the relevant state agencies’ support, which is often necessary to be able to replace the incumbent coalition. At the same time, the relationship between the incumbent coalition and the relevant state agencies must be explored. As long as the incumbent coalition enjoys the relevant state agencies’ support, it is in an excellent position to contain the challenger coalition. However, coalitional work becomes much harder once the agencies withdraw their political support.

Kathleen Thelen finds that “the kinds of settlements that were possible in individual countries were heavily mediated by state action (or inaction), which frequently tipped

¹⁰ See, for instance, the social movement literature on mobilization strategies (McAdam, 1996).

the balance in ways that either facilitated coordination [...], or aggravated the conflicts of interest” (Thelen, 2004, p. 20). Thereby, the state does not only institutionalize the outcomes of coalitional dynamics (Palier & Thelen, 2010), but also actively shapes whether incumbents or challengers will prevail. Depending on the policy issues, different dynamics can explain why the state matters for the interaction between social coalitions. On the one hand, partisan politics might influence the support of certain social coalitions by state actors (Busemeyer, 2015; Iversen & Stephens, 2008). For instance, as the political composition of governments changes, so do state actors’ policy preferences.

On the other hand, state actors can also be primarily concerned about the effectiveness of policies. This is often the case when the issue is the responsibility of state agencies at the bureaucratic level and is not discussed in parliament. States agencies often have a strong interest in managing the domain for which they are responsible in an effective way because either the agencies care about these policies’ effectiveness (as professionals) or they need to legitimize their actions vis-à-vis higher levels of government.¹¹ These cases are often characterized by a status quo bias because the involved state actors are more likely to support the (successful) incumbent coalition. However, the likelihood of institutional change increases when the saliency of an issue rises, because public attention might push state actors into action (Culpepper, 2011). Hence, even if the main political dynamic unfolds as a competition between social coalitions, the relevant state agencies’ unique position implies that they typically play an important role in the analyses of institutional change.

In sum, we argue that analyses of institutional change must consider the interaction between the coalition-building activities of institutional challengers, the coalitional work of the incumbents, and the role of the relevant state agencies in favoring stability or change. Focusing on the interaction of these three factors allows for a robust role for agency in historical institutionalist accounts.

¹¹ We thank an anonymous reviewer for suggesting this formulation.

3.3 The Reform of Commercial Training in Switzerland

We demonstrate the usefulness of our actor-centered approach to institutional stability and change by examining the reform of commercial training in Switzerland, tracing developments from the mid-1980s until today. Collective skill formation systems are dual training systems in which firms and intermediary associations play a central role in governance and financing (Busemeyer & Trampusch, 2012a). As in other policy fields in Switzerland (David, Ginalski, Mach, & Rebmann, 2009), the main intermediary associations involved in training are business associations, although commercial training used to be an important exception to this rule, as we show below.

Various aspects make the reform of commercial training in Switzerland an interesting case for analyzing the relationship between coalitional dynamics and institutional change. First, collective skill formation systems have figured prominently in recent work on institutional stability and change, in particular in the literatures on the coalitional foundations of institutions and on gradual institutional change (Hall & Thelen, 2009; Streeck & Kenworthy, 2005; Thelen, 2004, 2014). Switzerland is a prototypical collective skill formation system, not least because it is the country with the highest share of youth entering dual apprenticeships. About two thirds of the students in upper secondary education are enrolled in Swiss VET programs (SBFI, 2016, p. 11). Commercial training is by far the most popular apprenticeship in Switzerland (SBFI, 2016, p. 14). The training prepares for clerk positions in diverse fields, such as customer services, human resources, and marketing, in a wide range of industries, for example, in banks, logistics companies, and the public sector. Consequently, there is a large number of very heterogeneous actors (with regard to both size as well as economic sectors) involved in the governance of commercial training. It therefore seems justified to explore our arguments about coalition building in explaining institutional stability and change in this context.

Second, the role of the state in the regulation of training occupations in Switzerland is not a political one that reflects power struggles. The Swiss VET system is relatively centralized since it is mostly governed by federal regulations (Gonon & Maurer, 2012; Trampusch, 2010c). Without the approval of the federal state, private actors cannot

enforce any changes. In this process, a state agency is responsible for approving the respective changes. The “state” therefore needs to be understood as a bureaucratic institution whose main interest is a well-functioning, but also stable skill formation system. Hence, institutional change is less likely than in situations where the state’s role is primarily political. Nevertheless, we can observe a process of institutional change, in which the state played a central part in determining the role of various social coalitions in Swiss commercial training.

Third, Swiss commercial training represents a settled institutional field with a long tradition. Historically, the Swiss Association of Commercial Employees (*KV Schweiz*) – a hybrid organization that owns many of the schools providing commercial training, while simultaneously representing the interests of commercial employees – was responsible for the governance of commercial training in schools (Späni, 2011; Winkler, 1973). No external conditions, being it economic, social, or political, would have required transformative institutional change. Nevertheless, we can observe transformative institutional change, which is—as we argue—the result of coalition-building activities by resourceful entrepreneurial actors and their interaction with the incumbent coalition, as well as the responsible state agencies.

Following pressure from several business actors, the coalition between vocational schools and *KV Schweiz* lost its power. Since a major reform in 2003, business interest associations from diverse economic sectors are the most important actors in commercial training, as three major changes reveal (Emmenegger & Seitzl, 2019a). First, since the reform, firm-based training is regulated. Business intermediary associations (and not the state or the schools) define the training content in the firms. Second, the reform introduced inter-company courses besides firm-based and school-based learning, which are also (typically) organized by business intermediary associations. Third, during the reform process a new governance structure was established. A new association, the Swiss Conference for Commercial Training and Examination (SKKAB), replaced *KV Schweiz* as the responsible body for curriculum development and the overall governance of the occupation. SKKAB is carried mostly by business associations representing the

various industries within commercial training, which are in turn responsible for the industry-specific part of training (SKKAB, 2016b).

Yet this far-reaching reform did not stop the debate over the organization of commercial training. Shortly after the introduction of the 2003 reform, within business-conflicts over training content and skill specificity restarted. Mostly the banking industry and firms from the machinery, electronics, and metal (MEM) sector asked for industry-specific training also in the schools (CH2; CH3). These large and well-organized sectors even threatened to exit from dual training and train their workforce by other means if their demands were not met (Sommerhalder, 2011). Yet, the large firms faced strong opposition from the Swiss Trade Association (SGV), which represents the small and medium-size firms (CH6; CH9). The differing views resulted in a big compromise with the 2012 reform. No firm-specific elements were introduced into school-based training. However, firm-based training is today completely organized along industry lines (Emmenegger & Seitzl, 2019a).

Why did Swiss commercial training experience transformative institutional change in 2003 (Trampusch, 2010c) but only incremental change in 2012? Which actors took the position of institutional entrepreneurs and pushed the reforms in their decisive directions? In order to answer these questions, we conduct a process-tracing analysis, which is the “systematic examination of diagnostic evidence selected and analyzed in light of research questions and hypotheses posed by the investigator” (Collier, 2011). In a first step, we carefully analyzed government documents, position papers of the involved actors, and secondary literature. In a second step, we conducted twenty-one semi-structured interviews with people who were actively participating in the reform process. The interviewees are (former) representatives of business intermediary associations, the responsible federal state agencies, the project management group, *KV Schweiz*, and training firms. In addition, we also talked to an independent expert, a researcher, and a former member of parliament involved in the reforms. The interviews were conducted in 2016 and 2017 in various Swiss cities. We triangulated the interview data with the above-mentioned primary and secondary resources as well as with newspaper articles on the reform processes. We started our analysis in the 1980s

because, already then, coalition-building activities took place that had a major impact on the reform agenda.

To preview the findings of our empirical analysis, we find that the reforms of commercial training were the result of four factors that interacted with each other in interesting ways. First, individual business actors, most importantly in the banking and insurance industries, engaged in active coalition building early on. They convinced the powerful SGV, representing small firms, to join their criticism. Hence, a strategic alliance of powerful business actors was formed and continuously lobbied the Federal Office for Industry, Gewerbe and Labor (BIGA, later renamed into BBT), the responsible federal state agency. Second, in contrast to business, the institutional incumbents were unable to engage in coalitional work because of internal problems (which we discuss, in detail, below). The weakness of the incumbent coalition further strengthened the influence of the business challengers. Third, an economic crisis in the 1990s presented the challenger coalition with a political opportunity to frame the discourse on commercial training according to their interests. Seeing their hand forced by the crisis discourse, BIGA eventually experienced a belief shift and appointed business actors to draft a major reform of commercial training, which was enacted in 2003. Finally, after dormant within-business conflicts about training content had re-emerged in the aftermath of the 2003 reform, the responsible Federal Office for Professional Education and Technology (BBT, earlier BIGA) contributed once again to the institutions' stabilization. In addition, the new governance structure, established in 2003, contributed to enforcing cooperation between the conflict parties.

3.4 Coalitional Dynamics and Institutional Change

In the following, we analyze the coalitional dynamics driving the reform of commercial training since the 1980s until today. We first look at how business was able to create a challenger coalition. We then turn to the question of why the incumbent coalition was unable to defend the institutional status quo. The changing of the guards in commercial training is the topic of the third section, while the last section discusses how coalitional dynamics changed once challengers had turned into incumbents.

Business Challengers: Coalition Building

For a long time, the dominance of the schools and their association in commercial training was seen as self-evident and business did not question it. However, in the late 1970s–early 1980s, various business actors, mainly from the banking and the insurance industries, started to express concerns about the governance of commercial training (CH16; CH19). Facing increasing international competition because of globalization and digitalization (especially capital market deregulation since the late 1970s), these industries were in need of a highly trained workforce and feared that commercial training would not meet this demand (CH21; Kubli, 1984, 1989). They therefore wanted to obtain more influence and strengthen the work-based part of training over which they could exercise considerably more control. In this process, other — more typical — training occupations, in which business intermediary associations were responsible for the governance of training (so-called “BIGA-Berufe”¹²), served as role models (CH8; Strahm, 2008). Concretely, the criticism focused on the fact that the dual structure of commercial training—taking place in occupational schools and training firms—was not mirrored in the final examination since the firm-based part of training was not considered (CH10).

Banks and insurances are well-organized industries in which commercial employees constitute the main workforce (CH11; CH16; CH18). Thus, both industries are highly interested in the organization and content of commercial training. At the same time, both industries have a credible exit option at hand, because they are sufficiently large and have the necessary resources to organize training by themselves. As a result, their criticism of commercial training has considerable weight (Busemeyer, 2012; Emmenegger & Seitzl, 2019a). However, at the beginning, only few firms in these industries were highly engaged in criticizing the institutional status quo. As a representative of a large Swiss bank explained in the interview, these firms faced collective action problems: “The employers made the biggest mistake: They did not

¹² Although the BIGA was also the responsible state agency for commercial training, this occupation was not considered a “BIGA-Beruf” (BIGA occupation), because its governance structure did not correspond to the more traditional, employer-dominated occupations.

participate enough in the discussion of these questions” (CH19, own translation). For example, while the *Schweizerische Bankgesellschaft* (now UBS) was one of the major actors demanding a reform, its counterpart, the *Schweizerische Kreditanstalt* (now Crédit Suisse) had already started to train their future employees in their own training center, withdrawing from the collective system (CH19; CH20). Thus, the firms that pushed for a reform of commercial training first had to create a coalition that would allow them to influence the discussion.

A first milestone for the coalition-building activities of business actors were minor changes in the governance structure introduced by a small (and seemingly insignificant) reform in 1987. In this reform, a new examination subject was introduced that relied on lessons learned in the firms (CH10). Hence, firm-based training was finally recognized (although still not on equal footing with school-based training). Yet the reform was not primarily a success for the involved business actors because it included some firm-based training in the final examinations. More importantly, the reform also helped business to build up a challenger coalition against the school-dominated incumbent coalition (CH9).

Coalition building was facilitated because the various industry associations had to develop industry-specific examination content. This task was no problem for the well-organized industries (CH16). However, a large number of training firms was not organized. For these typically small firms, the so-called PAK commission was established to develop the new curriculum (CH14). Well-organized industries were asked to support other industries in this process. Therefore, besides the SGV, the peak-level association of small firms, also a representative from the *Schweizerische Bankgesellschaft* was part of this commission (CH9), creating a natural forum for discussion and coalition building.

This emerging coalition between the SGV and some large firms is unusual. The SGV represents firms that have very different training preferences than the banking or insurance industries — not least because small firms have fewer resources for training investments. Nevertheless, the SGV participated in the PAK commission because it saw a possibility to increase its influence in commercial training and gain organizational prestige (CH5; CH6). From other training occupations (the so-called “BIGA-Berufe”),

the SGV was used to business playing a key role in the governance of training. It therefore saw an opportunity to gain in organizational prestige by taking over the political lead in organizing small firms on aspects of commercial training (CH16). The coalition formed between large firms and the SGV is thus the result of pragmatic reasoning of these two actors that have different skill needs but share an interest in gaining control over commercial training.

The establishment of the PAK commission was the starting point for a close cooperation between the SGV and the large firms on issues of commercial training. Together, they could form a more powerful coalition against the status quo and formulated their criticism towards the responsible federal state agency BIGA and *KV Schweiz*, which was increasingly effective (CH15). For example, several reform proposals of business actors were formulated that should have convinced BIGA to induce institutional change (e.g. *Schweizerische Bankiervereinigung*, 1995). However, BIGA repeatedly rejected the business criticism until a major economic crisis forced its hand (more on this later).

To conclude, coalition-building activities of powerful business actors were crucial for setting up a coalition challenging the status quo as well as for designing a reform for Swiss commercial training that would considerably increase their influence. Thereby, the most important actors, i.e., the entrepreneurial actors, for forming a challenger coalition were firms in the banking and insurance industries, for example, the *Schweizerische Bankgesellschaft*, that were highly affected by international developments and digitalization. At the same time, these actors could rely on structural power because they could credibly threaten to exit from collective training. The example of the *Schweizerische Kreditanstalt* shows that this option was in fact realized. Knowing that the school dominance in commercial training was an exception in the otherwise business dominated Swiss VET system, they convinced the SGV to join their criticism of the schools' dominance in commercial training. Together, they could enforce first changes in 1987 and increase business influence in commercial training.

KV Schweiz: Coalition Collapse

While business actors successfully created a challenger coalition, the incumbents of commercial training, namely *KV Schweiz* and the commercial schools, lost their influence during the reform process. Even more remarkable, it seems that the incumbent coalition remained quite passive during the whole reform process. After BIGA support for school-dominated commercial training broke away, *KV Schweiz* vanished from the discussions on the future of the occupation — that is, an occupation it had dominated for more than one hundred years.

The central role of schools and *KV Schweiz* in commercial training has developed historically, when commercial employees started to coordinate themselves in order to improve their occupational qualifications in the nineteenth century (Winkler, 1973). With the establishment of a federal VET law in 1930, this incumbent coalition stayed in place and has been supported by the various responsible state agencies since then. Until the end of the 1980s, *KV Schweiz* and its vocational schools were the unchallenged incumbents of commercial training (Späni, 2011; Winkler, 1973). Even though the reform in 1987 gave business the opportunity to organize, *KV Schweiz* agreed to it because the involvement of firms should ensure the high quality of training (CH10). Thus, *KV Schweiz* supported the idea of dual training and recognized the need for reform.

On the other hand, the support of BIGA for the incumbent *KV Schweiz* did not stop with the 1987 reform. Quite the contrary, although there were a large number of reform proposals — an interview partner talked of “a stack of about 50 proposals on the desk of the responsible BIGA staff” (CH2) — BIGA blocked every reform proposal that came up during this period (CH10; CH19). As one of our interview partners said: “There was a lot of understanding from the side of BIGA for the old regulations. This was never questioned. Implicitly, *KV Schweiz* always had the leader status. This had developed historically” (CH16).

Despite the continued support by BIGA, *KV Schweiz* responded to the increasing pressure by initiating a study on the future of commercial training in the early 1990s. It recommended several measures in order to bring the school-based and the firm-based

part of commercial training closer together (Bürki, 1995). Yet BIGA clearly rejected the reform proposal (CH2). Our interview partners offered two reasons for this rejection. Some argued that BIGA was not willing to implement any reform, as the rejection of other reform suggestions (e.g. Dubs, 1989; Widmer-Portaluri, 1994) in the same period shows (CH10; CH19). Others, in particular a former representative of BIGA, argued that BIGA rejected the reform proposal of *KV Schweiz* because the suggestions included more obligations for the training firms without changing the governance structure in which *KV Schweiz* still had the lead (CH5). This view suggests that for BIGA, *KV Schweiz* did not respond enough to the increased pressure of the business coalition, which indicates that the challengers' lobbying already had some success in shaping the relevant state agency's position.

Be that as it may, the harsh rejection of the study resulted in an irreversible gap between BIGA and *KV Schweiz* (CH11; CH12). As a result, *KV Schweiz* decided not to engage in the reform discussions anymore, also because they expected that, eventually, BIGA would come back to *KV Schweiz* as its natural partner for commercial training (CH10; CH11). As we show later, in contrast to the *KV Schweiz*'s expectations, BIGA did not return to *KV Schweiz* but rather asked the business side to develop a reform after the "apprenticeship crisis" hit Switzerland. Hence, by entirely trusting on its seemingly indispensable role as the organizer of commercial training (i.e., as incumbent), the *KV Schweiz* ultimately planted the seeds of its own displacement.

However, with this decision of BIGA the future role of *KV Schweiz* was not determined yet. *KV Schweiz* still had the possibility to influence the reform discussion according to its interests. At one point, BIGA even asked *KV Schweiz* to organize and represent the small firms in the newly created SKKAB (CH6; CH17). However, *KV Schweiz* declined this invitation because it was internally divided and not able to organize itself.

There were several reasons for its internal problems. First, there were internal disputes about the actual role of the association. The dispute centered around the question whether *KV Schweiz* should concentrate on its role as the representative of the commercial employees (and thus be a trade union) or should focus on organizing the schools (CH13; CH17; CH20). Second, *KV Schweiz* was weakened: Since the 1990s,

many of the vocational schools did not belong anymore to *KV Schweiz* but were taken over by the cantons (CH5; CH10).¹³ Finally, in contrast to their association, the vocational schools that still belonged to *KV Schweiz* were quite sympathetic to giving business more influence (CH5). After all, their success as vocational schools depended on firms training apprentices, which (some) firms threatened to stop if they did not gain more control over the governance of commercial training.

Summing up, the central role of *KV Schweiz* in commercial training was for a long time related to historical tradition and state recognition as the incumbent organization. When these sources of stability broke away, the association was no longer able to counter the powerful business criticism. Consequently, *KV Schweiz* played a negligible role in the reform process and lost its position as the incumbent of commercial training formally in 2003, when the reform was implemented. Today, *KV Schweiz* still organizes and represents commercial employees, owns several vocational schools, and is highly engaged in higher VET. In initial VET, however, *KV Schweiz* has been marginalized.

The Changing of the Guards

In the early 1990s, Switzerland was hit by a serious economic crisis. As a consequence, youth unemployment rose and in the mid-1990s an ‘apprenticeship crisis’ broke out (Gonon & Maurer, 2012). Between 1985 and 1995 more than 10,000 apprenticeship positions were lost, while the number of apprentices decreased by around 20 percent (Müller & Schweri, 2006, p. 60; Strahm, 2008). The lack of apprenticeships entered the public debate in 1996, when media reports announced that around 30 percent of school leavers could not find an apprenticeship position (APS, 1996). BIGA rejected these accusations, arguing that there was a lack of apprenticeship positions only in certain, very popular occupations (such as commercial training) and that school leavers should be more flexible when looking for apprenticeship positions (APS, 2006). However, the public pressure on BIGA continued (CH15). Demands for more active intervention by BIGA were heard and it was accused of “oversleeping” the necessary reforms (CH5).

¹³ Cantons were buying these schools from *KV Schweiz*, which implies that *KV Schweiz* had a full ‘war chest’. Yet, unsure about its goals as an organization, *KV Schweiz* never deployed these resources to engage in the conflict over the control over commercial training.

Under the impression of the apprenticeship crisis, VET policies regained in importance in the political and public debates in Switzerland (CH8; CH15; CH16; Strahm, 2008).

The apprenticeship crisis presented the challenger coalition with a political opportunity to influence policymaking according to their goals because BIGA was under pressure to show that it actively responded to the crisis (CH5). The earlier business demands for a reform of commercial training allowed BIGA to demonstrate activity. However, while the crisis triggered a large debate on VET in general, all the major political actors' attention was focused on the parallel reform of the federal VET law (CH8). In addition, *KV Schweiz*, as the institutional incumbent, was too weak to mobilize its allies amongst the political left. The business coalition thus managed to keep the debate on the reform of commercial training largely outside of the party politics arena (CH17).¹⁴ Hence, in the case of commercial training, the apprenticeship crisis had the paradoxical effect of prodding the relevant state agency into action, but it did not attract much attention of political parties and the media, or involve any employee organizations other than *KV Schweiz*, which already indicates the incumbents' weakness (CH5; CH20).¹⁵

Organized business actors engaged in commercial training had prepared this reform process by skillfully lobbying BIGA, thereby setting up a framing of the situation in commercial training that would see more business control as beneficial for high quality training while similarly meeting the demands of the labor market. The constant lobbying activities of the challenger coalition but also their threat to exit from collective training ultimately convinced BIGA to finally reform commercial training and increase business influence. Hence, instead of reforming the training in close cooperation with *KV Schweiz*, it decided to give in to the demands of business and increase the influence of firms and their intermediary associations considerably. For BIGA, a reform of commercial training was relevant and necessary, because it feared the withdrawal of

¹⁴ For a discussion on the relationship between business power and political salience, see Culpepper (2011).

¹⁵ Among others, this is visible in the composition of the reform group, which contained several representatives of business associations, including the Swiss Banking Association and the Swiss Trade Association, but no employee organizations other than the weakened and lackadaisical *KV Schweiz* (Renold, Nenninger, Frey, & Balzer, 2004).

firms offering apprenticeships in this training occupation, which is by far the largest in Switzerland. This is why it reacted to the constant criticism and reform suggestions by the business coalition.

The goal of the reform, indicated in the state agency's contract with the project management team, showed the belief shift the BIGA had experienced. Commercial training was to become more business driven: "The main focus of the contract with the project management team was to include everyone. (...) We had to tell the business associations about the goal of the reform: Business should gain as much weight as the schools" (CH20, own translation). As mentioned above, while the crisis prodded the state agency into action, the reform's salience in the party politics arena remained rather low. The reform therefore had only the attention of experts in the field. This lack of political attention further increased the already powerful position of firms and business intermediary associations (Culpepper, 2011). As a result, control over commercial training eventually changed from *KV Schweiz* to organized business, yet few people outside the reform group took notice.

Thus, the apprenticeship crisis highlighted the problems in the Swiss VET system and forced BIGA's hand. Several business actors, which had already invested considerable resources into the creation of a strong and well-organized challenger coalition, immediately seized the opportunity and exercised pressure on BIGA as the responsible state agency. On the other side of the political spectrum, there was no actor who seriously challenged the business interpretation of the crisis, namely that youth unemployment was the result of a de-alignment of training content from labor market needs. The only employee organization involved was *KV Schweiz* but it was internally weakened and not able, or willing, to take part of the reform discussions. These two factors explain why BIGA adopted the business actors' interpretation of the reasons for the apprenticeship crisis and agreed to the reform of commercial training. Instead of *KV Schweiz*, organized business now became the incumbent of commercial training. A coalition of small and large firms and their associations, aiming at increasing their influence over commercial training, thus promoted their ideas for the future of

commercial training. These were taken up by the responsible federal state agency in a situation of high problem pressure and resulted in transformative institutional change.

Renewed Conflict and Reconciliation

The business coalition that initiated the transformative reform of commercial training was rather unusual because its members only partly shared similar preferences. While all business actors were interested in gaining control over training (i.e., wresting control away from *KV Schweiz*), there still exist different preferences with regard to training content. Large firms, competing on international markets, are in need of highly skilled workers and aim for more firm control over training in order to make sure that these needs are met (Culpepper, 2007; Thelen & Busemeyer, 2012). In contrast, small firms have fewer resources available, tend to recruit from the external labor market, and therefore profit from a strong collective training system (Culpepper, 2007; Culpepper & Thelen, 2008). In the case of commercial training reform, the resource restrictions of these firms posed a problem when it came to integrate sector-specific elements into training since this content was to be developed by the sectors themselves. One member of the project management team indicated in the interview: “This [curriculum development] was the first obstacle. The sectors had never developed a curriculum. This had always been the task of the schools” (CH20, own translation).

Consequently, at the end of the reform process in December 2002, small firms started to criticize the new reform, arguing that they would stop to train apprentices if the regulations were not relaxed (Cortesi, 2003; Hagenbüchle, 2002; Schneebeili, 2003). In this situation, the coalition-building capabilities of the SGV were crucial. While publicly defending the reform project, arguing that the reform would increase business influence in commercial training (CH4; SDA, 2003), it internally pushed for a relaxation of the new regulations in order to support its member firms. Therefore, already before the reform was implemented, a project group formed that was to evaluate the reform’s success (CH6). The resulting relaxations were adopted in 2006 (BBT, 2008).

The conflicts between the various business actors were not resolved with the 2006 adaptation. The discussions centered mainly on the training content in vocational

schools. Because of their higher skill needs, the large firms in the banking and MEM industry asked for additional and industry-specific classes in school-based training. They even threatened to exit from commercial training and to establish their own training occupation if their demands were not met (Sommerhalder, 2011). Being more cost-sensitive and having lower skill needs, the small firms rejected these claims (CH7). For them, maintaining an encompassing training regime at low administrative costs was key.

Two factors dampened the conflict between the various business actors. On the one hand, the state in the form of the responsible BBT (previously BIGA) acted once again as a stabilizing force supporting the institutional status quo. BBT used its decision-making power to reject any industry-specific content in school-based training, thereby enforcing a compromise between small and large firms and their associations (CH6; CH11). On the other hand, the new governance structure of commercial training itself compelled the two conflict parties to compromise. The newly established SKKAB represents the collective nature of commercial training because its members are the different industries that take part in commercial training. Most notably, regulations stipulate that any changes in training content must first be discussed in SKKAB, which forces advocates of change to face the defenders of the status quo, but also gives the latter the opportunity to suggest compromises (CH1).

The 2012 reform of commercial training reflects this compromise. Since 2012, the sectoral business intermediary associations have a lot of leeway to design training content in the firms and the inter-company courses according to their needs. There is thus no common ground for the non-school-based part of commercial training anymore (Emmenegger & Seitzl, 2019a). However, the training content in the vocational schools is still similar across all sectors. Yet, although this new governance structure is supposed to induce stability (by keeping the coalition together), it is unclear whether it will be able to stop the fragmentation process. Several influential business actors, most importantly the banking industry, have already announced that more leeway is needed to design school-based training according to their industry- and firm-specific needs

(CH1; CH3; CH4). Only time will tell if the supporters of the institutional status quo can prevent such developments.

In sum, after the common adversary *KV Schweiz* had been discarded and the former challenger coalition turned into the incumbent of commercial training, conflicts about different preferences between small and large firms broke out. The business coalition, formed despite different skill preferences in order to gain control over training, was put into question. In this situation, the state, represented by BBT, took on, once again, a stabilizing role and enforced a compromise between the diverse business actors. However, this compromise was also enabled by the new organization of commercial training itself. SKKAB, established in 2003, forces the different actors to coordinate themselves and find a consensus.

3.5 Conclusion

The processes that resulted in institutional change in Swiss commercial training can be separated into three different phases. The first phase, until 1995, was characterized by institutional stability and, at the same time, the coalition-building activities of business. During this time, well-organized and large firms in the banking and insurance industries that relied on structural power started to convince other business actors, most importantly the peak-level association of small firms, to join their criticism. Together, they formed a powerful challenger coalition and lobbied the relevant state agency, BIGA, for a reform. At the same time, this phase is also characterized by the increasing struggles of *KV Schweiz* to maintain its incumbent coalition. The incumbents' weakness paved the way for the challenger coalition to promote their ideas about a reform of commercial training. This shows that coalitional work is also needed in order to sustain the institutional status quo.

In the second phase, between 1996 and 2003, the major reform of commercial training was enacted and brought about transformative institutional change. The reform process was driven by the business coalition that used the apprenticeship crisis as a political opportunity to force BIGA's hand. They skillfully managed to frame the crisis on the apprenticeship market as the result of insufficient business influence and convinced

BIGA that a change of the governance of commercial training was needed. Because of its final decision-making power, BIGA could act as a gatekeeper in this process. While it secured the institutional status quo for a long time by supporting the influential role of *KV Schweiz*, it also accelerated the decline of *KV Schweiz* by enabling transformative institutional change after the apprenticeship crisis had forced its hand.

Finally, in the third phase, from 2004 to 2012, commercial training experienced gradual institutional change due to new coalitional dynamics. After the common adversary, *KV Schweiz*, had finally been discarded and business had turned into the institutional incumbent, dormant conflicts within business over training content and occupational mobility broke out. Nevertheless, the new system turned out to be relatively stable because the relevant state agency maintained a preference for institutional stability and because its new governance structure creates incentives for compromising.

This case study therefore demonstrates that agency is not only relevant during critical junctures or moments of institutional change. Rather, it shows that agency characterizes all situations of institutional stability and change. Thereby, the agents' main role is to be found in coalitional work. Agency is needed to create challenger coalitions, but agency is also necessary to maintain incumbent coalitions. Finally, agency plays a key role in maintaining or gaining the relevant state agency's support, which is often important because state agencies stabilize institutions by supporting the incumbent coalition or facilitate institutional change by withdrawing support from the incumbents. In the case of Swiss commercial training, we have shown how these dynamics of coalition building and coalition collapse are sources of both institutional stability and change. In addition, we have demonstrated how such coalitional dynamics can result in transformative change (the 2003 reform) or gradual change (the 2012 reform).

The actor-centered approach to institutional change presented in these pages contributes to injecting agency into historical institutionalism. Yet clearly, more work needs to be done. We would like to emphasize two areas for future research. Empirically, more evidence is needed to demonstrate the actors' coalitional work. While we believe that our interpretation of coalition-building activities is plausible, future research might be able to analyze coalition-building activities "on the ground." Theoretically, research

should continue to develop further portable propositions that allow for the identification of broader patterns of political dynamics. In this paper, we have emphasized the structural power of organized entrepreneurial actors, the saliency of the respective policy issue in prodding state agencies into action, and the role of strategic alliances in coalition building. Yet we are convinced that future research will identify further portable propositions.

Appendix: List of interview partners

- CH1: Independent expert, October 2016, Bern
- CH2: Representative of SKKAB, November 2016, Bern
- CH3: Representative of SBVg, November 2016, Basel
- CH4: Former representative of Swissmem, November 2016, Winterthur
- CH5: Former representative of BIGA, December 2016, Bern
- CH6: Representative of SBFI, December 2016, Bern
- CH7: Researcher, December 2016, Zurich
- CH8: Former member of parliament, December 2016, telephone interview
- CH9: Representative of SGV, December 2016, Zurich
- CH10: Former representative of KV Schweiz, December 2016, Zug
- CH11: Representative of the public administration sector, December 2016, Zurich
- CH12: Representative of SAV, December 2016, Zurich
- CH13: Representative of KV Schweiz, December 2016, Schaffhausen
- CH14: Representative of SGV, August 2017, telephone interview
- CH15: Former representative of BIGA, August 2017, telephone interview
- CH16: Former representative of SAV, August 2017, Zurich
- CH17: Former representative of BBT, September 2017, Zurich
- CH18: Former representative of BBT, October 2017, Winterthur
- CH19: Former representative of UBS, October 2017, St. Gallen
- CH20: Former representative of BBT, October 2017, Zurich
- CH21: Representative of the communication sector, October 2017, telephone interview

4 How Corporatist Economies Innovate

ICT Training in Collective Skill Formation Systems

In light of recent calls for an upskilling of the workforce in advanced political economies, generally subsumed under the term "knowledge economy", the future of collective skill formation is uncertain. This paper asks how collective skill formation systems ensure the provision of collective training in an occupational field that is of great importance in the knowledge economy, namely ICT. Economies have a high interest in ensuring the provision of trained ICT experts to be able to participate in the global competition for high-tech industries. At the same time, the provision of ICT experts is challenging because of the cooperation dilemma inherent in these systems. This paper argues that the state plays a crucial role in initiating VET in this sector because firms are not able to voice their preferences collectively. Thereby, institutional legacies shape the preferences of public authorities, defining what type of training the state enacts. Empirically, the paper examines how Austria and Switzerland integrated ICT into their VET systems. It finds that maintaining collective action in the knowledge economy is a very demanding task and requires an active state that is willing to engage in the establishment of institutions enabling coordination between private actors and to build up beneficial constraints that make apprenticeship training attractive for firms.

4.1 Introduction

Since the latest financial and economic crisis, education systems that are characterized by a high share of work-based training have caught the attention of international organizations and policy-makers alike because of their comparatively low youth unemployment rates (European Union, 2010, 2015; OECD, 2010; SKBF, 2018). In these so-called collective skill formation systems, a large proportion of students participates

in vocational education and training (VET) that takes place in firms and schools and mainly prepares for mid-level jobs in the industrial sector (Bussemeyer & Trampusch, 2012b). However, in light of recent calls for an upskilling of the workforce in advanced political economies, generally subsumed under the term "knowledge economy", the future of VET is uncertain. The knowledge economy is characterized by "rapid technological innovation and associated with a heightened premium on higher education" (Thelen, 2019, p. 295). It is argued that this leads to a replacement of mid-level jobs in the industrial sector by machines. At the same time, the importance of higher education increases, and more and more people work in the service sector (Autor et al., 2003; Goos et al., 2014; Murphy & Oesch, 2018).

This paper asks how collective skill formation systems ensure the provision of upper-secondary vocational education and training in an occupational field that is of great importance in the knowledge economy, namely information and communication technologies (ICT). These technologies have become a significant source of innovation and economic growth in the last two decades (Breznitz & Zysman, 2013; Mazzucato, 2013; Ornston, 2012; Zysman, 2006). States have a high interest in ensuring the provision of trained ICT experts to be able to participate in the global competition for high-tech industries. Given the high levels of cooperation between public and private actors, collective skill formation systems are prime examples of coordinated capitalism (Crouch et al., 1999; Hall & Soskice, 2001; Streeck & Yamamura, 2001; Thelen, 2014). Therefore, examining the strategies of collective training systems to cope with changing skill demands can give valuable insights into the future of coordinated market economies in the knowledge economy.

The provision of ICT experts is challenging for collective skill formation because of the cooperation dilemma inherent in these systems. They depend on firms that voluntarily train apprentices for a period of two to four years. While the overall economy benefits from apprenticeship training, it might be beneficial for individual firms to refrain from training (Emmenegger et al., 2019; Johansen, 2002; Marsden, 1999; Ryan, 2000). To overcome these collective action problems, business intermediary associations are important actors. They are centres for coordination between firms and act as

intermediaries between their members and public authorities (Culpepper, 2003). However, in the growing field of ICT, these intermediaries are often missing because the firms are not organized (yet). Besides, the emphasis of the knowledge economy on general and higher skills increases collective action problems as vocational education and training generally provides more specific, mid-level skills (Anderson & Hassel, 2013; Culpepper & Thelen, 2008; Diessner et al., 2020). Thus, the question arises if collective skill formation systems are able to cope with the skill needs of the knowledge economy.

In this paper, I find that collective skill formation systems can cope with the changing skill needs of the knowledge economy. However, overcoming collective action problems is very demanding. This paper makes three arguments. First, the state must play a much more active role than commonly assumed in collective skill formation systems, where business is argued to be a "pivotal actor" (Busemeyer, 2012). In contrast to the industrial sector, where the organizational degree of business is high, firms lack a collective interest and an organizational infrastructure in ICT. Therefore, the state must step in if it wants to expand vocational education and training to the field of ICT.

Second, I argue that the strong role of the state does not necessarily result in the expansion of statist vocational education and training at the expense of collectively organized dual apprenticeships. Rather, institutional legacies have a substantial effect on the type of vocational education and training that is established in ICT. In the case of statist legacies, the state believes in the quality of non-dual training and has the competencies and means to provide full-time VET schools. This results in the parallel existence of statist and collective training institutions. In contrast, in the case of liberal institutional legacies, vocational education and training in the field of ICT is established predominantly in the form of dual apprenticeships because the state prefers to share the responsibilities for the administration, provision, and financing of training with private actors.

Third, I argue that the type of training institutions established initially has significant consequences for the future of collective training. Collective skill formation systems depend on the ability of the state to create beneficial constraints for firms. Where

collective training and statist training exist in parallel, beneficial constraints that encourage firms to invest in training diminish because full-time vocational schools offer an exit opportunity to firms. As a consequence, apprenticeships have a hard time competing against full-time vocational schools, and the statist solution will dominate. However, even in cases where dual apprenticeships are dominant, collective action problems prevail because firms cannot be forced to train.

Empirically, I examine how Austria and Switzerland, two prototypical collective skill formation systems, coped with the challenge to integrate information and communication technologies (ICT) into their vocational education and training systems. Based on a process tracing analysis, I find that both countries faced severe challenges in integrating ICT training into its VET system. However, both countries managed to expand vocational education and training to the field of ICT. This enables young people with no university entrance diploma to gain access to a rapidly growing economic sector, which had been restricted to higher education graduates for a long time. However, while in Switzerland dual apprenticeships dominate, in Austria, dual apprenticeships compete with full-time school-based training in vocational schools. In both countries, the establishment of this occupation was driven by state actors whose aim was to prevent VET from becoming obsolete in the knowledge economy.

4.2 Collective Skill Formation in the Knowledge Economy

Collective skill formation systems, found in the German-speaking countries, the Netherlands, and Denmark, share three characteristics (Busemeyer & Trampusch, 2012a). First, public and private actors work together closely to ensure the supply of skilled labour needed in the economy. Therefore, the skills taught in dual training are very close to the demands of the labour market, while also fulfilling social goals such as increasing the educational attainment level of disadvantaged groups (Bonoli & Emmenegger, 2020; Carstensen & Ibsen, 2019). Second, skills are standardized and nationally recognized. It ensures that employees are not bound to one firm but can apply their skills also in other firms in the same industry. Third, a large share of students participates in vocational education and training (VET), which usually takes the form of apprenticeships, where students are trained both in firms and schools. Thus, collective

skill formation systems are prime examples of coordinated capitalism and are characterized by strong corporatist institutions (Crouch et al., 1999; Hall & Soskice, 2001; Streeck & Yamamura, 2001; Thelen, 2014). The state provides the legal framework and makes funding for training organisations available. Intermediary associations represent the collective interests of either business or labour in front of the state and other involved actors, are engaged in the administration of the skill formation system, and mediate between its members. Firms provide apprenticeship positions and invest considerably in the training of their workforce.

The high participation rates in VET at the upper-secondary level and the strong orientation of apprenticeships towards the industrial sector stand in contrast to the presumed needs of labour markets in the knowledge economy. Today's industrialized economies are facing the emergence of new technologies, rapid product innovation, and increased information distribution (Ibsen & Thelen, 2017; Iversen & Soskice, 2015; Thelen, 2019). These developments, commonly subsumed under the term "knowledge economy", affect collective skill formation systems profoundly because the jobs vocational education and training typically prepares for – mid-level jobs in the industrial sector – increasingly disappear. The knowledge economy is characterized by "production and services based on knowledge-intensive activities that contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence" (W. W. Powell & Snellman, 2004, p. 201). It is associated with a "heightened premium on higher education" (Thelen, 2019, p. 295) and the polarization of labour markets (Goos & Manning, 2007; Goos et al., 2009; Goos et al., 2014; Spitz-Oener, 2006). Mid-level jobs that VET prepares for (Martin & Knudsen, 2010) increasingly lose ground. The knowledge economy is also defined by a shift of labour from traditional industries to new economic sectors (Anderson & Hassel, 2013; OECD, 2005b; Wren et al., 2013). These sectors are characterized by more general skills needs (e.g., analytical and communication skills) and a lower organizational degree than the traditional industrial sector on which collective skill formation builds (Culpepper & Thelen, 2008; Mayer & Solga, 2008; Zenhäusern & Vaterlaus, 2017). For collective skill formation systems, which rely heavily on vocational education and training that

prepares for mid-level jobs in the industrial sector, the emergence of the knowledge economy is thus a considerable challenge.

Because VET should reflect the skill needs of the labour market and because collective training depends on firms that train apprentices, it is generally assumed that business plays a pivotal role in the governance of collective skill formation systems (Busemeyer, 2012; Busemeyer & Trampusch, 2012a; Culpepper, 2003, 2007; Culpepper & Thelen, 2008). However, in new, emerging sectors, business is not organized (yet). As a consequence, uncertainty among private actors about the benefits of training and the behaviour of other firms is high, which makes collective training in these sectors unlikely (Culpepper, 2003, p. 7f).

When it comes to ICT, though, the state is highly interested in the sufficient provision of trained ICT experts in its national economy. It constitutes an advantage in the global competition for high-tech industries and contributes to economic success in a digitalised world (Breznitz, 2007; Mazzucato, 2013; Ornston, 2012). While higher education plays an important role in the training of ICT experts, it can be expected that collective skill formation systems also have an interest in expanding vocational training to ICT, given that the majority of upper-secondary education takes place in VET (OECD, 2017, indicator C1.3). However, collective action problems prevail in the business community. In order to overcome these cooperation dilemmas, I argue that the state steps in and initiates the expansion of upper-secondary VET to the field of ICT to ensure the provision of a skilled workforce in the digital era.

Although the state replaces business in initiating the expansion of VET to the field of ICT, the strong role of the state does not necessarily lead to a shift of collective to statist vocational education and training because collective VET has strong proponents and a long history in dual training systems (Thelen, 2004). Rather, institutional legacies (Durazzi & Geyer, 2020) shape the preferences of public authorities, defining what type of training the state enacts in the field of ICT. Statist institutional legacies are characterized by a high "confidence that training outside the dual system delivers high-quality skills" (Durazzi & Geyer, 2020, p. 110). In this case, the expansion of public full-time vocational schools is likely. Full-time school-based VET is seen as a viable

alternative to apprenticeships because it reduces coordination efforts and the complexity of decision-making processes. It is statist because private actors are not involved in the governance of training. Instead, public authorities finance the schools and decide about the curricula. However, as we talk about collective skill formation systems, collective training is still a stronghold in these countries. There are influential proponents of dual apprenticeships (Thelen, 2004), which fear that collective training could fall behind school-based training. Among these proponents of apprenticeships are peak-level business associations that have a powerful and often institutionalized voice at the political-strategic level of decision-making in collective skill formation systems (Emmenegger & Seitzl, 2020). If collective training loses ground, they will lose authority and competences, which is why these associations do not allow the complete abandonment of dual apprenticeships. Instead, it is more likely that statist and collective VET are expanded in parallel.

In the long run, though, the parallel establishment of dual apprenticeships and full-time vocational schools will lead to a weakening of collective training (Seitzl & Unterweger, 2020). The expansion of statist VET offers firms an exit option. Rather than investing in the costly training of apprentices, firms have the opportunity to recruit vocationally trained ICT experts from the schools. This option is attractive for firms as long as the quality of the vocational school graduates is not (much) lower than that of apprenticeship graduates because they can save money while the provision of skilled employees is ensured at the same time. Thus, the expansion of school-based VET removes "beneficial constraints" (Streeck, 1997) from firms, leading to a weakening of collective vocational education and training.

In contrast, if the state does not believe in high-quality training outside of the dual system, public authorities will refrain from expanding vocational schools but stick to the well-known, namely dual apprenticeships. I call these institutional legacies liberal. The expansion of collective training comes with major collective action problems, though. Dual apprenticeships rely on firms willing to train apprentices (Streeck, 1997). High costs, low training quality, or the refusal of competitors to train prevent employers from hiring apprentices (Acemoglu & Pischke, 1999; Bonoli & Emmenegger, 2020). To

overcome collective action problems, strong employer associations are important (Bowman, 2005; Culpepper, 2003; Emmenegger et al., 2019; Marsden, 1999; Ryan, 2000). They can provide the state with information about which firms could be convinced to cooperate (so-called "relational information" (Culpepper, 2003, p. 50f)), act as centres for coordination and strategy development, and can mobilize firms to train. Research shows that where employer associations are lacking, state subsidies that compensate training firms evaporate without having an effect (Culpepper, 2003, p. 55). Thus, to be able to establish collective VET in the field of ICT, state actors rely on strong employer associations that provide them with relational information and act as intermediaries between firms and public authorities.

Culpepper (2003) describes the establishment of collective training in the metal and electronics sector in France and Eastern Germany, a field with a long tradition of social partnership and where strong business intermediary associations had existed already. However, these associations are missing in new, emerging sectors, where business is not organized (yet) and where collective interests do not exist. In these cases, the state does not have a "natural" ally among business. Instead, it faces an unorganized field of intermediaries that are not consolidated or do not even exist. Therefore, it can be expected that it is not enough that the state sets up the legal foundations for cooperation and provides subsidies to (existing) associations. Rather, in order to expand dual apprenticeships to these new fields, public authorities need to engage in institution-building, by establishing intermediary associations by themselves. For the long-term success of dual apprenticeships in these new sectors, these associations need to be rooted within the business community, to convince firms to train ICT apprentices. Otherwise, they will not become a "forum for information circulation and collective discussion" (Culpepper, 2003, p. 53) and will not be able to act as intermediaries between firms and public authorities. Thus, expanding dual training in new sectors is very demanding. If the state's focus is solely on building an association to which it can delegate public tasks such as the definition of training content, the establishment of dual apprenticeships is likely to fail because firms will not be willing to train apprentices. Instead, these associations must build trustful relationships with firms, for example, by providing selective incentives only to its members (Culpepper, 2003, p. 54).

4.3 Case Selection: ICT Training in Austria and Switzerland

This paper looks at the expansion of ICT specialist skills in vocational education and training in two prototypical collective skill formation systems, Switzerland and Austria, in order to analyse how collective training systems deal with new skill demands arising in the knowledge economy. The emergence of the knowledge economy is, amongst others, a consequence of the development of internet and communication technologies that have contributed enormously to the reorganization of production processes and the transformation of value creation in today's globalized economy (Breznitz & Zysman, 2013; Zysman, 2006). Consequently, the importance of digital skills in the labour market has increased a lot. While ICT competencies are relevant in all areas of the labour market (OECD, 2005a), this paper looks at ICT specialists. ICT specialists are employees, "who have the ability to develop, maintain and operate ICT systems" and where "ICTs constitute the main part of their job" (OECD, 2004, p. 219). Their demand has increased considerably in the last decade, even during times of economic recession. Between 2007 and 2017, the number of persons employed as ICT specialists increased by 36.1%, compared to an increase in total employment by 3.2% in the EU-28 (Eurostat, 2019).

Expanding ICT training to VET is no easy task: First, ICT specialists are typically associated with tertiary education. In the EU average, about two-thirds of the ICT specialists have completed a higher education degree in 2017 (Eurostat, 2019). Thus, ICT training requires higher and more general skills than dual apprenticeships generally provide. This enhances the poaching problem (Acemoglu & Pischke, 1999; Marsden, 1999) since training is not very firm-specific. Second, the close cooperation between state and private actors was – and still is – highly problematic in the field of ICT. The occupational field is missing a training tradition. Since ICT apprenticeships are relatively new, the required institutions and cooperation processes have only been established recently. This problem is reinforced by the fact that there is no capable association representing all firms that train apprentices. Rather, apprenticeships take place in very different sectors – from education institutions over large software firms to the manufacturing sector.

This paper analyses how ICT experts are trained in two prototypical collective skill formation systems, Austria, and Switzerland. The countries share various characteristics. First, Austria and Switzerland are both small market economies that need to be open to global markets to stay competitive (Katzenstein, 1985). Therefore, both countries are profoundly affected by global macro-economic trends, such as the knowledge economy. Second, both countries have a long tradition of social partnership, a centralized system of interest formation, and coordination between the state, business and trade unions in many aspects (Eichenberger & Mach, 2011; Katzenstein, 1984; Mach & Trampusch, 2011; Obinger et al., 2012; Pernicka & Hefler, 2015; Seitzl & Emmenegger, 2019; F. Traxler, 1995). Lastly, both Austria and Switzerland belong to the group of collective skill formation systems, characterized by high employer involvement in skill formation and high levels of public commitment to vocational education and training (Busemeyer & Trampusch, 2012a). In both countries, the social partners participate in the definition of training content, the governance of the VET system, and the financing of training.

However, both countries differ concerning their institutional legacies. Austria has a long tradition of full-time vocational schools, which have a good reputation among public authorities but also employers (Graf, Lassnigg, & Powell, 2012; Lassnigg, 2011). Thus, the belief in the quality of non-dual VET is high (Durazzi & Geyer, 2020). In addition, political institutions in Austria are very centralized, giving the federal government lots of leeway in VET policies (Emmenegger & Seitzl, 2020; Katzenstein, 1984). Therefore, statist institutional legacies define the Austrian skill formation system (Durazzi & Geyer, 2020). In contrast, being a liberal corporatist country, market mechanisms dominate in Switzerland (Afonso & Mach, 2011; Eichenberger & Mach, 2011; Katzenstein, 1984). This translates into the vocational education and training system, where almost 60 percent of all students in upper-secondary education are enrolled in dual apprenticeships (OECD, 2017, indicator C1.3).¹⁶ Thus, liberal institutional legacies characterize Switzerland.

¹⁶ In Austria, the share is at 33 percent (OECD, 2017, indicator C1.3)

Methodologically, I conduct a systematic process-tracing analysis (Hall, 2006). I trace back the processes that led to the introduction and the institutionalization of ICT training in upper-secondary VET. I look at the period from the mid-1990s, when discussions about ICT apprenticeships started, until today. In a first step, I carefully analysed government documents, position papers of the involved actors, and secondary literature. In a second step, I conducted fourteen semi-structured interviews with people who were actively participating in the reform processes and the institutionalization of the apprenticeships. The interviewees are (former) representatives of the responsible national authorities, social partners, and national experts. The interviews were conducted in 2018 in Vienna, various Swiss cities, and via phone (see Annex). I triangulated the interview data with the primary and secondary resources mentioned above and with newspaper articles on the reforms that were retrieved from Factiva.

4.4 ICT Training in Switzerland and Austria

This paper asks how two prototypical collective skill formation systems, Austria and Switzerland, adapt to the new skill demands arising in the knowledge economy. In this chapter, I analyse the strategies Austria and Switzerland have used to expand ICT training to vocational education and training at the upper-secondary level.¹⁷ Thereby, I trace back the decision-making processes behind the introduction of ICT VET in the 1990s as well as the processes that lead to the institutionalization of upper-secondary vocational education and training in this occupational field in Switzerland and Austria.

Switzerland: Creating beneficial constraints for collective training

The debate about the lack of skilled labour in the field of information and communication technology came up in Switzerland with the rise of the ICT sector at the

¹⁷ In Switzerland, apprentices in the field of ICT can become information technologists (*Informatiker/in EFZ*), media technologists (*Mediamatiker/in EFZ*) or IT specialists (*Informatik-Fachleute EFZ*). In Austria, the following occupations are subsumed under ICT apprenticeships: Information technology (2002-2006: *EDV-Technik*; since 2006: *Informationstechnologie – Technik*), computer science (2002-2006: *Informatik*; since 2006: *Informationstechnologie – Informatik*), system technology (2002-2017: *EDV-Systemtechnik*; since 2018: *Informationstechnologie – Systemtechnik*), operation technology (*Informationstechnologie – Betriebstechnik*, new since 2018), ICT commercial employee (*EDV-Kauffrau*; *E-Commerce-Kauffrau*, new since 2018), and app developing/coding.

end of the 20th century. Especially higher education institutions responded to this need. In the 1980s, Swiss universities started to offer diplomas in computer science (NZZ, 1995), but the number of graduates did not satisfy the demand in the Swiss economy. According to analysts, in 1999, the ICT sector was desperately needing 5000 to 7000 new ICT experts, but only 900 computer scientists finished university (Handelszeitung, 1999). In addition to higher education institutions, some cantons with a desperate need of ICT experts, mostly in the agglomerations of Zurich, Berne, Geneva, and Basel, had set up projects in which apprentices were trained in ICT (NZZ, 1995). However, these apprenticeships were not regulated on a national level, vocational schools defined the training content, and the focus was on broader theoretical issues (CH1; CH3). Therefore, the cantons had severe difficulties in encouraging firms to train ICT apprentices (NZZ, 1995, 1998). As an interview partner summarised, "most of the ICT experts in Switzerland were commercial employees or something like that, who had completed further training in ICT" (CH6).¹⁸

An economic crisis in the mid-1990s opened up a window of opportunity to expand upper-secondary VET to the field of ICT in Switzerland. During this time, a large number of young school leavers could not find an apprenticeship position and became unemployed (Gonon & Maurer, 2012; Müller & Schweri, 2006). While VET had not been a political priority for a long time, the crisis on the apprenticeship market pushed the topic to the front of parliamentary debates (CH6; Strahm, 2008). After fierce debates, the parliament passed two initiatives (*Lehrstellenbeschluss* I and II) that were aimed to increase the number of apprenticeship positions by federally funding different VET projects.

One focus of these initiatives was the promotion of vocational upper-secondary training in the field of ICT to close the gap between the supply and demand for ICT experts. This was seen to be essential to stay competitive in an increasingly digitalised world. As the speaker of the parliamentary Commission for Education, Science, and Culture, Ruth Grossenbacher, commented: "It is not only about quantity, but also about structural

¹⁸ Where direct quotes from interviews, newspaper articles, or official documents are presented, they were translated from German into English.

problems in VET. Switzerland lacks high-tech apprenticeship positions (...)" (Cash, 1999). 40 percent of the 100 million Swiss Francs within the *Lehrstellenbeschluss II* were provided for the promotion of apprenticeship positions in high-tech industries (Gertsch & Gerling, 2001). With these resources, the federal government implemented standardized and nationally recognized upper-secondary VET in the field of ICT.

Importantly, the federal government took the lead over implementing ICT training in upper-secondary VET. Given the strong liberal legacies, this is an exception in the Swiss skill formation system: "Typically, business should have implemented the reform and not the federal government, who only had a supporting role according to the constitution" (CH6). Why did business not take over this responsibility, given the lack of skilled ICT experts at that time? The answer is simple: the firms interested in apprenticeships were not able to organize and implement the reform together (CH6; CH7). They came from different economic sectors and lacked an "occupational and associational tradition" (CH6). However, it was not uncontroversial that the federal government took the lead over the ICT apprenticeships: "They [the peak-level business intermediary associations] said [...] it is their business" (CH7). However, the federal government felt the urge to act quickly and did not want to wait for the firms to organize themselves (CH7).

Most of the ICT projects that were financed by the *Lehrstellenbeschluss II* promoted dual apprenticeships. About 10 million Francs were invested in establishing standardized and nationally recognized ICT apprenticeships. The goal was to increase the number of new apprenticeship contracts to 5000 and to increase the share of female apprentices to at least twenty percent until 2004 (CH1; Stern, von Stokar, & Schneider, 2003, p. 49). Because firms interested in the ICT apprenticeships were not organized, a new association was founded with the financial and administrative support of the federal government. The association, called *I-CH Berufsbildung*, should implement the new apprenticeships (CH1; CH3; CH5; NZZ, 2000).

However, *I-CH Berufsbildung* lacked knowledge about the firms' needs: "It was an artificial thing" (CH7). Therefore, the public authorities established an advisory board that should ensure close ties between *I-CH Berufsbildung* and business needs (Stern et

al., 2003). With the Swiss Employers Association (*Schweizerischer Arbeitgeberverband*) and the Swiss Commercial Association (*Kaufmännischer Verband*), two of the most influential associations in Switzerland were part of the board (Stern et al., 2003, p. 46). In addition, the public authorities invited several ICT-specific associations to the advisory committee (Stern et al., 2003, p. 46). This shows that the state was aware of the fact that *I-CH Berufsbildung* must be rooted within the business community to be able to establish ICT apprenticeships successfully.

The government also funded several programs that should set incentives for firms to train apprentices (Stern et al., 2003, p. 61ff). For example, it established an instrument in which ICT apprentices spent the first year of their training full-time in schools and started their apprenticeship only in their second year (the so-called *Basislehrjahr*). With this instrument, firms could "safe" the costly first year of apprenticeship (Dionisius et al., 2008). The government also promoted the establishment of training networks that allow firms to pool training resources (Leeman, Da Rin, & Imdorf, 2015). These projects should decrease the costs of training for individual firms, setting incentives for firms to hire ICT apprentices.

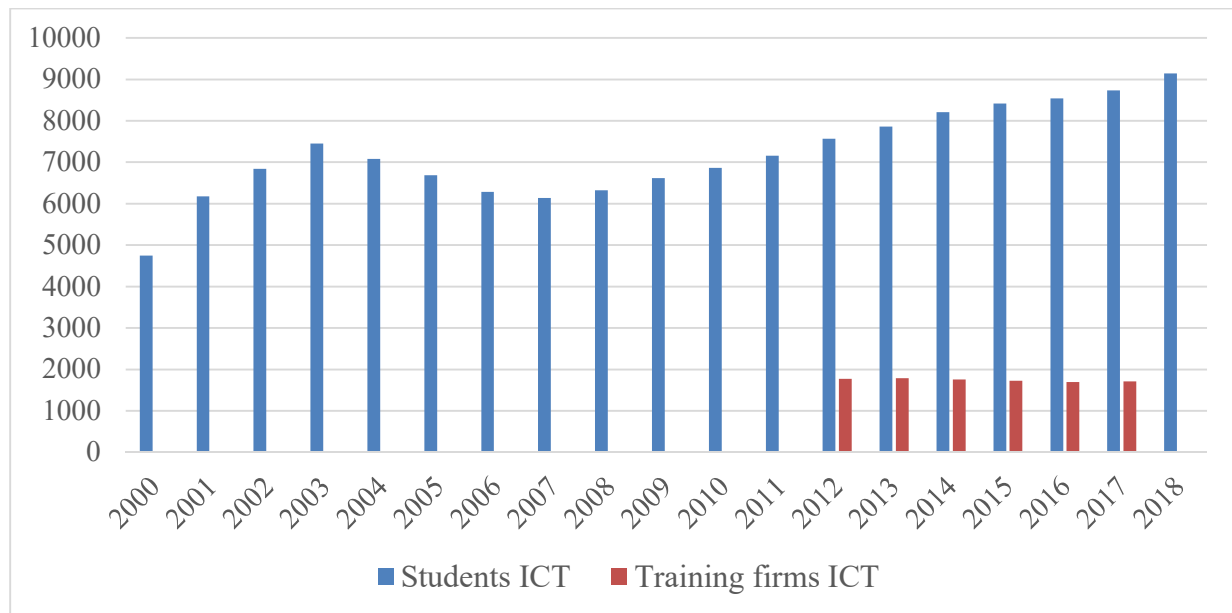
The *Lehrstellenbeschluss II* also funded a project that established eight full-time VET schools in the field of ICT around the country (so-called *Informatikmittelschulen*), thus expanding also statist training to the field of ICT. The goal was to establish about 100 training places through this project (Stern et al., 2003, p. 67). Compared to the planned 5000 apprenticeship places, this is a very low number. Rather than constituting a viable alternative to dual apprenticeships, the ICT schools were only seen as a complementary to apprenticeships in regions very few ICT firms: "The ICT schools offer training places in the ICT occupations in peripheral regions, where the economic structure is such that apprenticeships cannot be offered in an adequate number" (Stern et al., 2003, p. 68).

To summarize, the establishment of upper-secondary VET in the field of ICT in Switzerland was driven by state actors, most importantly the parliament and the federal government. Thereby, liberal institutional legacies determined the decision of the Swiss public authorities to prefer collective over statist training in Switzerland. In the debates during this time, the dominant view was that ICT VET should take place in the form of

dual apprenticeships to ensure that it meets labour market needs (CH6). The state invested a considerable amount of resources into the development of standardized and nationally recognized ICT apprentices, thereby setting incentives for firms to train apprentices. Because firms were not organized, it established an intermediary association whose task was to develop the curriculum of the apprenticeships and recruit training firms. Full-time vocational schools were also created with federal support but were seen as complementary to collective training in regions where firms could not offer enough apprenticeship places.

Today, upper-secondary VET in the field of ICT is amongst the five most popular training occupations in Switzerland (SBFI, 2019, p. 12). Figure 4.1 displays the number of students (in dual apprenticeships and full-time vocational schools) in ICT VET between 2000 and 2018. Already in 2001, the number rose steeply. After a slight downturn following an overall decline in the ICT sector, ICT training became more popular again, reaching to more than 9000 students in 2018.

FIGURE 4.1: Number of students and training firms in Swiss ICT, 2000-2018



Data on ICT students: Bundesamt für Statistik (2004; until 2004), Bundesamt für Statistik (2019; since 2005); Data on training firms: Bundesamt für Statistik (2020)

Unfortunately, it is not possible to differentiate between the number of apprentices and the number of students in full-time vocational schools in federal statistics. However, after the federal government stopped the funding of these schools in 2005, cantons have been very reluctant to finance them (Die Südostschweiz, 2014; Neue Luzerner Zeitung, 2018; Tagesanzeiger, 2005), which is why only nine of these schools exist today in only seven of the 26 Swiss cantons (ICT Berufsbildung Schweiz, 2020). Therefore, it can be assumed that the number of students in full-time vocational schools makes up only a small share in Swiss ICT VET. The number of training firms in the ICT occupations are available for the years between 2012 and 2017 (Figure 4.1). With around 1700, the number of training firms is rather stable.

Switzerland managed to overcome collective action problems through a combination of federal state subsidies and the establishment of an association well-rooted in the business community. First, the establishment of instruments such as *Basislehrjahr* and training networks through the *Lehrstellenbeschluss II* lowered the administrative and financial burdens for training firms (Culpepper, 2003; Johansen, 2002). An evaluation of the projects funded through the *Lehrstellenbeschluss II*, commissioned by the federal government, concludes that "these projects were successful in creating new apprenticeship places and increasing the willingness of firms to train apprentices" (Stern et al., 2003, p. 12). This report asks about their opinion on the projects promoting ICT apprenticeships. About 50 percent of the firms responded that they were only willing to train an apprentice because of the *Basislehrjahr* (Stern et al., 2003, p. 66). These instruments were necessary, especially during the first years after the establishment of Swiss-wide ICT apprenticeships. However, they were also very costly for the state. Therefore, they lost political support after the funding through the *Lehrstellenbeschluss II* ended (Stern et al., 2003, p. 13). Training networks are still in place in some cantons, but the *Basislehrjahr* was abolished after some years.

Second, over the years, firms that employ ICT experts increasingly organized in business intermediary associations. *I-CH Berufsbildung* was exclusively responsible for VET. Already from the start, it had financial difficulties and lost political support from the federal VET agency and the cantons (CH1; CH3; CH5; CH7). Therefore, in 2009 it

was replaced by *ICT Berufsbildung Schweiz*. While *ICT Berufsbildung Schweiz* was formed exclusively for the purpose of VET, it had the support from business players such as Swissmem (association of the mechanical and electrical engineering industries) and Viscom (association of the printing and media industries) as well as from cantonal ICT associations from the beginning (CH2). Today, the cantonal associations provide inter-company courses for ICT apprenticeships, while *ICT Berufsbildung Schweiz* focuses on political issues as well as marketing activities to convince (large) firms to offer apprenticeship positions (CH2; CH4; CH8).

Austria: Parallelism of statist and collective training institutions

Similar to Switzerland, the introduction of VET in the field of ICT was crisis-driven in Austria. However, in contrast to the Swiss debate that centered around an economic crisis, the debates in Austria were led by the fear of not being able to compete economically in a digitalised and globalised world. This fear was mostly voiced by ICT firms and employer associations. A major actor in this debate was Beko, a technology service provider and one of the larger IT companies in Austria. In 1998, the deputy director-general of Beko, Paul Michal, explained, "About 1000 to 1200 ICT graduates leave the universities, universities of applied sciences and VET colleges every year. In Austria, we would need, however, 5000 graduates" (Die Presse, 1998). Similarly, the Federation of Industries criticized that Austria was one of those countries in the world least prepared for the new century and that especially ICT experts were missing (APA, 1999a). These actors thus called for more ICT graduates but asked that higher education institutions should train them.

In upper-secondary vocational education and training, the first to respond to these demands was the Education Ministry. In the late 1990s, it established the first VET college for information technology in Vienna (AT4). VET colleges (*Berufsbildende Höhere Schulen*, BHS) have a long tradition in Austria and have been expanded since the mid-1970s (Graf et al., 2012). Their graduates receive a VET as well as a university entrance diploma, which is why they are popular among students as well as employers. The Education Ministry is responsible for the VET colleges in Austria. The social partners are not involved in its administration, training content definition, and financing,

although they might be consulted in the development of the curricula (Emmenegger & Seitzl, 2020). Thus, VET colleges constitute a strong statist element in Austria's upper-secondary VET system.

The establishment of VET colleges that specialize in ICT displeased the social partners, most importantly the Economic Chamber (*Wirtschaftskammer*, WKÖ) and the Chamber of Labour (*Arbeiterkammer*, AKÖ). They feared that if ICT training was only established in school-based training and if the future of the Austrian economy laid within information technology, apprenticeships would lose further ground. As a consequence, the influence of the social partners would decrease. "If dual training as a whole should not lose, it needs to move (...) If we did not move towards new sectors, dual apprenticeships would lose automatically and only account for 20% instead of 40% of post-secondary education" (AT2). Dual training could become less attractive to employers and school graduates if such a prospering training field only took place at VET colleges and in higher education institutions (AT6). This reasoning was quickly picked up by the Ministry for Economic Affairs that is responsible for dual apprenticeships in the Austrian federal government (Emmenegger & Seitzl, 2020). Similar to the social partners, this ministry would lose ground against the Education Ministry if the share of statist training increased at the expense of collective training.

The two chambers are very influential actors in Austria's corporatist system (Pernicka & Hefler, 2015; F. Traxler, 1995). In upper-secondary VET, they form an advisory body (*Bundesberufsausbildungsbeirat*) that de facto decides on the establishment of new apprenticeships and the reform of existing apprenticeships, although the Ministry for Economic Affairs is formally responsible for the adoption of new VET ordinances (Emmenegger & Seitzl, 2020, p. 35f; Rauner, 2009, p. 203). It is therefore not surprising that the Austrian parliament responded to their pressure and passed a section in the 1998 National Action Plan for Employment, which emphasized that dual training should play a decisive role in increasing employment in the ICT sector: "In light of structural changes, especially because of the rise of the service sector and the massive use of information technologies, we need to tap into new training fields" (BMAGS, BMUK, & BMW, 1998, p. 8). Building on the National Action Plan, the social partners and the

Ministry for Economic Affairs, responsible for dual training in the federal government, passed a regulation that established apprenticeships in the field of ICT in Austria (AT1; AT2; AT3; APA, 1999b; Der Standard, 1999a).

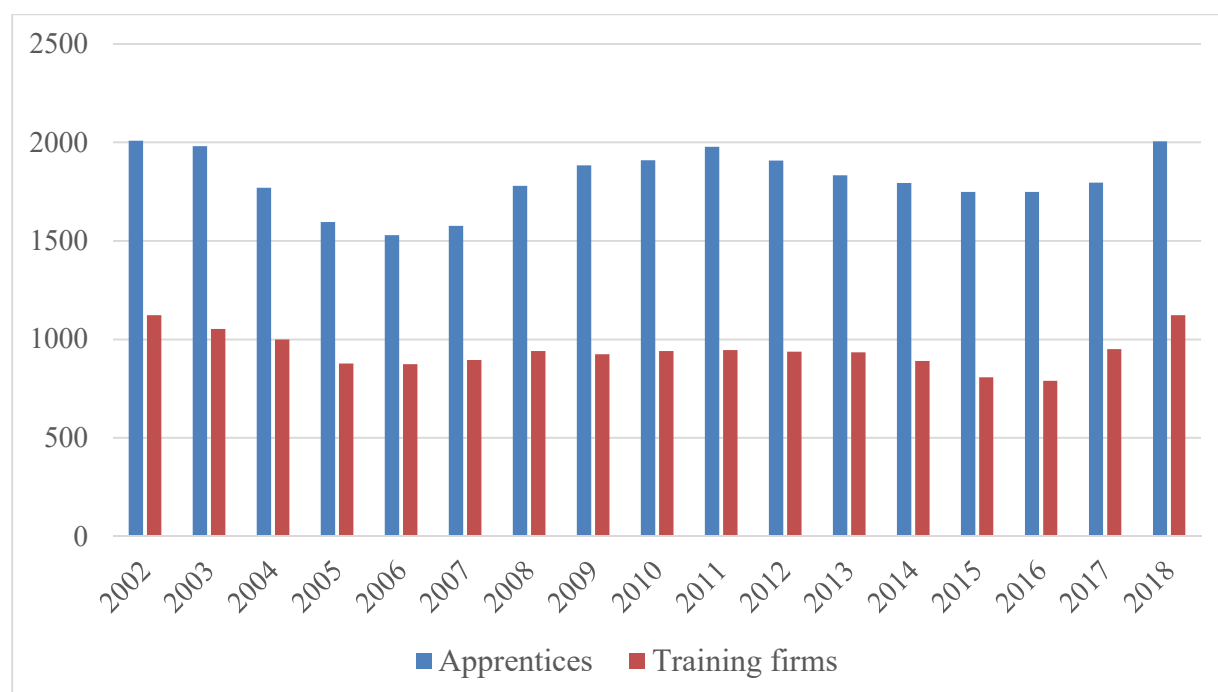
It must be stressed that neither the Ministry for Economic Affairs nor the chambers were driven by firms to establish these apprenticeships. Even though the Economic Chamber asked their members about their opinion on the introduction of these professions, they "received zero feedback" (AT2). Rather, "at that time, relatively little came from the industries" (AT2). Why did the chambers pursue this project even when there was no demand for this among the firms? The answer lies in the role apprenticeships play for the autonomy and prestige of the chambers. As part of the *Bundesberufsausbildungsbeirat*, they participate in all decisions about the future of apprenticeship training in Austria. If apprenticeships lost ground compared to VET colleges, they would lose influence. Thus, the chambers do not necessarily follow the interests articulated by their members if it hinders them from keeping their autonomy and control (Emmenegger & Seitzl, 2019a; Schmitter & Streeck, 1999; F. Traxler & Huemer, 2007).

To summarize, in Austria, with its statist institutional legacy, full-time vocational schools were established as a well-known instrument to increase the provision of ICT experts. Together with the Ministry for Economic Affairs, the social partners reacted to the expansion of VET colleges with the introduction of dual ICT apprenticeships. They did so because they wanted to prevent that dual training falls behind full-time VET schools. In this case, their influence and authority would have declined vis-à-vis their members and other actors in the VET system. However, the apprenticeships were established without the collaboration of potential training firms, which would prove detrimental for their long-term success.

In contrast to Switzerland, where ICT apprenticeships have become very popular (Figure 4.1), in Austria, dual training in ICT did not take off since its introduction. Figure 4.2 shows the number of ICT apprentices and the number of training firms between 2002 and 2018. They remain relatively stable. Between 2002 and 2018, on average 1800 ICT apprentices were trained every year, varying between 1500

apprentices in 2006 to about 2000 apprentices in the years 2002 and 2018. The figure also includes apprentices in public training workshops (*überbetriebliche Ausbildungsstätten*, ÜBA). These workshops enable youths to do parts or the whole of their apprenticeship in a public workshop rather than a firm. Similarly, the number of training firms is relatively stable. It is lowest in 2002 with about 870 training firms and reaches slightly more than 1100 in 2002 and 2018. Compared to other apprenticeship occupations, ICT makes up only a small proportion of all apprentices (Dornmayr & Nowak, 2018, p. 19) and training firms (ibid, p. 33) in Austria.

FIGURE 4.2: Number of apprentices and training firms in Austrian ICT, 2002-2018

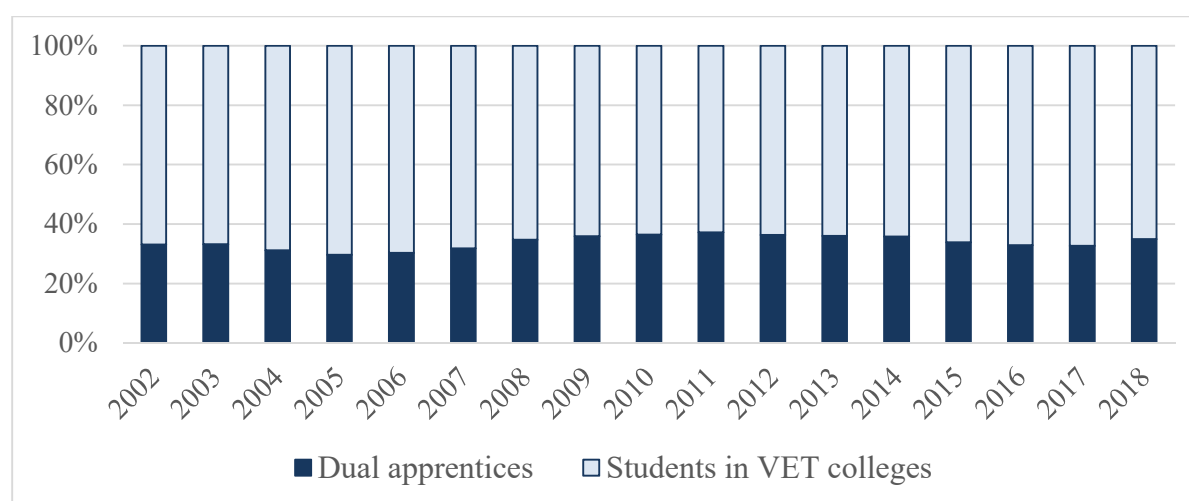


Data: WKÖ (2020)¹⁹

¹⁹ The WKÖ also includes mechatronics engineers (introduced in 2015) in the statistics for ICT apprenticeships. For reasons of comparison, this occupation is not displayed in the statistics shown here because this occupation is not part of the statistics on Switzerland and on VET colleges in Austria. This might slightly underestimate the number of training firms in the years after 2015 displayed in Figure 4.2, because organisations that train in an ICT occupation in addition to mechatronics engineering are not taken into account.

Austria established ICT VET in parallel in full-time schools and dual apprenticeships. This has severe effects on the collective nature of Austria's vocational education and training system. Figure 4.3 displays the share of firm-based upper-secondary VET (including dual apprenticeships but excluding apprentices in ÜBA) compared to the percentage of non-firm-based ICT VET in VET colleges.²⁰ Over the years, only 30 percent of ICT VET takes place as apprenticeships in training firms. This share remains very stable over time and shows that firms have always been very reluctant to train apprentices in the ICT occupations.

FIGURE 4.3: Share of firm-based and non-firm-based VET in Austrian ICT, 2002-2018



Data: WKÖ (2020)

Austria established ICT VET in parallel in full-time schools and dual apprenticeships. This has severe effects on the collective nature of Austria's vocational education and training system. Figure 4.3 displays the share of firm-based upper-secondary VET (including dual apprenticeships but excluding apprentices in ÜBA) compared to the

²⁰ Non-firm-based ICT VET also takes place in the so-called VET schools (*Berufsbildende Mittlere Schulen*). Unfortunately, the number of students in these schools is not publicly available and not displayed in Figure 4.3. Therefore, the share of ICT students in a non-firm environment is underestimated in this figure.

percentage of non-firm-based ICT VET in VET colleges.²¹ Over the years, only 30 percent of ICT VET takes place as apprenticeships in training firms. This share remains very stable over time and shows that firms have always been very reluctant to train apprentices in the ICT occupations.

The availability of statist training allows firms to hire skilled ICT experts without training by themselves. This is less costly since they have to bear the costs for the apprentices by themselves while public authorities bear the costs of the VET colleges. The pure existence of school-based VET makes apprenticeships even more expensive: "Publicly financed school-based VET puts upward pressure on wages (Moretti, Mayerl, Muehlemann, Schlögl, & Wolter, 2019, p. 219). Asked if firms in the ICT sector prefer graduates of VET schools or colleges, representatives of the federal Education Ministry were very open: "Of course, because they [the firms] don't have to pay for it" (AT4). However, recruiting graduates from full-time school-based VET is only an option for firms if these graduates meet their skill demands. This is the case in Austria, where apprenticeships do not have the reputation that they prepare for demanding jobs: "They [the firms] think that more talented youths go to VET colleges and less talented youths stay as apprentices" (AT1). Thus, public and private actors trust in the quality of non-dual VET, which emphasizes Austria's statist legacy.

The existence of VET colleges offers firms an attractive exit opportunity because the better students will always opt for the VET colleges, where they can also obtain a university entrance diploma rather than for an apprenticeship with a poor reputation. The fact that the Economic Chamber acted independently from their members when they pushed for the introduction of ICT apprenticeships might have emphasized the disadvantages of collective training even more, as firms were not involved in their establishment. Accordingly, firms in the ICT sectors have difficulties in finding apprentices that can adhere to the firms' expectations: "We have found out that it doesn't

²¹ Non-firm-based ICT VET also takes place in the so-called VET schools (*Berufsbildende Mittlere Schulen*). Unfortunately, the number of students in these schools is not publicly available and not displayed in Figure 4.3. Therefore, the share of ICT students in a non-firm environment is underestimated in this figure.

work with the very young people that come directly from the school. Typically, our apprentices didn't succeed at a VET college and are thus older and more experienced" (AT5).

4.5 Conclusion

This paper examined how the skill formation systems in Austria and Switzerland, two prototypical corporatist economies that are profoundly affected by the knowledge economy, have reacted to the rapid growth of the information and communication technology sector since the 1990s. Although the knowledge economy, as well as the ICT sector, are generally associated with higher skill demands and expansion of higher education, both countries have established upper-secondary vocational education and training in ICT. Thereby, state actors played a central role in initiating the establishment of VET in this field. Because the firms were not organized yet and thus not able to voice their collective interest, the state stepped in and initiated the introduction of VET in the field of ICT, because it had a high interest in ensuring the provision of a skilled workforce in this emerging field.

The comparison between Austria and Switzerland reveals that institutional legacies are an important explanatory factor for the decision between expanding full-time vocational schools or dual apprenticeships. If public authorities believe in the quality of non-dual training, statist VET is likely to be established because it requires fewer coordination efforts. This is the case in Austria. However, the long tradition of collective training has established influential proponents of the dual system, leading to the parallel establishment of apprenticeships. In contrast, in the case of Switzerland, liberal institutional legacies resulted in the preferential treatment of dual training compared to statist VET. Full-time vocational schools were only founded as a means to enhance the provision of ICT experts in regions with no potential training firms. Because an established employer association was not available, the state did not only initiate collective training by making available financial subsidies, but it had to engage actively in institution-building, resulting in the establishment of *I-CH Berufsbildung*.

The comparison between Switzerland and Austria also shows that the expansion of collective training to new, emerging sectors is relatively demanding. The Austrian case confirms the assumption that the existence of business intermediaries that have local knowledge about the firm landscape and motivate firms to train is not enough to overcome collective action problems. Although the most important business association, the Economic Chamber, promoted the establishment of ICT apprenticeships, Austrian firms have been very reluctant to engage in collective training ever since the introduction of these apprenticeships. On the one hand, they did not involve themselves in the process of developing the apprenticeship ordinance. Rather, the Economic Chamber acted relatively independent from its members in this. On the other hand, the existence of VET colleges in ICT offered an exit option for firms from expensive training.

In Switzerland, the firms were not engaged in the process of setting up ICT apprenticeships as well. Here, the state set up collective institutions, by supporting the establishment of a business intermediary association and by providing administrative and financial support not only in the initiation phase but for several years. In the end, the Swiss business community managed to overcome collective action problems because they were represented by an intermediary association that could gain the firms' support and because the state provided financial and administrative support.

This paper shows that maintaining collective action in the knowledge economy is a very demanding task. It requires an active state that is willing to engage in the establishment of institutions that enable coordination between private actors and to build up beneficial constraints that make apprenticeship training attractive for firms. This is a hard task, and it might seem less complicated to expand full-time school-based training, where only the state has control. Therefore, it could well be that statist elements in VET will be expanded in the future also to other collective skill formation systems.

Appendix: List of interview partners

- CH1: Former representative, I-CH Berufsbildung, 7.5.2018, Zurich
- CH2: Former representative, ICT Berufsbildung Schweiz, 15.5.2018, Zurich
- CH3: Former representative, I-CH Berufsbildung, 15.5.2018, Zurich
- CH4: Former representative, Swiss Federal Institute for Vocational Education and Training, 22.5.2018, Zurich
- CH5: Former representative, BBT, 10.7.2018, phone interview
- CH6: Former member of parliament, 13.12.2018, Berne
- CH7: Former representative, BBT, 15.1.2019, Zurich
- CH8: Representative, ICT Berufsbildung Schweiz, 29.6.2019, phone interview
- AT1: Former representative, Austrian Chamber of Labour, 15.10.2018, Vienna
- AT2: Representative, Austrian Chamber of Commerce, 17.10.2018, Vienna
- AT3: Independent researcher, 17.10.2018, Vienna
- AT4: Representative, Austrian Ministry of Education, 19.10.2018, Vienna
- AT5: Director of a private company, 23.10.2018, phone interview
- AT6: Representative, Austrian Ministry for Economic Affairs, 30.10.2018, phone interview

5 Declining Collectivism at the Higher and Lower End

The Increasing Role of the Austrian State in Times of Technological Change

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with Daniel Franz Unterweger, University of St. Gallen

The knowledge economy challenges the premises of collective skill formation systems. The jobs apprenticeships have traditionally prepared for – mid-level jobs in the industrial sector – disappear. Against it, higher and more general skills become increasingly important, strengthening cooperation dilemmas. In this paper, we analyse employer reactions to situations in which the state replaces firms in the provision of skills. We argue that, while initially not intended, the expansion of statist training reinforces the decline of the number of training firms because it “unconstrains” firms, offering an attractive exit opportunity from employer coordination. We analyse these trajectories by looking at two reforms in the Austrian skill formation system at the higher and the lower end of the skills distribution: the expansion of VET to the field of ICT and the introduction of public training workshops. Both sectors can be expected to expand as the growth of the knowledge economy progresses because trends towards higher skill needs do not only lead to a growth of educational options at the higher end of the skill distribution but also necessitate the integration of those unable to cope with increasing skill demands (e.g., the lower end). We find that in both cases, employers increasingly learned to like statist VET because it allows them to save costs while the provision of a well-trained workforce is still ensured.

5.1 Introduction

Collective skill formation systems are prime examples of coordinated capitalism given their high levels of coordination between public and private actors (Crouch et al., 1999; Hall & Soskice, 2001; Streeck & Yamamura, 2001; Thelen, 2014). However, the knowledge economy, characterized by “production and services based on knowledge-intensive activities that contribute to an accelerated pace of technological and scientific advance” (W. W. Powell & Snellman, 2004, p. 201), challenge the premises these systems build on. The jobs apprenticeships have traditionally prepared for – mid-level jobs in the industrial sector – disappear (Anderson & Hassel, 2013; OECD, 2005b; Wren et al., 2013). Against it, due to upskilling or skill polarization, higher and more general skills become increasingly important, reinforcing cooperation dilemmas in collective skill formation systems (Culpepper & Thelen, 2008). Thus, the question arises how these systems react to the pressure the knowledge economy puts on them.

The literature on the comparative political economy of skill formation systems has outlined the reform trajectories of collective skill formation systems in the face of these pressures. While many countries reform dual VET around the specific needs of business in order to trigger continued employer coordination (Emmenegger & Seitzl, 2019a; Graf, 2018; Thelen & Busemeyer, 2012), these accounts downsize the potential role of the state in responding to structural pressures. In this paper, we analyse employer reactions to situations in which the state replaces firms in the provision of skills. We argue that, while initially not intended, the expansion of statist training reinforces the decline of the number of training firms because it “unconstrains” firms, offering an attractive exit opportunity from employer coordination. While we do not focus on the political determinants that lead to an expanded role of statist training, we show the potential effects this expanded role can have on the nature of collective skill formation systems and coordinated capitalism more broadly.

We analyse such trajectories in the case of Austria, a prototypical collective skill formation system (Busemeyer & Trampusch, 2012b). Specifically, we look at the higher as well as the lower end of the upper-secondary level skills distribution: the expansion of vocational training to the field of ICT and the introduction of public training

workshops. This case selection allows us to shed light on the two areas of the skill distribution particularly affected by the knowledge economy. Trends towards higher skill needs do not only lead to a growth of educational options at the higher end of the skills distribution, but also necessitate the integration of those unable to cope with increasing skills demands (e.g. the lower end). Consequently, both sectors can be expected to expand as the growth of the knowledge economy progresses – albeit mediated by economic trends and political contestation. In both of our cases, the same processes are visible. Drawing on primary and secondary literature, a series of semi-structured expert interviews and newspaper articles, we find that institutional change in Austria’s skill formation system is a case of layering, where statist elements are added to collective solutions. Over the course of the time, employers increasingly learn to like these state-led solutions because they allow them to save costs while the provision of a well-trained workforce is still ensured. In both cases, employers developed new interests supportive to a further decline of collective training, as they learned to appreciate the benefits that these statist VET schemes offer.

5.2 Statism in Collective Skill Formation

Collective skill formation systems are characterized by a high degree of employer coordination in the provision, financing, and administration of VET (Busemeyer & Trampusch, 2012a). The knowledge economy, characterized by increasing demand for higher and more general skills, challenges this high level of coordination. On the one hand, many accounts argue that jobs at the higher and lower end of the skill distribution become increasingly important, and the service sector grows (CEDEFOP, 2018; Goos & Manning, 2007; Goos et al., 2009). This increases not only the skill provision at the higher end but also raises the question if newly created jobs at the lower end still necessitate costly collective training. On the other hand, Oesch and Rodríguez Menés (2011) and Helmrigh et al. (2016) are critical of the polarization thesis, and find that labour markets are comprehensively “upgraded” towards higher skill levels in some economies. Still, the jobs apprenticeships have traditionally prepared for – mid-level jobs in the industrial sector – disappear, increasing the importance of integrating academically weaker and socially disadvantaged groups into the labour market. In sum,

the collective nature of dual training systems is under pressure, as the declining number of training firms in collective skill formation systems shows (Culpepper & Thelen, 2008; Thelen, 2009, 2014; Thelen & Bussemeyer, 2012). The question arises how collective skill formation systems react to this pressure on the higher and lower end of the skills distribution.

The comparative political economy literature has increasingly identified dualizing reform trajectories of coordinated market economies (Emmenegger, Palier, et al., 2012; Palier & Thelen, 2010; Rueda, 2005). Dualization is characterized by increasing divisions between labour market insiders, employed in core sectors shaped by continued employer coordination and covered by generous institutional arrangements concerning welfare and labour market policies, and uncovered outsiders at the periphery. The processes that lead to a dualization of skill formation systems have been described in the research on institutional change in the collective training systems of Germany and Switzerland. A process of “segmentalism” is argued to be an answer to the massive decline in the number of training firms (Thelen & Bussemeyer, 2012). In order to stop this decline and keep employer coordination in place, collective skill formation systems increasingly cater to the demands of (large) firms that prefer firm-specific training content over more general skills, leading to the division of the VET system in ever-smaller segments (Bussemeyer, 2012; Bussemeyer & Iversen, 2012; Thelen & Bussemeyer, 2012). Thereby, instances of segmentalism can be found at the higher (Emmenegger & Seitzl, 2019a; Graf, 2018) as well as the lower end of the skill distribution (Bussemeyer, 2012; Thelen & Bussemeyer, 2012).

While these comparative political economy accounts focus on firms as a central actor, earlier literature has attributed a greater role to the state. Most significantly, Streeck (1997, p. 217) has shown that social institutions, “based in formal law or in a common culture”, can trigger collective action by constraining employer behaviour. More specifically, social institutions are “transforming the preferences of actors [...], teaching them what they really want” (Streeck, 1997, p. 199) – namely collective skill formation. More recently, Martin and Thelen (2007) and Unterwiesing (2020) have shown how the

state, responding to challenges like technological change and globalization, can constrain employer behaviour and cajole employers into collective action.

Acknowledging the potential key role of the state in responding to structural pressures, we are focusing on a different type of state involvement. Similar to Thelen (2014), albeit less interested in the inclusiveness dimension, we focus on instances where the state replaces employer coordination instead of fostering collective action among firms. More specifically, we aim to shed light on the potential processes of employer withdrawal when the state steps in. What happens to collective skill formation if the state takes over tasks previously fulfilled by employers?

We argue that the state responds to pressures of the knowledge economy by expanding its role at the higher and lower end of the skill distribution in order to make up for declining employer coordination. However, the expansion of the state's role reinforces the decline of training firms. As a side-effect of responding to an initial decrease in employer coordination, the state "unconstrains" employers by providing them with an attractive exit opportunity from employer coordination and costly collective training. Statist training elements, if they are of sufficient quality, allow firms to recruit skilled workers while circumventing the costs of collective training. Thereby, the role of the state becomes "more interventionist" and changes from "discretion-limiting to discretion-enhancing" (Howell, 2016, pp. 578, 580).

This does not necessarily mean that employers will actively support such an expanded role of the state. First, employer associations are not primarily driven by the short-term cost considerations of their member firms, but are instead interested in securing long-term influence (Carstensen & Ibsen, 2019; Streeck & Schmitter, 1985). Collective training enables associations to exercise control because they are substantially involved in the governance of these arrangements. Therefore, they might consider increasing state involvement as a threat and respond with opposition. Second, individual firms might be reluctant initially, for example due to quality concerns of statist training. However, they might later reconsider and learn to like the respective statist schemes. As emphasized by Streeck (2004, p. 429), firms are "learning from experience and thereby redefining, if not their interests, then their preferences" in politically redefined contexts. In our case,

this is visible in a process of “layering”, where new elements are added to existing institutions and set “in motion dynamics through which they, over time, actively crowd out or supplant by default the old system” (Streeck & Thelen, 2005, p. 24). They are “affecting the interests and strategic options available to various groups” (Thelen, 2004, p. 290), but, in contrast to “beneficial constraints”, these institutions offer attractive training opportunities for firms outside the collective system. Thus, while not necessarily predicted by decision-makers during their introduction, statist elements can create new supportive interests among employers, reinforcing the expansion of statist instruments at the cost of collective training.

5.3 Statist Training in Austria's Skill Formation System

In order to show how employer coordination decreases when the state steps in, we look at the case of Austria. Austria is considered a prototypical collective skill formation system, characterized by a high share of vocational education and training and a strong corporatist tradition (Busemeyer & Trampusch, 2012b; Katzenstein, 1984). Similar to other collective skill formation systems, the number of training firms in Austria has been shrinking continuously since the late 1990s. With only a few exemptions, there were always more apprenticeship seekers than open apprenticeship positions in Austria (Dornmayr & Nowak, 2018, p. 34ff). However, in contrast to Germany, this did not lead to an increasing influence of large firms. Instead, statist tendencies in skill formation have been increasing in Austria.

In this paper, we analyse reform trajectories at the higher and the lower end of the skill distribution, triggered by the 1998 National Action Plan for Employment (NAP).²² This case selection allows us to shed light on the two areas of the skill distribution particularly affected by the knowledge economy. Trends towards higher skill do not only lead to a

²² The NAP was supposed to tackle a crisis in Austria's apprenticeship market, which coincided with rising unemployment in the European Union more generally. The EU member states committed themselves to create individual “National Action Plans for Employment” in accordance with common employment guidelines in exchange for access to EU funding (European Commission, 1997). These guidelines were formulated on a very broad level, leaving the member states substantial leeway for implementation.

growth of educational options at the higher end of the skills distribution, but also necessitate the integration of those unable to cope with increasing skills demands (e.g. the lower end). Both areas of the skill distribution can be expected to grow as the growth of the knowledge economy progresses – albeit mediated by economic trends and political contestation.

First, at the lower end of the skill distribution, the NAP initiated the introduction of public training workshops that offer academically weaker students the opportunity to participate in VET. Originally only introduced as a preliminary emergency measure to “rescue” dual training, workshops have developed into a permanent feature of the Austrian skill formation system. Second, at the higher end of the skills distribution, the federal government expanded vocational education and training as part of the NAP to information and communication technologies (ICT), a field that is characterized by higher and more general skills needs (Eurostat, 2019; Wren et al., 2013). Therewith, Austria attempted to follow Germany and Switzerland that successfully established ICT apprenticeships in the 1990s (Borch & Weissmann, 2000; Stern et al., 2003). However, in Austria, the introduction of ICT training in full-time schools crowded out employer participation in dual VET at the higher end of the skills distribution. Both ICT full-time schools and public training workshops, layered on top of the standard collective training system, created new interests on the side of firms that resulted in the further decrease of collectivism in the Austrian skill formation system. In both instances, employer associations initially defended the collective system, but firms themselves increasingly learned to like statist training.

While we do not focus on the political determinants that resulted in an expanded role of statist training, we show the potential effects such an expanded role can have on employer coordination and consequently the nature of collective skill formation systems. We trace the processes resulting from the abovementioned statist policies since their respective introduction. Thereby, we rely on secondary literature, primary documents, newspaper articles as well as a series of semi-structured expert interviews with stakeholders in the Austrian vocational education and training system. Interview

partners include representatives from the social partners, government ministries, and research institutes (see Appendix for more details).

5.4 Declining Collectivism at the Lower End: Public Training Workshops

In the mid-90s, Austria's dual VET system experienced a severe crisis as a consequence of demographic changes and structural economic trends away from industrial production towards the service sector (Schneeberger, 2009). In 1996, the so-called apprentice gap already accounted for 4642 places, continually growing up to 5000 in 1998, thereby creating a persisting state of emergency for a small economy like Austria. While around half of all VET graduates go to full-time VET schools in Austria, these schools could not alleviate the situation on the apprenticeship market, as they target the medium and higher end of the upper secondary level skill distribution (Graf et al., 2012, p. 152f). Unsuccessful apprenticeship seekers were rather unlikely "to have the option for continuing at [VET] school due to their previous [lacking] school achievement" (Lechner et al., 2004, p. 137).

The NAP in 1998 aimed to tackle these problems through the introduction of a time-limited "emergency package" (*Jugendausbildungs-Sicherungsgesetz*) consisting of public training workshops. Initially, Austria's main employer association, the Austrian Economic Chamber (WKÖ), and their Christian Democratic allies strongly opposed the introduction of these workshops in Austria. The chamber feared a loss of the employers' long-term influence in the collective training system as well as a competition with firm-based VET, reducing the supply of apprenticeship seekers and putting pressure on apprentices' wages and working conditions (AT3; AT4). This would have been especially detrimental for those firms using apprentices as cheap labour. In short, the chamber always saw training workshops from a more system-wide, long-term perspective, and therefore negatively. Only due to the influence of labour unions (Durazzi & Geyer, 2020), the Social Democrats and a heavy increase in the political salience connected to the ineffectiveness of subsidies proposed by the Austrian Economic Chamber (Unterweger, 2019), public training workshops were introduced as

part of the NAP for a limited period of two years. However, public training workshops were continuously prolonged and ultimately transformed into a permanent instrument called “ÜBA” (*Überbetriebliche Ausbildung*) and integrated into the Vocational Training Act of 2008 (Bergmann, Lechner, Riesenfelder, & Matt, 2011). This was implemented as part of a “youth guarantee”, where every individual received the right for education and training until the age of 18 (Salzmann-Pfleger, 2016). For those who successfully completed lower-secondary school and who are registered at the AMS as an apprenticeship seeker, this also translates to a right for an apprenticeship place at a training workshop if no place in a private firm is available.

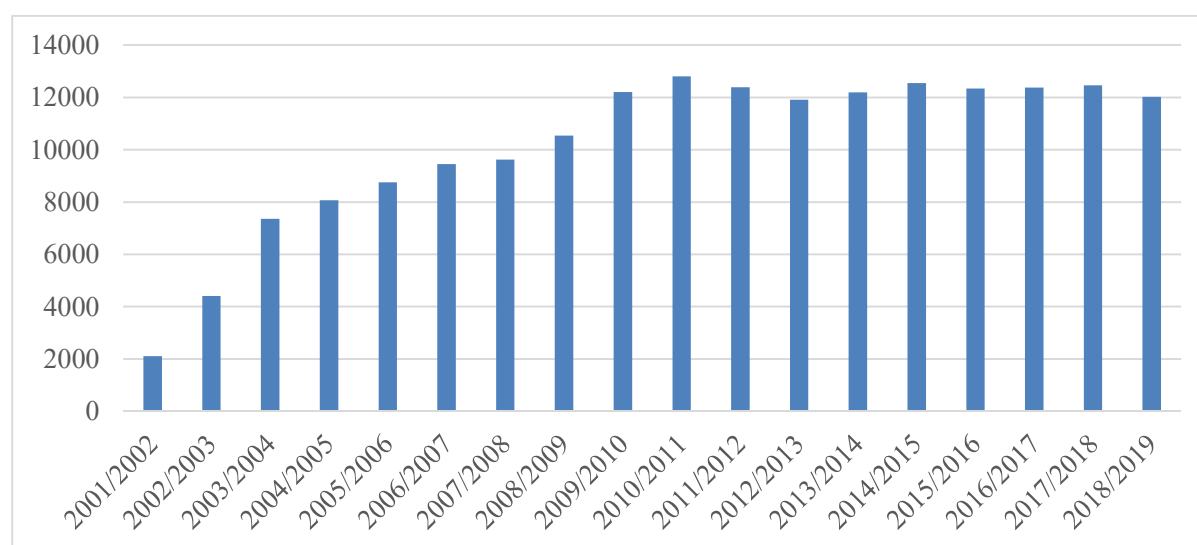
Workshop-based apprentices are organized in two tracks. Apprentices in the *fully* workshop-based apprenticeship track (ÜBA1) complete their apprenticeship in workshops, sometimes with short-term internships (mostly around one to three months per year) in private firms (Bergmann et al., 2011). The internship in private firms plays a far more important role and is longer (mostly with a maximum of up to six months) in the *partially* workshop-based apprenticeship track (ÜBA2), where interns are supposed to switch to a standard apprenticeship at their internship provider in the second year of training. These two forms of workshops often exist side-by-side at the same workshop providers, thereby constituting different tracks with possibilities to switch between them depending on the availability of apprenticeship places at firms for the final years of the apprenticeships. While apprentices in partially workshop-based apprenticeship tracks are not supposed to stay for the whole apprenticeship, trainees that are not hired as an apprentice by their respective firms after their internship can often change to the fully workshop-based track. Trainees in both tracks receive subsistence grants from the public employment office.

As visible in Figure 5.1, public workshop-based apprenticeships have increased significantly in the years after their introduction.²³ Already for the 2001/2002 cohort,

²³ The number of apprentices in workshops is captured by the apprenticeship survey as well as data from the public employment service (AMS). The latter is used for Figure 5.1, which is said to overreport the number of individuals in training workshops, while the former underreports them. See Dornmayr and Nowak (2018, pp. 12, 70) for details.

public workshop-based training accounted for 4.7 percent of all apprenticeship starters (Biffl, Bock-Schappelwein, & Huemer, 2008). Despite periodically improving demographic and economic conditions, training workshops remained a significant feature of the Austrian skill formation system. Today, conservative calculations show that at least 9 percent of all apprenticeship starters visit these workshops (WKÖ, 2019).

FIGURE 5.1: Number of participants in public training workshops, AMS data, 2001-2019



Data source: AMS (2020)

The fact that public training workshops have become a permanent sector of the Austrian skill formation system points towards the changing interests of firms. Initially, the Austrian Economic Chamber as well as the Christian Democrats strongly opposed the introduction of public training workshops in Austria. However, interviews, also with a representative from the Economic Chamber, confirmed that on the level of individual firms, business has increasingly learned to appreciate training workshops to a certain extent. As one independent expert argued,

“Publicly, nobody hung a lantern on it, but indeed there are companies that are not unhappy [with the workshops]. For example, with outsourcing the first year of apprenticeship into the partially workshop-based apprenticeship. And then you [as a firm] say, okay, I look at the

applicants [scheduled to leave the partially workshop-based track] that want to apply for a standard apprenticeship at your firm. Then I have the very nice opportunity to choose. I can take the really good ones. And that is indeed true. But it was politically, from business' side, always denied that such considerations exist.” (AT2)²⁴

Consequently, the internship in the partially workshop-based track allows firms to pre-select individuals that they want to take on as standard apprentices, picking out only stronger individuals from the pool of workshop apprentices.²⁵ According to Bergmann et al. (2011), “the acquisition of and becoming acquainted with potential future firm-based apprentices” is by far the primary motive for firms to offer such internships. This pool of workshop-based apprentices is already a pre-selection of apprentices that cannot find an apprenticeship, as special offers exist for the weakest of all candidates (Litschel & Löffler, 2015). Over the years, ties between individual public training workshops and firms have been fostered, with firms proactively and systematically hiring the best apprentices out of workshops after their first year of apprenticeship (AT2; AT6). In general, firms appear to be as satisfied with the quality of workshop as they are with standard apprentices (Bergmann et al., 2011; Salzmann-Pfleger, 2016).

In addition, many firms have realized that training workshops pay off financially. In Austria, 33 to 40 percent of firms gain net benefits of regular (not workshop-based) apprenticeship training (Lassnigg, 2011). But on average, apprenticeship training after subsidies still imposes net costs on Austrian employers in all years of apprenticeship (Dornmayr, Schlögl, Mayerl, & Winkler, 2016, p. 30). However, Austrian firms gain higher post-training benefits through “retaining a higher share of apprentices and savings on future hiring costs” than, for example, Swiss firms (Moretti et al., 2019, p. 229). Consequently, the ÜBA allows companies to avoid the net costs of the first year

²⁴ Where direct quotes from interviews, newspaper articles, or official documents are presented, they were translated from German into English.

²⁵ In other words, a Matthew effect is visible, where “the least-disadvantaged individuals among a targeted group are more able to benefit from a social policy scheme than their more disadvantaged counterparts”(Pisoni, 2018, p. 289).

of apprenticeship, while still profiting from post-training benefits. Furthermore, all firms that hire apprentices out of workshops are subsidized via a lump-sum payment of 1000 euro per apprentice hired (WKÖ, 2018), which further increases the financial attractiveness of workshops from a firm-perspective.

Firms have also learned to profit from the short-term internship students complete at partially (and in some cases also fully) workshop-based apprenticeship tracks before they potentially become standard apprentices at a private firm. Firms do not have to sign an apprenticeship contract for these interns, making this internship cheaper and less risky than taking on standard apprentices in the first year (AT4). Furthermore, training content of the internship is de facto mostly unregulated due to a lack of supervision, which allows firms to use interns as cheap, unskilled labour, for example in times of peak orders (AT3; AT6). Indeed, there have been incidents where companies solely relied on interns for such uses without signing any apprenticeship contracts (AT3).

As the shift to the knowledge economy further progresses, workshops might become more widespread. Already in the 1990s, training participation shrunk partly due to a shift away from industrial production to the service sector (see above). If the skill polarization thesis proves to be right, we should see a partial downgrading of skill requirements for some occupations. Consequently, it can be expected that firms will conclude that investments in apprenticeship training transporting mid-level skills do not pay off anymore. Rather, they will rely on workshop trainees that necessitate lower investments in training. On the other hand, also upgrading of skill requirements for certain occupations means that there are more apprenticeship seekers that are not seen as fit by companies to enter firm-based apprenticeship training. Workshops also seem to transport some of the new skill needs that firms find underrepresented in standard apprenticeship seekers, as most workshops provide substantial soft-skill coaching in their first year (AT6; Bergmann et al., 2011).

Employers (and their association) never actively campaigned in favour of workshops. It was always the labour side, emphasizing positive inclusiveness effects, that politically pushed for strengthening the workshop-based sector. However, as shown above, the fact that public training workshops have become a permanent feature of the Austrian skill

formation system is also a result of the changing interests of firms, who increasingly learned to like statist training measures. Ultimately, this resulted in the WKÖ consenting to workshop-based training - at least under certain conditions. This is clearly reflected in the WKÖ's current position on training workshops. Their rhetoric is still not favourable towards workshop-based training, for example highlighting alleged quality and cost problems associated with workshops and articulating their clear preference of standard dual apprenticeships. However, they seem to have accepted its existence to a certain extent and currently do not demand an all-out abolishment of workshops but rather a reduction of fully workshop-based apprenticeships combined with a restructuring of workshops towards the partially workshop-based apprenticeship model (AT2; AT3; AT4).

This is not surprising, as firms profit particularly from partially workshop-based apprentices. There, trainees have longer internships at companies and have to find a standard apprenticeship after their first year in the workshop in order to graduate. This also tackles the WKÖ's fear that fully workshop-based apprenticeships would reduce the supply of standard apprenticeship seekers, pushing up wages and working conditions. Therefore, the WKÖ prefers these partially workshop-based apprenticeships over their fully workshop-based counterpart. In the same vein, in order to prevent such an alleged competition between fully workshop-based apprenticeships and private firms for apprenticeship seekers, the WKÖ favours a substantial reduction of the "subsistence grant" for workshop-based apprentices. This makes standard apprenticeships (due to their higher wages) more attractive for students and hurts especially trainees in the fully workshop-based apprenticeship.

All these demands were also reflected in the business-friendly agenda of various coalition governments between the populist radical right and the Christian Democrats. For example, the first right-wing coalition government abolished the fully workshop-based apprenticeship tracks in 2001 and changed this possibility only to a measure of last resort (Lechner et al., 2004). The fully workshop-based apprenticeships were reintroduced only after a change of government in 2006. They attempted to abolish these workshops again during the second right-wing coalition from 2017-2019 (ÖVP & FPÖ,

2017, p. 145), prevented only by the collapse of the government. However, the WKÖ, supported by their allies in the right-wing government, still managed to substantially reduce the subsistence grants for workshop-based trainees (Knecht & Bodenstein, 2019).

The Chamber of Labour as well as labour unions are critical of such plans. In general, labour favours a reduction of partially workshop-based apprenticeships in favour of fully workshop-based apprenticeships. They recognize the potentially negative effect of the partially workshop-based apprenticeship for the training participation of firms due to the financially beneficial outsourcing of the first year of apprenticeship (Trinko, 2013). Similarly, they highlight that firms abuse the more extended internship of partially workshop-based apprenticeships without hiring their interns afterward as standard apprentices and favour shorter internships also for fully workshop-based apprentices (AT3). In other words, while the specific design of training workshops is the subject of current political debates, overall, both sides of the political spectrum increasingly accept the growing role of the state in dual training. Interestingly, in particular the track favoured by right-wing parties (e.g., the partially workshop-based apprenticeship) has the higher potential to substitute standard dual training, either via outsourcing the first year of apprenticeship to workshops in the partially workshop-based track and/or via hiring cheap workshop interns.²⁶

Summing up, this section has shown how firms, due to cost-considerations combined with the high quality of statist training, have learned to profit from training workshops. Thereby, public training workshops contributed at least partially to the lastingly low training participation of companies because they offer firms attractive exit opportunities from employer coordination. The next section addresses the same dynamics at the higher end of the secondary-level skill distribution, namely upper-secondary VET in the field of ICT.

²⁶ While it could be argued that the partially workshop-based apprenticeship is still a collective arrangement after the first year of apprenticeship, overall the role of the state is substantially increased compared to traditional dual apprenticeships.

5.5 Declining Collectivism at the Higher End: Training in the ICT Sector

The 1998 National Action Plan for Employment (NAP) did not only implement VET emergency measures at the lower end of the skill distribution, but it also pointed out the importance of reforms at its higher end. Most importantly, it emphasized that employment in the information, communication and technology (ICT) sector should be increased and that training should play a decisive role in this: “In light of structural changes, especially because of the rise of the service sector and the massive use of information technologies, we need to tap into new training fields” (BMAGS et al., 1998, p. 8).

Therewith, the National Action Plan reflects a broader debate taking place in Austria in the 1990s, which mirrored the fear that Austria might not be able to compete economically in a digitalised and globalised world. This fear was mostly voiced by ICT firms and employer associations. In 1998, the deputy director-general of Beko, a technology service provider and one of the larger IT companies in Austria, Paul Michal, explained, “About 1000 to 1200 ICT graduates leave the universities, universities of applied sciences and VET colleges every year. In Austria, we would need, however, 5000 graduates” (Die Presse, 1998). Similarly, the Federation of Industries, an employer association representing mostly large industrial firms, criticized that Austria was one of the countries least prepared for the new century and that especially ICT experts were missing (APA, 1999a). The debate was not restricted to Austria. In the same year, the OECD warned of a global economic crisis because of the lack of skilled labour (Die Presse, 1998). As the quote by Michal shows, the discussion on the lack of ICT experts focused mostly on the role of universities, universities of applied sciences and VET colleges in the training of these experts. However, as will be shown in the following, both full-time school-based VET and dual VET reforms were implemented in order to promote ICT training.

On the one hand, ICT became a topic for dual apprenticeships, where the social partners and the Ministry of Economic Affairs are the dominant stakeholders. Initially, the Austrian Economic Chamber came up with the idea to introduce apprenticeships in the

field of ICT. Together with the Institute for Research on Qualifications and Training of the Austrian Economy (ibw), a research institute that is closely interlinked with the Economic Chamber, they developed a draft for the respective VET ordinance (AT4) and quickly found support at the Chamber of Labour (AT3) as well as in the Ministry of Economic Affairs (APA, 1999c; Der Standard, 1999a). As a consequence, in the National Action Plan it was emphasized that ICT training should take the form of dual apprenticeships: “The development of new apprenticeship occupations [in ICT] is of high importance” (BMAGS et al., 1998, p. 8).

The VET ordinances for the new training occupations were developed consensually between the Economic Chamber and the Chamber of Labour in the Federal Advisory Board on Apprenticeships (*Bundesberufsausbildungsbeirat*, BBAG). The BBAG is an advisory body to the Ministry of Economic Affairs and is responsible for developing drafts of VET ordinances, which are then enacted by the Ministry of Economic Affairs (Emmenegger & Seitzl, 2020). In 1998, the Ministry enacted VET ordinances for various apprenticeship occupations in the ICT sector, amongst others in computer science and ICT electronics and for IT clerks (APA, 1999b). When the new apprenticeship occupations were announced to the press, the responsible Minister of Economic Affairs stated that the new ordinances were a reaction to business demand for highly qualified ICT experts while at the same time offering more practically talented youths the possibility to start a career in ICT (APA, 1999b).

Thus, ICT apprenticeships were established in a consensual process that involved the Economic Chamber, the Chamber of Labour, and the Ministry of Economic Affairs. They shared a similar motive when developing dual training in the field of ICT: The three institutions feared that dual training would become less attractive to employers and school graduates if such a prospering training field would only take place at VET colleges and in higher education institutions. As one interview partner puts it: “If we did not move towards new sectors, dual apprenticeships would lose automatically and only account for 20% instead of 40% of post-secondary education” (AT4). Both chambers and especially the members of the Federal Advisory Board on Apprenticeships have a high interest in maintaining a stable and attractive apprenticeship system because they

can influence it to a much higher degree than full-time school-based VET (Emmenegger & Seitzl, 2020). The same is true for the VET experts in the Ministry of Economic Affairs. In contrast, firms did not engage in the establishment of ICT apprenticeships. They were asked by the Economic Chamber for their opinion, “but we [the WKÖ] received zero feedback. [...] At that time, relatively little came from the industries” (AT4). Therefore, similar to the introduction of the training workshops, the Economic Chamber as an intermediary association did not necessarily follow the interests articulated by its members. Instead, its behaviour shows that they pursue the goal to keep high levels of autonomy and influence in VET policies (Emmenegger & Seitzl, 2019a; Schmitter & Streeck, 1999; F. Traxler & Huemer, 2007).

These measures to protect dual VET and adapt it to technological change were implemented alongside similar developments in Austria’s full-time school-based sector. Most importantly, VET colleges²⁷ intensified their efforts to train ICT experts (Der Standard, 1999b). VET colleges, especially those with a focus on technology (*Höhere Technische Lehranstalten*, HTL) had taught courses on electronic data processing already since the 1980s. In the 1990s, the number of training courses was significantly increased in order to meet the economy’s need for ICT experts. In addition, the Ministry of Education established the first VET college for information technology in Vienna in 1999 (AT7). In subsequent years, another ten VET colleges with a focus on ICT were established in Austria. The increased focus on ICT in VET colleges was promoted by the Ministry of Education but also by data scientists from the Technical University Vienna (AT7). The VET colleges are entirely under the control of the Ministry of Education. The social partners have no formal say in their administration and training content definition, although labour market actors might be consulted in the development of the curricula.

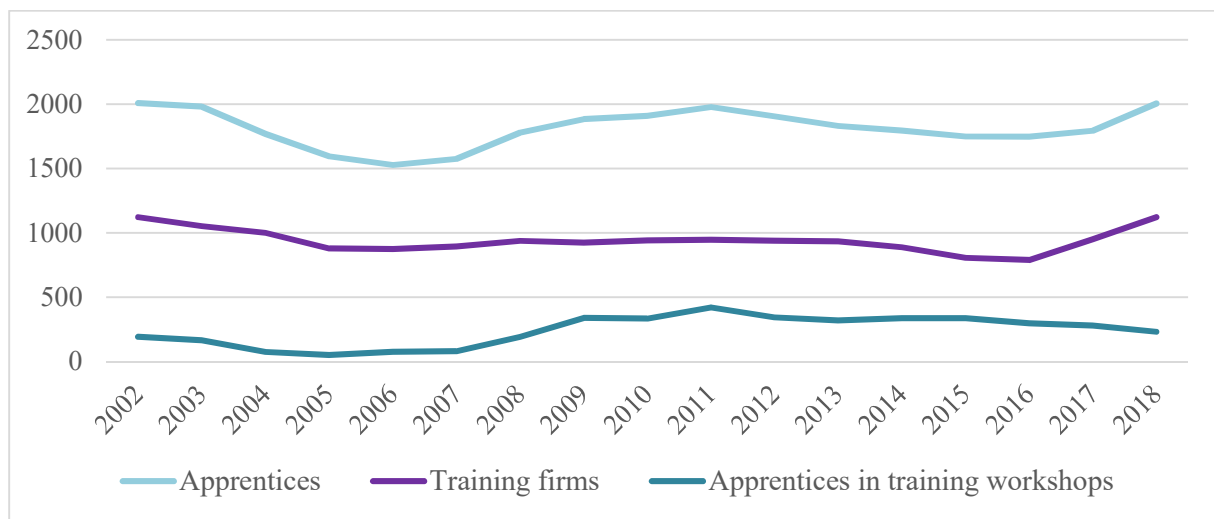
²⁷ Two types of full-time VET schools exist at the upper-secondary level: Vocational schools (*Berufsbildende Mittlere Schulen*, BMS) that offer intermediate-level skills and vocational colleges (*Berufsbildende Höhere Schulen*, BHS) that offer high levels of skills and university entrance qualifications. In general, the reputation of BHS is similar to the general education track offered in Gymnasien (Graf et al., 2012, p. 153).

To summarize, the vocational education and training system in Austria has reacted visibly to the debate in the 1990s about the lack of ICT experts in the economy. On the one hand, new apprenticeship occupations were created in order to train computer scientists and other ICT related experts within the dual training system. The Economic Chamber collaborated with the Chamber of Labour and the Ministry of Economic Affairs to establish these apprenticeships. On the other hand, the Austrian state expanded training opportunities by layering ICT VET colleges and new schools with an emphasis on ICT training onto the standard, collective training system.

This introduction of full-time school-based ICT training came at the expense of apprenticeship training, as firms continuously learned to acknowledge the benefits of full-time school-based VET. While the parallelism between apprenticeships and full-time schools has existed in Austria for a long time (Graf et al., 2012) with around half of all VET graduates going to full-time schools (Eurostat, 2018), ICT occupations are *predominantly* offered in such full-time schools. Figure 5.2 shows the number of apprentices and training firms in the ICT occupations between 2002 and 2018.²⁸ While the number of ICT apprentices varies over the years, on average 1800 young people were trained in an apprenticeship during this period. The number of training organisations includes firms and public training workshops. It is more stable than the number of apprentices, being slightly below 1000 training organisations between 2002 and 2018. Overall, compared to other training occupations, the number of training organisations (Dornmayr & Nowak, 2018, p. 33) and apprentices (Dornmayr & Nowak, 2018, p. 19) is still rather low. For example, in 2017, more than 9000 apprentices were trained in the occupational field of tourism and more than 10000 apprentices were trained in mechanical engineering (Dornmayr & Nowak, 2018, p. 19).

²⁸ This includes the following occupations: Information technology (2002-2006: *EDV-Technik*; since 2006: *Informationstechnologie – Technik*), computer science (2002-2006: *Informatik*; since 2006: *Informationstechnologie – Informatik*), system technology (2002-2017: *EDV-Systemtechnik*; since 2018: *Informationstechnologie – Systemtechnik*), operation technology (*Informationstechnologie – Betriebstechnik*, new since 2018), ICT commercial employee (*EDV-Kauffrau*; *E-Commerce-Kauffrau*, new since 2018), and app developing/coding.

FIGURE 5.2: Number of all apprentices, apprentices in public training workshops, and training organisations in the ICT occupations, 2002-2018



Data: WKÖ (2020)²⁹

Collectively organized apprenticeship training in private firms stands in contrast to the more statist solutions of public training workshops and VET colleges. Figure 5.2 also displays the number of apprentices in workshops. It ranges from less than 100 between 2004 and 2007 to more than 400 in 2011. But most importantly, the comparison with ICT students at VET colleges shows that ICT apprenticeships in firms play only a minor role in the provision of ICT experts in Austria. Between 2002 and 2018, there were on average 3500 ICT students at VET colleges. Figure 5.3 displays the share of ICT students in VET colleges and public training workshops compared to ICT apprentices in firms. It thus contrasts the training efforts of firms compared to the statist solutions of workshops and full-time school-based VET.³⁰ During 2002 and 2018, 70 percent of

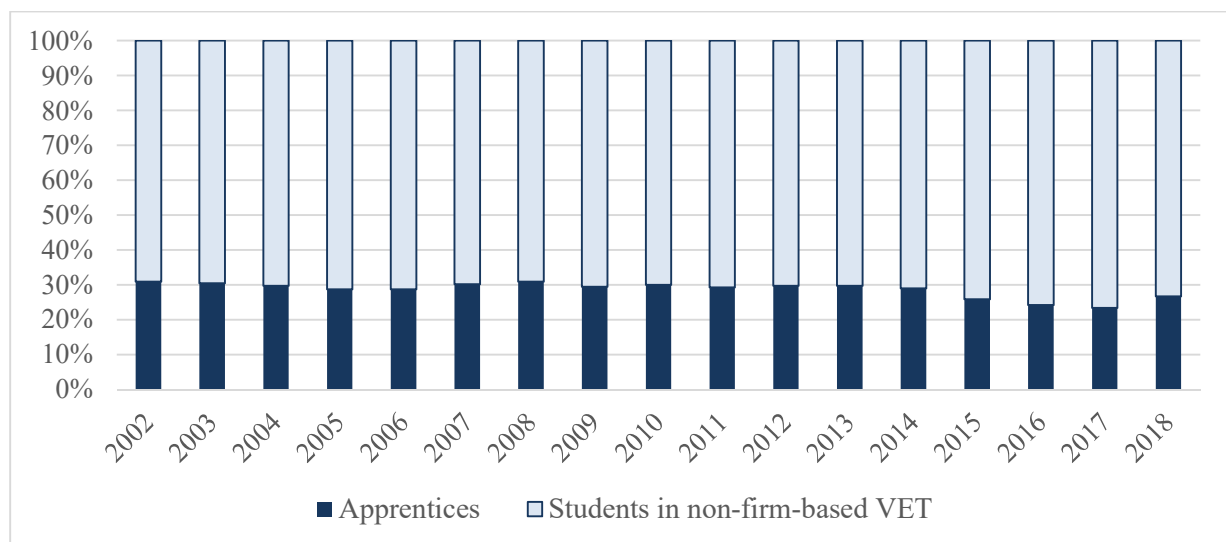
²⁹ The WKÖ also includes mechatronics engineers (introduced in 2015) in the statistics for ICT apprenticeships. While mechatronics engineering is also available in full-time schools, the data on ICT students at VET colleges displayed here only include computer science and data technology but not mechatronics engineering. For reasons of comparison, this occupation is consequently not displayed in the statistics shown here. However, this might slightly underestimate the number of training firms in the years after 2015 because organisations that train in an ICT occupation in addition to mechatronics engineering are not taken into account.

³⁰ ICT VET at upper-secondary level is also taking place at VET schools (*Berufsbildende Mittlere Schulen*, BMS) but statistics on students in these schools are not available. Therefore, the share of ICT students in a non-firm environment is even underestimated here.

ICT VET training took place in VET colleges and public training workshops and only 30 percent in apprenticeships. The share remains very stable over time.

Thus, in Austria, firms prefer statit to collective VET training in the ICT occupations. The availability of an exit option relaxes the beneficial constraints of dual apprenticeships and the firms are happy to take this opportunity. There are at least two reasons why training ICT apprentices is less attractive to firms than hiring graduates from VET colleges. On the one hand, firms believe that ICT apprentices do not meet the skill demands of firms: “They [the firms] think that more talented youths go to VET colleges and less talented youths stay as apprentices” (AT3). Accordingly, firms in the ICT sectors have difficulties in finding apprentices that can adhere to the firms’ expectations: “We have found out that it does not work with the very young people that come directly from the school. Typically, our apprentices did not succeed at a VET college and are thus older and more experienced” (AT8).

FIGURE 5.3: Share of firm-based and non-firm-based VET training in the ICT occupations, 2002-2018



Data: WKÖ (2020)

On the other hand, firms have an economic argument not to train apprentices but to hire graduates from VET colleges. According to Moretti et al. (2019, p. 219), the “publicly financed school-based VET system [...] puts upward pressure on wages.” Thus, the

training of ICT experts in VET colleges even increases pressure on apprenticeship wages by reducing the supply of apprenticeship seekers. Because of the relatively high training wages, training an apprentice in Austria creates more costs than benefits to a firm (Moretti et al., 2019). Asked if firms in the ICT sector prefer graduates of VET schools or colleges, representatives of a federal ministry were very open: “Of course, because they [the firms] do not have to pay for it” (AT7). Costs per student in full-time school-based VET are ten times higher than in part-time schools in dual VET (Graf et al., 2012, p. 165). Compared to dual VET, this reveals the higher quality of training as well as the “substantial silent shift of VET costs” from firms to the state in full-time schools (Lassnigg, 2011, p. 429).

Thus, the increased importance of ICT has weakened the collective part of the Austrian VET system. As Lassnigg (Lassnigg, 2011, p. 433) argues, “the more dynamic sectors have turned towards full-time VET colleges and higher education as a primary source of skilled workers”. As these sectors that are fuelled by digitisation grow, the trend towards decreasing collectivism and increasing statism is likely to continue. Similar to the case of public training workshops, the newly available ICT full-time schools resulted in changing preferences on the side of firms, leading to a decline of the collective ICT apprenticeships. Since the majority of ICT experts with a VET degree come from full-time vocational schools, the question arises on how collective training can be sustained in the knowledge economy.

5.6 Conclusion

In this chapter, we showed how initially somewhat limited statist elements, layered onto the collective skill formation system, can lead to self-reinforcing dynamics that have the potential to crowd out employer participation in collective training. Therewith, we shed light on the specific processes of decreasing employer coordination when the state steps in. The VET policy initiatives entailed in the 1998 National Action Plan for Employment (NAP) capture these developments. First, the initially limited training workshops, which were part of the short-term “rescue package” of the NAP, reduced training participation of firms at the lower end of the Austrian skill formation system, thereby facilitating a long-term expansion of training workshops. With the public training workshops, the

NAP introduced a new policy measure that partially crowded out the collective provision of training. Second, in the case of the ICT occupations, the school-based sector has crowded out employer participation in dual VET at the higher end of secondary-level training. Thereby, it limited the adaptability and viability of collective training in the knowledge economy. In other words, collective action in the new NAP occupations is hard to achieve due to the parallel establishment of specific ICT-dedicated VET colleges. In both cases, employers developed new interests that contributed to a further decline of collective training, as they learned to appreciate the benefits that these statist VET schemes offer. This process is taking place at the lower as well as at the higher end of the skill distribution in secondary level VET, parts of the skill distribution that are seen as essential as the shift to a knowledge economy progresses.

Assuming that the knowledge economy leads to the growth of educational options at the higher end of the skill distribution and increasingly necessitates the integration of those unable to cope with increasing skill demands (e.g. the lower end), these dynamics are no good news for the collective nature of VET in Austria. Rather, it can be expected that the role of statist training will increase in the next years in Austria – albeit mediated by economic trends and political contestation. While we do not focus on the political determinants that lead to an expanded role of the state, the potential effects of increasing statist training can be expected to apply also beyond the Austrian case. In other words, collective skill formation systems that expand statist training in order to react to a tightening of apprenticeship markets might reinforce the tendencies of declining employer coordination. For example, it might be worth to examine in how far the German transition system (Thelen & Busemeyer, 2012), itself a case of statism in collective skill formation, benefits employers, leading to an increasing reluctance on their side to take up “standard” apprenticeship seekers straight after school.

While this chapter has focused on decreasing employer coordination in skill formation, we are not claiming that such trends should be seen as something socially or economically negative. First, Chuan, Ibsen, and Thelen (2019) as well as Anderson and Hassel (2013) highlight that statist skill formation might be better able to cope with the challenges arising from the knowledge economy, because they transmit more general

skills that enable employees to adapt to new skill demands. In contrast, in collective skill formation systems, employees might be less equipped to respond flexibly to the demands of the labour market. Second, as Thelen (2014) has shown, an increasing role of the state has the potential to increase the inclusiveness of skill formation systems. This holds for the case of training workshops, which are generally praised for the good labour market chances of their graduates and are therefore widely regarded as contributing to labour market inclusiveness (Bergmann et al., 2011; Durazzi & Geyer, 2020). However, in the case of Austria's school-based VET, "dualization has been rather inbuilt into the system" (Pernicka & Hefler, 2015, p. 49), given the countries' high stratification between different levels of upper-secondary VET (apprenticeships, schools, and colleges) with only the highest achieving students being accepted into VET colleges. While going beyond the scope of this article, future research might therefore be well advised to dig into the determinants of socially and economically "successful" state intervention.

Appendix: List of interview partners

- AT1: Independent expert A
- AT2: Independent expert B
- AT3: Representative of the Austrian Chamber of Labour
- AT4: Representative A of the Austrian Economic Chamber
- AT5: Independent expert C
- AT6: Representative of the Federal Ministry for Social Affairs
- AT7: Two representatives of the Federal Ministry of Education, Science and Research
- AT8: Representative B of the Austrian Economic Chamber
- AT9: Representative of the Federal Ministry for Economic Affairs

6 Conclusion

This dissertation has provided new insights on how collective skill formation systems adapt to changing skill demands that arise in the face of globalisation, technological change, and deindustrialisation. As prototypical examples of coordinated capitalist economies (Crouch et al., 1999; Hall & Soskice, 2001; Streeck & Yamamura, 2001), they represent an excellent case to analyse collective action problems and the interaction between private and public actors in the provision of collective goods. Collective skill formation systems rely on firms that are willing to train apprentices. At the same time, individual firms have strong incentives not to train (Acemoglu & Pischke, 1999; Iversen & Soskice, 2009; Marsden, 1999). Thus, collective action problems are inherent in these systems (Bonoli & Emmenegger, 2020). Recent socio-economic trends such as globalisation, technological change, and deindustrialisation, generally subsumed under the term “knowledge economy” (Hope & Martelli, 2019; Iversen & Soskice, 2015, 2019; Thelen, 2019), reinforce these cooperation dilemmas. In the knowledge economy, beneficial constraints are removed, and uncertainties about the benefits of training and the behaviour of other firms increase (Brown et al., 2011; Sorge & Streeck, 2016; Streeck, 2009).

This dissertation provides a more fine-grained picture of the preferences of public and private actors in collective skill formation and the processes of institutional change these systems experience. It also sheds light on how collective skill formation systems deal with the pressures that globalisation, deindustrialisation and technological change put on them by expanding its focus to sectors that are particularly affected by the knowledge economy. Empirically, I have analysed reforms in two prototypical collective skill formation systems, Austria and Switzerland, in two occupational fields particularly affected by the knowledge economy. On the one hand, I have looked at the commercial sector, where a large share of tasks are replaced by technologies or outsourced to low-cost countries (Dengler & Matthes, 2015; Iten et al., 2016). On the other hand, the dissertation has focused on the field of information and communication technologies

(ICT), a new, emerging sector that is key to remain competitive in the knowledge economy (Breznitz & Zysman, 2013; Mazzucato, 2013; Ornston, 2012; Zysman, 2006).

The first article analyses the politics of segmentalism by asking who prevails in the reform of commercial training in Switzerland and why. It finds that large firms are in a particularly dominant position because they are organised and because they have alternatives to collective training. Large firms prefer a training system that offers a high share of firm-specific training because of their need for higher skills and because they can recruit from internal labour markets. Their influential role in Swiss commercial training thus facilitated segmentalism. However, segmentalism is avoidable if the supporters of a collective system have the means to force large firms to compromise, for example by strong intermediary associations.

The second paper analyses the micro-foundations of institutional change and stability in collective skill formation systems, thereby responding to the paradox of plasticity that asks how institutions can have a causal role when they are continuously challenged. It argues that agency characterises all situations of stability and change in institutions because it is needed when creating challenger coalitions, maintaining incumbent coalitions and gaining or maintaining support by state actors. Thereby, the agency's primary role is to be found in coalitional work by organised entrepreneurial actors. The article finds that coalition building is complicated, thus contributing to the stability of institutions. One reason for this stability is the role of the state, which actively shapes whether the incumbent coalition or the challenger coalition prevails.

The third article asks how upper-secondary VET can be expanded to new economic sectors that are increasingly important in the knowledge economy but where business is not organised (yet). It argues that the state plays a crucial role in initiating VET in these sectors because firms are not able to voice their preferences collectively. However, while the state takes on an important initiating role, it does not necessarily expand statist elements. Rather, institutional legacies determine if dual apprenticeships are implemented solely, or if the state establishes statist measures on top of dual training. In both cases, maintaining collective action amongst firms is a hard task because beneficial constraints are missing in this environment.

The last paper analyses employer reactions to situations in which the state replaces firms in the provision of skills. It argues that, while initially not intended, the expansion of statist training reinforces the decline of the number of training firms because it “unconstrains” firms, offering an attractive exit opportunity from employer coordination. The paper finds that employers increasingly learn to like statist VET because it allows them to save costs while the provision of a well-trained workforce is still ensured. This development can be found at the higher as well as the lower end of the skill distribution, both parts of the VET system that can be expected to grow in the knowledge economy.

6.1 Contributions

In the introduction to this dissertation, I have listed four research puzzles that the dissertation aims to address. In this section, I summarise the main contributions to these open questions. I start with the role of business in collective skill formation systems. The segmentalism literature finds that the influence of large firms in the German skill formation system is increasing, resulting in a segmented VET system that restricts labour mobility (Graf, 2018; Thelen & Busemeyer, 2012). In my dissertation, I contribute to this literature by providing a more fine-grained picture of the preferences and sources of influence of different business actors in this dissertation.

The analysis of the reforms of Swiss commercial training shows that segmentalism is not restricted to Germany but can be found in other prototypical collective skill formation systems as well. The reason for this development lies in the structurally privileged role of large firms. They are privileged because they are important providers of training but also because they are able to exit collectively. Large firms have an interest in a high share of firm-specific training because it better allows them to meet their skill demands. At the same time, they have the financial and administrative resources to engage in firm-specific VET. This results in segmentalism. However, the case of Swiss commercial training also shows that collective systems can be maintained. This is the case when their proponents, most importantly small firms and business intermediary associations, can undermine the credibility of the large firms’ exit threat and if they are able to organise in employer associations. Thus, segmentalism is not unavoidable.

However, the example of Austria reveals that business does not act independently from state authorities. Rather, firms can learn to like measures that increase the influence of the state at the expense of private actors. They do so if they can save costs, and if the provision of a highly qualified workforce is still ensured. In contrast to Switzerland, the decline of collectivism in the training system does not result in segmentalism in the Austrian VET system. Rather, I observe the establishment of elements of statism because the state is willing to step in. While I do not provide a fully-fledged explanation when segmentalism and when statism prevails, my findings indicate that differences in institutional legacies are an important explanatory factor for state intervention. I will discuss this finding further below.

Lastly, the analysis of Swiss commercial training also demonstrates the central role of agency in institutional change. Thereby, the primary role of agency is to be found in the building of challenger coalitions but also in the maintenance of incumbent coalitions. In addition, agency is needed to gain the support of the state which plays a major role in stabilising institutions or facilitating institutional change. Various factors influence if incumbent or challenger coalitions prevail. Among these are the structural power of organised institutional entrepreneurs, which results in an advantage of business coalitions vis-à-vis other coalitions, the political saliency of a topic, and the formation of strategic alliances with other actors.

The second research puzzle introduced in this dissertation concerns the role of the state in collective skill formation. While collective skill formation systems are characterised by high levels of public commitment (Busemeyer & Trampusch, 2012a), the literature on neo-corporatism attributes a pivotal role to the business community (e.g. Busemeyer, 2012; Scharpf, 1997), restricting the role of the state to institutionalising the outcomes of coalitional dynamics (Palier & Thelen, 2010).

In this dissertation, I find that the state plays a much more active role than generally assumed. On the one hand, the case of Swiss commercial training shows that the state actively influences if the incumbent or the challenger coalition prevails. Thereby, different dynamics can explain the state's interests. These interests can be rooted in partisan politics (Busemeyer, 2015; Iversen & Stephens, 2008), for example in cases

with high political salience. The state's interests can also be rooted in concerns about the effectiveness of policies. Swiss commercial training is an example for the latter. Here, discussions about potential avenues for reform took place at the bureaucratic level rather than in parliament. Therefore, the state was primarily concerned about the effectiveness of policies.

On the other hand, the case of vocational education and training in the field of ICT shows the central role of the state in new, emerging economic sectors. If there is a public interest in expanding VET to these fields, for example because the provision of a skilled workforce is essential in order to be able to keep up in the global competition for high-tech industries, the state is likely to step in when business lacks a collective interest and an organisational infrastructure. In these cases, it does not only provide financial subsidies but engages actively in institution-building. Thereby, the active role of the state does not result necessarily in more statist policies in collective skill formation systems. Instead, the comparison between Austria and Switzerland reveals that institutional legacies are an important explanatory factor for the decision between expanding full-time vocational schools or dual apprenticeships. In the case of liberal institutional legacies, public authorities prefer dual training over statist VET because they believe that high-quality training is only possible when firms are involved. In contrast, in the case of statist institutional legacies, public authorities believe in the quality of non-dual training, and statist VET is likely to be established in these economic sectors because it requires fewer coordination efforts. Moreover, the case of Austria shows that the expansion of statist VET in these sectors weakens collective training overall because it establishes an exit option for firms which they learn to like.

These findings lead me to the third research puzzle, namely the question of how collective skill formation systems get along in the knowledge economy. The knowledge economy is characterised by technological change and heightened pressure on individuals to increase their skills and educational level (Iversen & Soskice, 2019; W. W. Powell & Snellman, 2004; Thelen, 2019). Moreover, globalisation, digitalisation, and deindustrialisation “unconstrain” capital, reinforcing the cooperation dilemma inherent in coordinated market economies (Sorge & Streeck, 2016; Streeck, 2009).

These developments create pressure on collective skill formation systems that prepare for mid-level jobs in the industrial sector (Anderson & Hassel, 2013; Diessner et al., 2020). It becomes increasingly hard to encourage firms to engage in collective action and to motivate school graduates to start a vocational career.

However, as I show in this dissertation, the rise of the knowledge economy does not mean the end of vocational education and training in collective skill formation systems. Instead, there still exists powerful actors that ensure the adaptation of VET to new skill demands. Among these actors are business intermediary associations, who profit from a strong dual VET system because it ensures their authority and influence. Also public authorities have an interest in preserving the VET system. The support of the state for VET can have ideological reasons, as the legislative initiative in Switzerland to expand VET to the field of ICT shows. Also, economic reasoning could explain why public authorities could be interested in a strong training system. In a globalised and digitalised world, there is high demand for a skilled workforce in new, emerging sectors such as ICT. Given the reliance of collective skill formation systems on vocational education and training, state actors might want to fulfil this skill demands also with the help of the VET system. Lastly, self-interest can play a role, as well. The case of Austria shows that turf battles between state agencies about competencies in VET policies strengthened the overall vocational education and training system.

However, the knowledge economy reinforces the collective action problems immanent in collective skill formation systems. Maintaining coordination in the knowledge economy is a very demanding task. It requires an active state that is willing to engage in the establishment of institutions, enabling coordination between private actors, and to build up beneficial constraints that make apprenticeship training attractive for firms. This is a hard task, and it might seem less complicated to expand full-time school-based training, where only the state has control. Therefore, it can be assumed that the knowledge economy will strengthen the statist elements in collective skill formation systems and decrease employer coordination in the long run.

Finally, I have stated in the introduction that the research so far focuses mainly on the national level, neglecting the fact that social practices vary at the regional, sectoral, and

occupational level (Emmenegger et al., 2019). By analysing reforms in two training occupations, commercial training and ICT training, I shed light on the processes of decentralised cooperation between public and private actors at the occupational level. I find that the demand for general skills, which characterises the knowledge economy, translates into policies in both cases. However, these policies differ significantly, depending on the organisation of the business landscape. In occupational fields characterised by a dense network of business actors organised in various intermediary associations, large firms are likely to take over the responsibility to train general skills because they need this type of skills and because they can afford their provision. Thus, the share of firm-specific training increases, leading to segmentalism. This is the case in Swiss commercial training. In contrast, when business is not organised and thus unable to initiate VET, the state steps in to provide training as can be seen in the establishment of vocational education and training in the field of ICT.

Overall, the findings of this dissertation support the assumption that “varieties of liberalisation” (Thelen, 2014) characterise institutional change in coordinated capitalist economies. The reform of Swiss commercial training is a case of segmentalism as large firms take control over the content of training. This results in restricted labour mobility and an increasingly segmented VET system. The Austrian reforms analysed here – the establishment of vocational education and training in the field of ICT and the introduction of public training workshops – resemble cases of increasing statism, as statist solutions were layered on top of collective apprenticeship training and are highly appreciated by employers. While we see either segmentalism or statism, these reforms have in common that collective action among business actors declines. Either, more firm-specific elements are introduced to the VET system, as in the case of segmentalism, or firms step out of training. In the latter case, public institutions look after the provision of a skilled workforce, which results in the increasing statism that characterises Austria’s skill formation system.

However, this dissertation also shows that it is possible to establish high levels of cooperation between public and private actors as the 2003 reform of Swiss commercial training and the expansion of Swiss VET to the field of ICT shows. In these cases, actors

interested in sustaining collectivism were strong enough to implement reforms that maintained the collective nature of the VET system. However, both cases also show that collective action is hard to achieve in the long run because of the cooperation dilemmas entailed in these systems, which are even reinforced by the knowledge economy.

Lastly, this dissertation shows that vocational education and training can be sustained in the knowledge economy. In order to stay competitive in an increasingly globalised and digitalised world, it is argued that corporatist economies must invest heavily in research and development activities (Breznitz, 2007; Ornston, 2012). This assumption implies that, while higher education becomes increasingly important, vocational education and training is not more than the last resort for weak or disadvantaged youths for which VET is the only way to enter the labour market. I do not object to the importance of university education and lifelong learning in the knowledge economy. However, my findings clearly show that vocational education and training can sustain in the knowledge economy, and not only as a venue for the weakest students to access the labour market but also as a point of entrance to a career for students with higher aspirations.

6.2 Limitations and Avenues for Further Research

This dissertation has generated new insights into processes of institutional change in collective skill formation systems. However, several questions are left open. In the following, I discuss the limitations of my research and present promising avenues for further research. First, while I have found that “varieties of liberalisation” (Thelen, 2014) characterise recent processes of institutional change in collective skill formation systems, I have not presented a unified theoretical framework that explains under which circumstances these varieties occur. The dissertation shows that the institutions which characterise collective skill formation systems are not as similar anymore as they were described by Busemeyer and Trampusch (2012a). Rather, we can find statism, segmentalism, as well as sustained collective action in different parts of these systems. While these findings are already substantial by themselves, I have not offered a fully-fledged explanation on when collective skill formation systems turn towards segmentalism, remain collective or increase their statist elements. Therefore, further (comparative) research on the conditions that lie behind these different developments is

needed. The comparative case study on the establishment of ICT training in Austria and Switzerland already points to one explanatory factor, namely the importance of institutional legacies as determinants of statism versus collectivism. If state actors believe in the quality of non-dual VET, they expand statist measures to circumvent collective action problems. In contrast, if they believe that apprenticeship training is the only way to provide high-quality VET, statist measures are no option or only seen as an add-on to dual training. Further research could take up this point and expand its scope also to segmentalism as one potential outcome.

Second, because of the methodological approach applied in the dissertation, the scope of my findings is restricted. I have analysed individual occupational reforms in initial vocational education and training in two collective skill formation systems, Switzerland and Austria. This case study approach raises questions about the generalizability of the findings as the number of cases analysed is very limited (Gerring, 2007). However, while I do believe in the value-added of analyses that use a larger number of cases, I am convinced that the approach used here allows me to get a more fine-grained view of how collective skill formation systems adapt to changing skill demands. The case study approach is also appropriate because the availability of large-scale data on occupational reform processes in collective skill formation systems is restricted. To my knowledge, only the database on the Swiss Organisations of the World of Work (*Organisationen der Arbeitswelt*, OdA) (Emmenegger, Graf, & Strebel, 2018) provides quantitative data on the governance of dual training systems.³¹ In order to ensure that the findings are generalisable, I carefully selected the cases. Austria and Switzerland are prototypical skill formation systems and are characterised by high levels of corporatist decision-making. In addition, commercial and ICT training is very relevant not only in these countries but in the other collective skill formation systems as well: A large number of students is trained in these occupations, and they are profoundly affected by the changing skill demands that characterise the knowledge economy. Nevertheless, further

³¹ In addition, the work by Patrick Emmenegger and myself on the systemic governance of collective skill formation systems provides a comparative description of how these systems are governed (Emmenegger & Seitzl, 2020).

research that uses a larger number of cases would be beneficial in order to gain a broader picture of recent trends in collective skill formation systems and coordinated economies more generally.

The scope of the dissertation is also limited because I have focused solely on initial vocational education and training, neglecting other parts of the vocational education and training system. As the demand for higher and further education increases due to technological change, deindustrialisation and globalisation, the question arises how relevant initial vocational education and training is in the knowledge economy. However, this dissertation shows that the initial vocational education and training system remains important for the provision of skilled labour and the inclusion of young people into the labour market. In addition, my findings indicate that other educational pathways increasingly complement initial vocational education and training, resulting in more diverse educational paths of employees. Future research should expand its focus to further vocational education and training, programmes at the nexus between VET and higher education, and lifelong learning to capture a better image of the educational background of skilled labour in the knowledge economy.

Lastly, while my research has given first insights into the question how collective skill formation systems can remain competitive in the knowledge economy, further research on the interlinkage between innovation and collective skill formation is needed. The literature on innovation in corporatist systems emphasises the importance of higher education and of research and development activities of firms and public actors in order to remain competitive in an increasingly globalised and digitalised world (Breznitz, 2007; Mazzucato, 2013; Ornston, 2012). In contrast, this dissertation has found evidence that VET can also contribute to this goal in dual training countries. However, my case studies can only be seen as a first step towards getting a broader image of the innovative potential of vocational education and training in collective skill formation systems. Further research with an expanded focus is needed. For example, while there is much predictive research about potential future skill demands, we know relatively little about what kind of skills firms actually want and what firms do in practice to meet these skill demands.

6.3 Final Remarks

Dual apprenticeships have a long history in collective skill formation systems (Thelen, 2004) and have gained global popularity in the last decade (European Union, 2010, 2015; OECD, 2020). The close involvement of labour market actors in the provision, financing, administration, and content definition of training is argued to facilitate labour market access of youths because training corresponds to labour market needs (Carstensen & Ibsen, 2019; SKBF, 2018). However, these features make collective skill formation systems especially vulnerable in the knowledge economy. Socio-economic trends such as globalisation, deindustrialisation, and technological change increase uncertainties about the benefits of training and the behaviour of other firms, “unconstrain” capital and reinforce cooperation dilemmas in collective skill formation systems (Bonoli & Emmenegger, 2020).

The findings of this dissertation indicate a trend towards declining collectivism in dual training systems. Firms are increasingly less willing to invest in the training of apprentices. This dissertation finds that the state reacts in two ways: either, it gives in to the demands of large firms and increases the share of firm-specific training content, resulting in segmentalism, or it steps in and trains young people itself, for example in full-time vocational schools or public training workshops. I also find cases where collective training is sustained.³² However, I expect that poorer economic circumstances might undermine these efforts because they will enhance the decline of employer collective action in skill formation. In light of the economic crisis that economists and policy-makers alike expect in response to the worldwide outbreak of Covid-19, the decline in the number of firms participating in the training of apprentices is likely to continue. In light of my findings, I assume that this is no good news for the collective nature of skill formation in collective training systems.

³² Marius R. Busemeyer, Martin B. Carstensen and Patrick Emmenegger (2020) argue that in these cases, the state plays an important role as an “orchestrator of coordination”.

7 Bibliography

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10/2013-09/2015	M.A. Politics and Public Administration, University Konstanz, Germany, <i>very good</i>
09/2011-12/2011	Exchange semester, Institut d'Etudes Politiques (Sciences Po), Paris, France
10/2009-09/2013	B.A. Politics and Public Administration, University Konstanz, Germany, <i>with distinction</i>

PREVIOUS POSITIONS

09/2019-12/2019	Visiting researcher Frederick S. Pardee School of Global Studies, Boston University
01/2019-12/2019	Research consultant Organisation for Economic Co-Operation and Development OECD Project <i>Strengthening the Governance of Skills Systems</i>

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07/2014-08/2014	Research assistant, Department of Politics and Public Administration, University Konstanz (Prof. Susumu Shikano)
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PUBLICATIONS

Peer-reviewed articles

- Busemeyer, M.R., & Seitzl, L. (2018). The partisan politics of early childhood education in the German Bundesländer. *Journal of Public Policy* 38(2): 243-274.
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Other publications

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