International Studies in Entrepreneurship

Mark Sanders
Axel Marx
Mikael Stenkula *Editors*

# The Entrepreneurial Society

## A Reform Strategy for Italy, Germany and the UK

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# Chapter 7
# A Reform Strategy for Germany


**Mark Sanders, Mikael Stenkula, Michael Fritsch, Andrea M. Herrmann, Gresa Latifi, Balázs Páger, László Szerb, Elisa Terragno Bogliaccini and Michael Wyrwich**

**Abstract** In this chapter, we outline a reform strategy to promote a more entrepreneurial society in Germany. Germany has developed a successful model of capitalism in which high productivity growth is driven by on-the-job learning and firm-specific skill accumulation. The economy is rooted in a strong and regionally

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embedded *Mittelstand,* which supports an export-oriented industry mainly based on incremental innovations, but which is less conducive to more radical innovation. We, therefore, suggest a reform agenda for Germany that encourages more entrepreneurial experimentation with the aim of facilitating radical innovation, both in incumbent and new firms. Germany's entrepreneurial talent should be encouraged to take on more risk, the education system could promote initiative, creativity and a willingness to experiment, and a more equal playing field between dependent employment and self-employment/employer could be created.

**Keywords** Germany · Entrepreneurship · Varieties of Capitalism · Entrepreneurial ecosystem · Entrepreneurship policy

## 7.1 Step 1: Historical Roots of Institutions and Recent Policies

### *7.1.1 United, Divided, Reunited—A Short History of Germany*

In the centuries following the rule of Charlemagne (800–814), countries such as France, Spain, England, and Habsburg Austria developed into centralized states. In contrast, the so-called Holy Roman Empire of German Nation became increasingly fragmented because rulers had to "buy" the loyalty of kings, princes, and dukes within the empire. Between the emergence of Martin Luther's critique of the Church in Rome (1517) and the Thirty Years' War (1618–1648), many German states, mostly in the North and Center, adopted the new Protestant faith while others, more Southern and Western parts of Germany, remained Catholic (Cantoni 2012).[1] Religious tensions erupted in a civil war and devastated many of the German states. When the Treaty of Westphalia ended the Thirty Years' War in 1648, the area that we know as Germany today was comprised of hundreds of sovereign kingdoms, principalities, and dukedoms.

This fragmentation lasted until the (second) German Empire was established in 1871 (Falck et al. 2011; Chickering 2014) by the Prussian chancellor Otto von Bismarck. The immediate years after the formation of Germany are historically remembered as the *Gründerzeit* (start-up boom/founding era), as the country went through a process of economic expansion, quickly followed by the first wave of bankruptcies

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[1] This has implications for entrepreneurship today. Nunziata and Rocco (2018) show that Protestants in Germany have a stronger entrepreneurial intention than Catholics under certain conditions.

known as the *Gründerkrach* (Uebele and Ritschl 2009; Burhop 2011). Germany integrated and industrialized rapidly until World War I. But Germany inherited a distinct regional variation that left traces to this day (Tipton 1976; Gutberlet 2014).[2]

The Great War imposed an enormous burden in lives lost and resources wasted. Due to the massive reparation payments imposed in the Versailles Treaty, Germany had a hard time recovering (Broadberry and Harrison 2005).[3] Hyperinflation left a lasting imprint on the German psyche in 1923 and the economic situation worsened after a few years of economic stability in the mid-1920s. The crash of 1929 and the following Great Depression led to massive unemployment, to the breakdown of leading banks in 1931 (James 1981; Kopper 2011), and fueled the rise of the Nazi movement. The economic system of the Nazi regime that seized power in 1933 was based on autarky (self-sufficiency) and the pursuit of central planning principles (Barkai 1988). Their policy strengthened a trend toward concentration and cartelization of the economy that was already observable since the late nineteenth century (Reckendrees 2003). In a time of slumping (export) demand, the fiscal expansion caused by the Nazi rearmament and public infrastructure worked and resulted in economic recovery and much needed employment, whereas autarky kept Germany relatively isolated from further shocks from abroad.

World War II led, however, to a total destruction of the German economy in the 1940s and fueled a second hyperinflation. Upon defeat, Germany was occupied by the Allied Powers (USA, UK, France, and Soviet Union) and lost one-third of its territory in the East to Poland and Russia. In 1949, the country was split into two separate states, namely the Federal Republic of Germany (FRG or West Germany), which became a Western-style market economy, and the German Democratic Republic (GDR or East Germany), a Soviet-style centrally planned economy. The Iron Curtain divided Germany for more than 40 years and the two German states evolved in distinctly different directions.

The economy of West Germany prospered in the 1950s and early 1960s, a period referred to as economic miracle (*Wirtschaftswunder*). East Germany, meanwhile, had to cope with a massive loss of economic activity as businesses relocated assets and activities, while some 1.3 million, mostly educated and entrepreneurial, people fled to West Germany (e.g., Hefele 1998; Falck et al. 2013) from 1950 until the Berlin Wall was erected in 1961. The East German economy also had to cope with massive war reparations to the Soviet Union which amounted to about 23% of the pre-war gross national product (Lieberman 1996). The West-German economy instead benefitted from the Marshall plan and global monetary stability under the Bretton Woods system, security assurances under the NATO-treaty, and trade liberalization under GATT.

[2]Some German regions, for example, long retained a primogeniture inheritance system, where in other parts inheritances were shared equally among all (male) children. This led to large estates and landed nobility in some, and a rural, entrepreneurial class in other regions.

[3]The severity of the impact of these reparations is, however, somewhat disputed in the literature (see, e.g., Hantke and Spoerer 2010).

Trends in entrepreneurship also diverged strongly. In the aftermath of the oil price shock of 1973, West Germany developed from a managed to a more entrepreneurial society, with self-employment rising to 10–12% in 1989. In East Germany, in contrast, there were several waves of expropriation driving down the rate of self-employment to 1.8% at the time of reunification (Wyrwich 2012).

The biggest challenge after reunification was the integration of the economic structures of the former East Germany into the market economy system (Hall and Ludwig 1995; Burda and Hunt 2001). There was a massive surge in start-up activity in the early 1990s and the self-employment rate in the former East Germany approached the Western level around the year 2005. At the same time, almost none of the Eastern companies that existed in 1989 were still active in the market in 2000 (Fritsch et al. 2014). Despite this massive transition and rapid convergence in self-employment, striking economic differences between both parts of the country remain until today. After a period of converging productivity levels in the first years after transition, a productivity gap of 30% still persists since the late 1990s. Massive migration and brain drain to Western Germany came to a halt only recently, and the legacy of the socialist past continues to affect people's inclinations, attitudes, principles, and behavior.[4] This legacy will last but perhaps not all of it is necessarily a barrier to growth and prosperity (former East Germany has, for example, higher female participation rates and smaller gender gaps in wages and incomes).

In conclusion, both the North-East, South-West divide between Protestants and Catholics in the seventeenth and the East-West divide between socialists and capitalists in the twentieth century are important to understand the fractionalization and regional heterogeneity of Germany today. Germany's federal political structure accommodates and consolidates this heterogeneity and helps explain the decentralized character of its entrepreneurial ecosystem(s). These deep-rooted institutional features are manifest in the institutions that govern the flow of knowledge, finance, and labor to existing and new firms alike. We discuss these in the sections below.

### *7.1.2 Institutions for Knowledge Creation and Diffusion*

The institutions that govern the generation and flow of knowledge to businesses in general and to entrepreneurial ventures in particular are founded in the educational system and the institutions doing basic and applied research. The system for registering and commercially exploiting knowledge then also deserves special mention.

[4] See for example Alesina and Fuchs-Schündeln (2007), Brosig-Koch et al. (2011), Bauernschuster and Rainer (2012), Bauernschuster et al. (2012), Corneo and Grüner (2002), Fuchs-Schündeln and Schündeln (2005, 2009), and Ockenfels and Weimann (1999).

#### 7.1.2.1 Universities

The first medieval universities emerged in Germany after the end of the Papal Schism in 1386 with the University of Heidelberg opening in the very same year (Cantoni and Yuchtman 2014). The political fragmentation of Germany at the time implied that a lot of universities were set up in smaller cities which are not necessarily big economic or administrative agglomerations today. Examples, apart from Heidelberg, are the universities in Rostock (1419), Greifswald (1456), and Tübingen (1477), but also the University in Marburg (1527), which was the first Protestant university in the world, and the University of Jena (1558). There were several further universities founded before the onset of industrialization where, like all "medieval" universities, their curriculum consisted of Greek and Latin classics and was focused on the study of the Bible. The art of reading, writing, rhetoric, and logic were important fields while ability and utility played a minor role. Universities' traditional tasks were to collect, codify, and teach general knowledge (Carlsson et al. 2009), not to develop any new or useful knowledge.

As a response to the rapid growth of the demand for scientific research and education (Carlsson et al. 2009; Drucker 1998) in the nineteenth century, Germany also saw a wave of universities founded with a technical focus and the adjustment of curricula in already existing universities. The first higher education institutions with a technical focus in Germany were founded in Karlsruhe and Dresden in the early nineteenth century, while the first natural science faculty opened at the University of Tübingen in 1863. Furthermore, there were several technical colleges, known as *Polytechnische Hochschulen* that were upgraded into technical universities around the year 1900. The main political force behind this process was the German Association of Engineers (*Verband Deutscher Ingenieure*, VDI).[5] All technical colleges that became technical universities were located in the capital cities of the federal states (König 2006; Manegold 1989). Again, the federal tradition of Germany implied that such universities were established in smaller cities and not necessarily in places that are the largest agglomerations today. In 1900, there were technical universities in Berlin and Munich but also in Karlsruhe, Dresden, Hannover, Stuttgart, Aachen, Darmstadt, and Braunschweig.

Today, there are many more technical universities in Germany. They represent a specific type of higher education institution that has relatively strong links to (often local) industry. Recent empirical evidence suggests that the entrepreneurial capacity of technical universities is not necessarily higher than that of "classical" universities (Goethner and Wyrwich 2019). But places close to, or even hosting, a technical university that was already present in the year 1900 have a higher level of entrepreneurship in high-tech industries (Audretsch and Lehmann 2005a, b; Fritsch and Wyrwich 2018). As many universities were founded in smaller places, this partly explains why

[5]The main aim of the initiatives to upgrade technical colleges was to overcome the lower social status of engineers as compared to university graduates. Moreover, upgrading technical colleges to technical universities was regarded an important means for improving the education of engineers (König 2006).

in Germany these smaller places (e.g., rural Baden-Württemberg) prosper today, even though they lack the agglomeration advantages that are found to be supportive for entrepreneurship and innovation in countries such as the USA (Glaeser 2011).

In the twentieth century, as was the case in most developed countries, there was a massive expansion of tertiary education in Germany. Therefore, there is no region without a significant university or university of applied science with a focus on educating people for the local labor market (e.g., Jaeger and Kopper 2014).[6] Moreover, the twentieth century saw the proliferation of scientific research institutes and the emergence of networks like the Kaiser Wilhelm Society (1911), the Max Planck Society (1948), and the Fraunhofer Society (1949). Their substantial (public) resources were aimed at further developing basic research with an explicit mandate to also disseminate this knowledge to industry (Gibbons et al. 1994; Beise and Stahl 1999). These networks have now grown into important pillars of Germany's knowledge infrastructure. As for most technical universities, however, the focus in these institutions has long been on serving the needs of large, industrial, incumbent firms. Initiatives to foster entrepreneurship at universities or research institutes did not exist until the late 1990s when the EXIST program was initiated in a few pilot universities.

The EXIST program followed a dual strategy. One building block was supporting universities in developing start-up culture at their institutions, while the other was providing direct assistance for individuals and start-up projects. In support of those activities, universities received a grant from the German Federal Ministry of Economics and Technology over a three-year period (e.g., Kulicke 2014). Although there have not yet been rigorous evaluations, the pilot in Berlin was considered a success, has gone through several revisions and extensions, and is still in operation today (Becker et al. 2011; EXIST 2019).

In conclusion, the German university and educational system mirror its regional decentralization, given that the federal states are responsible for education policy. There are also joint initiatives where the lead is at the federal level. The most famous program is the so-called excellence initiative that was initiated in 2006. Recent evidence suggests that this program was successful in concentrating excellent research. It also promoted collaborations between universities and the non-university research sector. However, it has not caused massive changes to the overall German research system (e.g., Möller et al. 2016). Moreover, a strong tradition of internships and vocational education provides German firms and entrepreneurs with a well-trained and educated workforce at the local level. In contrast to the Anglo-Saxon countries, however, the German university system faces challenges developing into research-oriented universities (Baker and Lenhardt 2008). Universities are mostly teaching-oriented and made universally accessible at low costs for students. This implies, however, that universities are tightly financed out of (state level) tax revenue and have a hard time attracting and retaining (global research) talent. As a consequence, differences in the quality of education and research between German universities are

[6] A university of applied sciences (UAS), also known as a vocational university or *Fachhochschule*, is an institution of higher education that grants professional degrees and is generally more focused on vocational education and applied research.

much less pronounced than in other countries such as France, the UK, or the US. A large part of top-level research takes place outside of the universities in industry and endowed research institutes such as those of the Max Planck Society.

#### 7.1.2.2 The Patent System

Germany has had regional patent systems since the eighteenth century (Harhoff and Hoisl 2007). The first Central German patent office was established in 1877, some six years after Germany became a state. The Imperial Patent Office (*Kaiserliches Patentamt*) provided uniform protection for discoveries in the German Empire. Patents were based on uniform principles and were effective for the entire territory of the German Empire. In the first 13 years of the patent law, there were between 4,000 and 5,000 patents granted per year. This number increased to 10,000 before 1906, and around 13,000 after that of which more than 10% were long-living patents (Burhop 2010). During the separation of the country after World War II, two patenting agencies coexisted, but after reunification, Germany merged them into a single patent institution again.

There have been several changes to patent law over the last 120 years. One of the important recent reforms was the *Arbeitnehmererfindergesetz* in 2001, which was a Bayh–Dole Act-like change in the German patenting system to increase the commercialization of scientific research. The results of this measure, however, are rather mixed (Von Proff et al. 2012; Czarnitzki et al. 2016). Without going into detail on the issue, this can be seen as an example where transferring legal institutions to another context leads to different, perhaps unexpected, outcomes. The USA universities, for which the Bayh–Dole Act was written, operated under a different institutional setting and consequently responded very differently than those in Germany. The *Arbeitnehmererfindergesetz* was perhaps less effective because of the already strong practice of technology transfer from academia to the corporate sector in Germany (Grimpe and Fier 2010). To achieve more commercial exploitation of public research, reforms will have to be better tailored to the German context. The problem with such tailored approaches, however, is that intellectual property rights protection has developed into an international issue. That is not a reason for Germany not to speak out. As a leading industrial nation with a lot of intellectual property at stake, Germany's voice in European and international negotiations governing intellectual property carries significant weight and will be heeded. It is in the interest of Germany to push for reforms that ensure a solid protection of industrial innovations but also ensures continued access to the more generic types of knowledge (e.g., gene sequencing) that industrial innovation builds upon.

### 7.1.3 Development of Financial Institutions

The financial system in Germany is characterized by a complex network of financial intermediaries and a, rather dominant, three-pillar banking sector. The three sets of banks comprise the private banking sector (publicly traded and held banks like Deutsche Bank and Commerzbank), the mutual or cooperative credit unions (*Genossenschaften*), and the system of public banks consisting of local savings-and-loan banks (*Sparkassen*) and the federal state banks (*Landesbanken*), respectively. The federal state banks fulfill wholesale banking services to the savings-and-loan banks, such as taking the role of regional clearing houses for liquidity and transfer liquidity from those banks with an excess liquidity to members with less. Hence, these financial institutions already have a system of joint liability like in a banking union (Hackethal 2004).[7]

Again, this situation has evolved historically. The roots of the German banking system can be traced to the Fugger family in Renaissance Augsburg (1367). The oldest, still operating bank in Germany is the Berenberg Bank founded in 1590. The fine-grained network of local banks in Germany today has its origins in the late eighteenth century (Allen and Gale 2000; Kindleberger 2015). During the nineteenth century, savings banks spread across the country. They played a decisive role in financing the industrialization of Germany. The first credit unions originated in the mid-nineteenth century. The focus of these cooperatives was on traders, shop owners, and artisans or they were set up in rural areas to serve the needs of agrarian communities. Credit cooperatives were widespread in nineteenth-century Germany and by 1914 the ca. 19,000 credit cooperatives had issued around 7% of all banking liabilities. Guinanne (2001) explains their success from their ability to make use of superior information and their capacity to impose cheap but effective sanctions on potential defaulters. These characteristics presumably permitted credit unions to lend to clients to whom commercial banks typically did not provide credits and also to develop loan terms closer to the needs of the borrowers (Flögel 2018; Flögel and Gärtner 2018).

Today, there are still 423 savings banks and 1,116 cooperative credit unions. Savings banks and credit unions typically foster close and long-term relationships with their local clients, particularly the small and medium-sized companies in which they often have seats on the corporate supervisory board (Herrmann 2020). The savings banks and cooperative banks provide about two-thirds of all lending to *Mittelstand* companies and 43% of lending to all companies and households (Audretsch and Lehmann 2016). Therefore, savings banks and credit unions are an important building block for the success of the German *Mittelstand*.[8] When it comes to innovative

[7] In addition, the federal state banks secure market funding by issuing bonds. They are also internationally operating wholesale and investment banks. Therefore, they follow a business model different from savings banks.

[8] Although there is no "official" definition of the *Mittelstand,* one can say that it comprises firms with between 50 and not much more than 500 employees where the owner is involved in the management or at least in strategic decisions (Pahnke and Welter 2018). Hence, the *Mittelstand* is part of the

new start-ups, however, banks are typically more hesitant to invest. Innovative start-ups, also in Germany, have to rely on venture capital to finance capital-intensive high-risk projects. Empirical evidence shows that the market for venture capital in Germany is functioning relatively well (Fritsch and Schilder 2008, 2012). It remains much smaller in size and scope than in the Anglo-Saxon world, but this is arguably not a supply but a demand issue (Herrmann 2020).[9]

The German financial system, with its many small and locally well-connected banks serving many SMEs across the country, has coevolved with the German economy. It serves the needs of the decentralized, export-oriented, and industrial economy of organically growing medium-sized industrial firms and *Mittelstand*. Typically, thanks to their cooperation on corporate governance boards, such firms have long-standing relationships with their banks that use the relationship and trust as collateral and security for credit.

In conclusion, despite some important challenges in flagship banks like the Deutsche Bank and the Commerzbank, the German financial system remains quite decentralized and still has a significant share of small-scale relationship banking. Thereby, it can finance incremental innovation in existing firms but is perhaps a less favorable environment for more radical innovation by new entrants as it supplies little capital in the form of equity to newcomers. The financial system thus consolidates Germany's conservatism, while underpinning its competitive strength in high-quality incremental innovation.

### *7.1.4 Labor Institutions*

The labor force in Germany is generally well trained and very productive, justifying high wage incomes while maintaining a strong international competitive position. Strong vocational education combined with on-the-job training promotes the accumulation of firm-specific human capital in Germany's small and medium-sized high-tech industrial sector (Herrmann 2020). Consensus-oriented labor relations support moderate wage growth while firm-specific human capital investments yield high productivity growth (e.g., Soskice 1990). German export-oriented firms thus remain competitive in global markets with high quality, high value-added products and services. But this peace and high level of investment are based on generous social security and stringent labor protection. It is important to realize that these institutions have long historical roots and coevolved with the German economy into highly complementary and interconnecting institutions that support its traditional competitive strength.

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SME sector. Many firms of the *Mittelstand* are family entities that have been passed on within the family for several generations.

[9]German entrepreneurs have been found to be reluctant to give up control rights and therefore prefer organic growth and private ownership over a heavy reliance on external equity finance. One could argue that this has also led to a regulatory framework that makes this type of investment less attractive (see, e.g., Fiedler and Hellman 2001; Franzke et al. 2003).

#### 7.1.4.1 Employment Protection

The German system of employment protection obtained its modern form during the period of the German miracle (*Wirtschaftswunder*) in the 1950s and 1960s in the Federal Republic of Germany. This was the golden era of the so-called *Normalarbeitsverhältnis* (standard employment relationship) which describes a dependent, permanent full-time job with strict dismissal protection, a full integration into status-protecting social insurance and collectively set wages at a relatively high level (Eichhorst and Marx 2011).

The West German system implied high wages for insiders but also led to underutilization of the labor force, which is reflected, for example, by low labor force participation of women and a male-breadwinner family model. Such a system comes under pressure when women push into the labor market (Esping-Andersen 2002), especially after German reunification where about 90% of all women in working age were full-time employees in the former East Germany (Maier 1993).[10] This system gave industrial producers a strong incentive to invest in productivity growth, but high wages and non-wage labor costs proved less suitable for developing a modern, labor-intensive service sector (Eichhorst and Marx 2011). Moreover, demographic changes put a heavy burden on the economy to finance the generous pension system. Reforms were deemed necessary to increase the utilization of all labor resources.

The change in the labor market structure, however, did not come along with a systematic flexibilization of the rigid *Normalarbeitsverhältnis*. Rather, a second-tier labor market consisting of atypical and much less protected employment (e.g., part-time work, marginal employment) emerged. Streeck (1997) argues that this pattern is explained by the German manufacturing system that is based on "diversified quality production." This model requires labor with highly specialized skills and enables workforces—thanks to their long-standing experience within one firm—to come up with incremental innovations and improvements that translate into high-quality products and specialization in niche markets. Tight employment protection incentivizes employees to invest in the necessary firm-specific skills, which would otherwise become sunk costs in case of a job loss (Herrmann 2020).[11]

In the mid-1990s, the firm size threshold for dismissal protection was raised from 5 to 10 employees (Eichhorst and Marx 2011), and Bauernschuster (2013) found a positive effect on hiring by small firms of this reform. The duality between well-protected insiders and precariously employed outsiders in the labor market, however, persists in larger firms and the new threshold still represents a penalty on employment growth.

[10]There is still an East-West gap in terms of female labor force participation in the year 2015. However, recent analyses show that only about 40% of that difference can be attributed to the effect of the socialist system (Wyrwich 2017). The rest is due to other factors.

[11]This explanation is perfectly in line with basic human capital theory (Becker 1964). See Hall and Soskice (2001) for further explanations on the relationship between employment regulation and incremental versus radical innovation.

#### 7.1.4.2 Wage Bargaining

The relatively high wage costs in Germany are also institutionalized in a system of collective wage bargaining. Unions played an important role in the first decades after World War II in West Germany and wages were collectively set (Soskice 1990).[12] There was some modest flexibilization in collective bargaining (e.g., single enterprise exceptions, the introduction of working time accounts) since the 1980s. With reunification, the West-German model was extended to the East and the system remained relatively stable for standard employment contracts (Eichhorst and Marx 2011; Dustmann et al. 2014). Despite low and declining union membership, in the 2000s, still, some 60–70% of all employees were covered by collective agreements and such coverage still implied significant wage premia (Kohaut and Schnabel 2007; Burda et al. 2008; Fitzenberger et al. 2013; Kluge and Weber 2018). The contrast between marginal workers in precarious employment and the well-protected and covered insiders has increased in recent decades (Brady and Biegert 2017). Entrepreneurs have more or less equal access to the latter pool of labor, but face high wage and non-wage labor costs when recruiting from the high-quality segments. A potentially important recent development is the broadly supported introduction of a minimum wage in 2015 of at that time EUR 8.50/h (Burda 2016).[13] Its effect on the flow of labor resources to entrepreneurship is unclear and not yet empirically investigated.

#### 7.1.4.3 Social Security

Social security also has a long tradition in Germany. The introduction of social insurance dates back to an initiative by von Bismarck in the 1880s, which implied the implementation of the first social security net in the world. The Compulsory Health Insurance Act of 1883 can be regarded as the starting point of this system. This was followed by the Accident Insurance Act (1884) and the Disability/Old-age Pension System Act (1891). Arguably, the build-up of a social security system enabled von Bismarck to pacify the threat of class struggle and create loyalty to the new state (Rimlinger 1968; Pflanze 2014). The German social security system around this time became a blueprint for Germany's current health system and was a role model for many insurance systems in other countries (Abrams 2007; Weichlein 2011; Bauernschuster et al. 2019).

The social insurance system underwent several reforms and extensions since the 1880s. Unemployment insurance was introduced in 1927. Finally, care insurance was set up in 1995. The current pension system is based on a reform in 1957 and follows a pay-as-you-go defined-benefit design. There are also state-supported private pension schemes. These were introduced in the early 2000s to make up for the demographic

[12] The wage agreements are negotiated at the sector level between labor unions and employers' associations. The negotiations are at the regional level (so-called *Tarifbezirk*).

[13] There have been sector-based minimum wages already in the 2000s. In the West-German construction sector, a minimum wage became effective in 1997.

transition that implies fewer contributors in the pay-as-you-go scheme face a growing number of retired people.

A significant reform of the unemployment insurance was associated with the "Agenda 2010." It was a shift from policies that were rather generous toward an approach with stricter job search monitoring, harsher sanctioning of unemployment provisions, and a reduction in the duration of job training. Another element of the reform was to combine the earnings-related and means-tested unemployment assistance with the social assistance (*Sozialhilfe*) into a new support system called *Arbeitslosengeld II*. This transfer can be regarded as a step toward a more universal minimum income support scheme (Eichhorst and Marx 2011). The regulation also came with new active labor market policy tools to promote start-ups by the unemployed (*Ich AG*/"Me Inc."). The evidence on the success of these measures to date is mixed (Zöllner et al. 2018). While some do succeed in leaving the program and generate an income, most of these start-ups are not very innovative and have low growth potential.

## *7.1.5 Recent Entrepreneurship Policies in Germany*

### 7.1.5.1 Entrepreneurship in Divided Germany: 1945–1989

Before reunification, the post-war "German model" can be described as a rather distinctive kind of capitalist economy that was governed by national social institutions yielding high international competitiveness despite high wages and low dispersion with respect to inequality of incomes and living standards (Streeck 1997). A defining feature of the German model is the existence of the *Mittelstand*. Audretsch and Lehmann (2016) argue that *Mittelstand* firms represent a sort of "main street entrepreneurship" of decades-old, family-owned firms with strong linkages and social ties to their local communities, including banks. These firms attract and retain specifically skilled employees, for example, by local apprentice programs. They also often have close ties with local banks providing them with financial resources. These ties are legally in the form of loans and credit, but long relations and trust enable firms to also approach banks for financing intrapreneurial ventures and innovative projects. Their products are successful in niche markets.

Public policy strongly promoted the German SMEs (including the *Mittelstand*) in the post-war period. The state-owned *Kreditanstalt für Wiederaufbau* (KfW) provided finance for the development of technological capabilities of SMEs (e.g., long-term investment loans as well as working capital loans). The KfW measures can be regarded as small business but to a much lesser extent as entrepreneurship policies. Policy programs directly targeted at start-ups played a rather minor role in the policy menu in the post-war decades.

In contrast, in socialist East Germany, *Mittelstand* and entrepreneurship were dubbed a bourgeois anachronism (Fritsch and Wyrwich 2016, p. 263). There were many outright anti-entrepreneurship policies, such as the massive expropriation of all

private industrial firms in 1972. Private business ownership was very much confined to small craft enterprises and private shops in East Germany and self-employment fell from 20.4% in 1955 to 1.8% in 1989 (Pickel 1992; Wyrwich 2012). Consequently, the *Mittelstand* had largely disappeared in the East by 1989 (Fritsch et al. 2014).

#### 7.1.5.2 Entrepreneurship and Entrepreneurship Policy after Unification

In the 1990s, the self-employment rates were steadily increasing in West Germany, partly reflecting the increased role of service but also the fundamental shift toward a more entrepreneurial society. In East Germany, the level of self-employment converged to Western levels and reached parity around the year 2005 (Welter 2007a; Fritsch et al. 2014). Interestingly, in areas that had already a high level of entrepreneurship in the pre-socialist period, the entrepreneurial catch-up was particularly pronounced (Wyrwich 2012; Fritsch and Wyrwich 2014).

Despite convergence in the numbers, however, East German businesses tend to be much smaller, even 20 years after reunification. One reason is their comparatively low levels of productivity and much lower survival rates (Fackler 2014). There are several explanations for this weakness of East German companies, ranging from unfavorable economic framework conditions to lacking managerial and entrepreneurial skills among East German entrepreneurs (Wyrwich 2013). Furthermore, East German businesses tend to have a strong focus on regional markets and their export orientation is rather low (IWH 2010; Mattes et al. 2015).

In an attempt to also support start-ups in East and West, the KfW began creating programs, such as the *Eigenkapitalhilfe-Programm* which consisted of subordinated capital for (young) entrepreneurs. In 2010, the *Bundesministerium für Wirtschaft und Energie* (BMWi) implemented *INVEST—Zuschuss für Wagniskapital* and the *Mikromezzaninfonds-Deutschland* to strengthen and develop the entrepreneurial culture of Germany. The former provides a subsidy of 20% for venture capital, whereas the latter provides specific support for unemployed persons, women, or migrants in creative industries (Audretsch et al. 2007). Bøggild et al. (2011) show that these programs yielded both an increase in competitiveness and innovativeness for subsidized start-ups as well as generated positive employment effects. Overall, BMWi-policy initiatives include the provision of information on self-employment (e.g., by participating in the *Gründerwoche Deutschland*), special measures to strengthen interest in entrepreneurship in the education system, and the improvement of the financing options available for innovative start-ups. Under the umbrella of the *Gründerland Deutschland Initiative*, the BMWi also provides an online portal to make all information available to the public and provides young ICT

entrepreneurs with means for a stay in innovative regions such as Silicon Valley under the *German Accelerator* program.[14]

In addition to these federal initiatives, the German *Länder* (states) are also quite active in developing entrepreneurship promotion programs at the regional level (Welter 2007b). In East Germany, such initiatives often relied massively on European Structural Funds which were relatively generous in view of the low GDP per capita of the East German *Länder*. It is noteworthy that there is a huge heterogeneity across the *Länder* in promoting entrepreneurship. It is particularly Bavaria in West Germany and Saxony in East Germany that developed multifaceted programs to promote innovative entrepreneurship (Fritsch et al. 2010, 2015).

Finally, at the local level, some municipalities and districts focus on the development of the entrepreneurial culture within their region. Here, the main players include business associations, chambers of commerce, economic development departments, and business development agencies. An example for local funding initiatives is the *GÖBI-fonds* (*Göttinger Fonds für örtliche Beschäftigungsinitiativen*). Established in 1997, it constitutes one of the first cases of public–private collaboration at the regional level, where banking institutions were involved. Targeting unemployed and young entrepreneurs, the *Fonds* was organized in such a way that the banks would provide the funding, while the regional government would bear 50% of the default risk and (thus) would subsidize the interest rate.

Although the three levels of policy regulation aim at closely integrating their respective instruments, inconsistencies and incoherence across these levels are a real danger. For example, most state programs do not consider part-time entrepreneurship to be desirable, arguing that this type of entrepreneurship tends to contribute little to economic and employment growth, whereas at the federal level, part-time entrepreneurship is supported and recognized as a potential first step to full-time self-employment and eventual business formation.

These programs have of course been evaluated, but it is difficult to ascertain their true impact. It would also take us beyond the scope of this chapter to attempt an assessment here. At this point, we can conclude that Germany's policy makers at various levels are clearly highly interested in promoting a more adventurous and radically innovative form of entrepreneurial venturing.

### *7.1.6 Conclusions*

Germany's turbulent history of division and unification had a big impact on the country, its institutions and inhabitants. After World War II, the entire country experienced an institutional reset: while informal institutions persisted, East and West Germany set off on diverging trajectories on formal institutions.

[14] There have been further measures within the framework of the *Gründerland Deutschland Initiative* that are not active in 2018 anymore. For example, the *Gründerwettbewerb—IKT Innovative* which consisted of a contest for young entrepreneurs in the ICT industry.

The West developed its own unique model of capitalism, with moderate wage growth, high productivity growth driven by on-the-job learning, and firm-specific skill accumulation. This supported an export-oriented industry built on the historic legacy of strongly regionally embedded *Mittelstand*, financed by a regionally branched bank-based financial system, also fueled by science and knowledge developed in technical universities as well as institutes.

In the East, meanwhile, the socialist doctrine led to the destruction of the *Mittelstand*, while massive migration to the West before the building of the Wall contributed to depriving East Germany of a significant part of its entrepreneurial talent. Importantly, the experiment with central planning failed and the East German economy collapsed, whereas the West grew into the economic powerhouse of Europe.

Now, at 30 years after reunification and in spite of enormous efforts, the socioeconomic gap between East and West Germany has still not been bridged (Canova and Ravn 2000; Lindner 2017; Mertes 2018; Verheyen 2018). Against this backdrop, it is impossible to treat Germany as a blank canvas. Hence, we suggest policies and reforms that fit its historical heritage, consider its federal character and multi-level governance, and build on Germany's strengths in order to address weaknesses within the German entrepreneurial ecosystem. To identify these weaknesses, the next section turns to the present and examines current data.

## 7.2 Step 2: Data Analysis with REDI for Germany

### *7.2.1 Germany's International Position*

To get a first impression of Germany's relative performance as an entrepreneurial ecosystem, we turn to the Regional Entrepreneurship and Development Index (REDI). For calculating an overall country score, we used the population weighted regional REDI-scores. Out of the 24 EU countries for which we have this regional data, Germany ranks seventh with 51.1 points between Finland and Austria, behind Ireland, the Scandinavian countries, The Netherlands, and the UK, but ahead of France and all the Southern and Central European countries (Table 3.3, Varga et al. 2020). This implies that the German competitive position in the European Union is supported by its strong, regionally embedded *Mittelstand* and incremental innovation system (Audretsch and Lehmann 2016). To identify where reforms would help to improve its performance, however, we need to delve a little deeper into where the entrepreneurial ecosystem in Germany could be improved.

The REDI is composed of 14 underlying pillars that together make up three subindices, namely (1) Entrepreneurial Attitudes, (2) Entrepreneurial Abilities, and (3) Entrepreneurial Aspirations (Acs et al. 2014; Szerb et al. 2017, 2019). Figure 7.1 gives us a first glance at how Germany is performing relative to the UK, Italy, and the EU average on these 14 pillars. The data show that Germany overall performs better

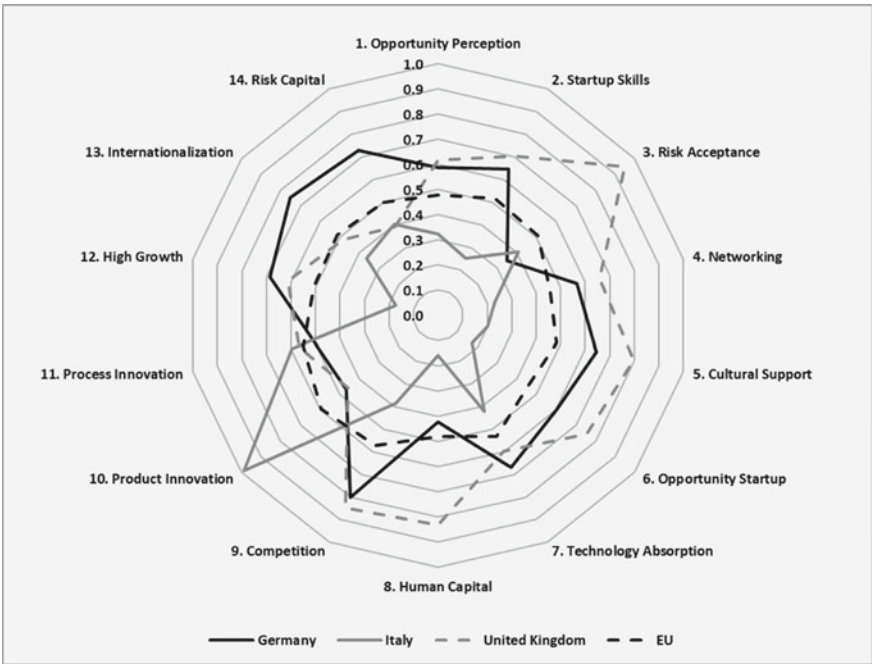


**Fig. 7.1** Radar-plot REDI comparison Germany–Italy–UK and EU-average. *Source* Authors' own compilation

than the EU average and only slightly underperforms the EU average on four pillars, namely "Risk Acceptance," "Human Capital," and, perhaps surprisingly, "Product," and "Process Innovation."

The underlying algorithm in the REDI puts a penalty on bottlenecks in the ecosystem (Acs et al. 2014; Szerb et al. 2017), such that a rounder radar-plot scores higher than a more erratic one. This reflects the intuition that all pillars in the index are complementary and the ecosystem is only as effective as its weakest link. To increase the REDI-score and improve the ecosystem performance, policy interventions should therefore be aimed at alleviating bottlenecks with priority. For Germany, and based on the data, one would conclude that improving the "Risk Acceptance," "Human Capital," "Product Innovation," and "Process Innovation" pillars is most urgent.

### *7.2.2 A More Detailed Regional Quick Scan*

A national-level analysis, however, will hide a lot of regional heterogeneity. Bottlenecks in Hamburg and Berlin may well prove to be very different from the bottlenecks in Brandenburg and Hessen. Before we draw too strong a conclusion on how

to improve the German entrepreneurial ecosystem, let us therefore zoom in at the regional level.

In Fig. 7.2 and Table 7.1, we observe that there is quite some variation among German regions. The REDI-scores range between 35 (Brandenburg) and 70 (Hamburg).[15] The map and table illustrate that even at this low spatial resolution, the aggregated REDI-scores capture quite a bit of the regional heterogeneity.

Without going into technical details in this chapter, the intuition behind each of the pillars is that data on individual entrepreneurial agency (taken from the Global Entrepreneurship Monitor adult population survey data) are combined with relevant institutional quality indicators (taken from a wide variety of reputed international

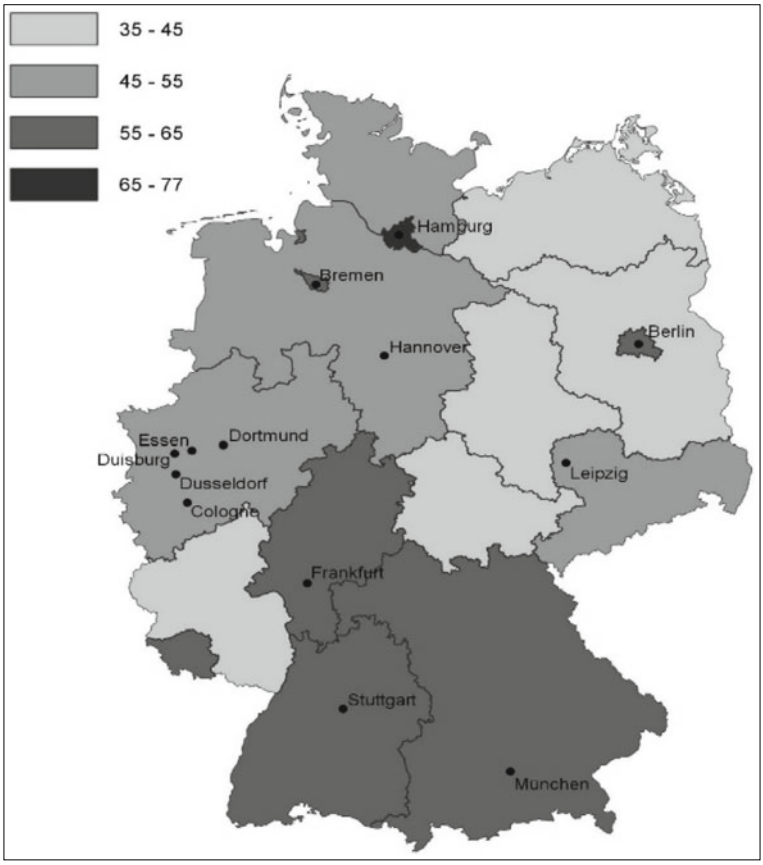


**Fig. 7.2** REDI map of German NUTS2/3 regions. *Source* Authors' own compilation

[15]The numbers are index numbers ranging from 0 (worst) to 100 (best) across all 125 European NUTS2/3 regions for 2012–2014.

**Table 7.1** REDI-scores Germany

| Region | REDI-scores 2012–2014 |
|---|---|
| Baden-Württemberg | 62.0 |
| Bayern | 60.6 |
| Berlin | 62.4 |
| Brandenburg | 35.1 |
| Bremen | 57.1 |
| Hamburg | 69.5 |
| Hessen | 58.9 |
| Mecklenburg-Vorpommern | 40.2 |
| Niedersachsen | 50.3 |
| Nordrhein-Westfalen | 54.8 |
| Rheinland-Pfalz | 44.6 |
| Saarland | 56.7 |
| Sachsen | 50.5 |
| Sachsen-Anhalt | 38.2 |
| Schleswig-Holstein | 49.8 |
| Thüringen | 41.1 |

*Source* Authors' own compilation

institutions, such as the World Bank, Freedom House, and OECD).[16] The index then builds on the assumption that institutions and individual agency are complements (Acs and Szerb 2009; Acs et al. 2014). That is, for example, high levels of Opportunity Perception in a low-quality institutional environment will contribute little. Likewise, low Opportunity Perception in a high-quality institutional environment is also a sign of weakness in the entrepreneurial ecosystem. To improve the score on a given pillar, policies and reforms should seek to improve the weakest link and then aim to increase both institutional quality and individual agency together. Especially because of the latter, the menu of effective interventions is not limited to improving the scores on the institutional quality indices alone. The same logic is then also imposed on the individual pillars that make up the three subindices: Attitudes, Abilities, and Aspirations.

For all the *Länder*, we have identified those three pillars that are holding back the respective *Land* most. We then compared the *Länder* and identified the most common weak spots in regional ecosystems. The results, presented in Table 7.2, provide some clear-cut insights.

Across the best and the weakest entrepreneurial ecosystems in Germany, bottlenecks seem to arise most frequently with regard to Business Risk, which will reduce the score on Risk Acceptance and thereby Entrepreneurial Attitudes. On Entrepreneurial Abilities, the overall scores are decreased by low Human Capital

[16] We refer interested readers to Szerb et al. (2017) and the technical annex to Acs and Szerb (2016) for further details.

**Table 7.2** Weakest points per region

| Region | Weakest pillars | Weakest variables |
|---|---|---|
| Hamburg | 3, 8, 11 | Business Risk, Education and Training, and New Technology |
| Schleswig-Holstein | 3, 8, 10 | Business Risk, Education and Training, and New Product |
| Bremen | 3, 8, 13 | Business Risk, Education and Training, and Exports |
| Niedersachsen | 3, 7, 10 | Business Risk, Technology Level, and New Product |
| Nordrhein-Westphalen | 3, 8, 11 | Business Risk, Education and Training, and New Technology |
| Rheinland-Pfaltz | 3, 8, 10 | Business Risk, Education and Training, Educational Level, and New Product |
| Hessen | 3, 8, 10 | Business Risk, Education and Training, and New Product |
| Saarland | 3, 8, 11 | Business Risk, Risk Perception, Education and Training, and New Technology |
| Baden-Württemberg | 3, 8, 10 | Business Risk, Education and Training, and New Product |
| Bayern | 3, 8, 10 | Business Risk, Education and Training, and New Product |
| Thüringen | 1, 8, 11 | Market Agglomeration, Education and Training, Educational Level, and New Technology |
| Sachsen-Anhalt | 1, 8, 10 | Market Agglomeration, Education and Training, and New Product |
| Sachsen | 3, 8, 10 | Business Risk, Risk Perception, Education and Training, and New Product |
| Brandenburg | 3, 7, 10 | Business Risk, Technology Level, and New Product |
| Berlin | 3, 8, 10 | Business Risk, Education and Training, and New Product |
| Mecklenburg-Vorpommern | 1, 8, 14 | Market Agglomeration, Education and Training, and Informal Investment |

*Source* Authors' own compilation

scores due to a lack of Education and Training, whereas a lack of New Product or New Technology in Product or Process Innovation generally holds back the overall performance on Entrepreneurial Aspirations. Despite significant heterogeneity across the German *Länder*, there certainly seems to be room for national-level interventions and reforms in these areas.

At the regional level, the *Länder* may well add specific interventions to strengthen specific regional weaknesses and bottlenecks, given in particular that it does not seem necessary to equally develop all pillars in all regions.

### *7.2.3 Overall Conclusions of the REDI Analysis*

Our interpretation of the data above reveals that in all German *Länder,* and the country as a whole, the main bottlenecks in the entrepreneurial ecosystem are a limited willingness to take risk (Business Risk), an education system that can be improved (Education and Training), and a lack of radical innovation (New Products and Technology) that feeds back into a low familiarity with ambitious entrepreneurship.

As the simulation exercises in Varga et al. (2020) have shown, improving the scores on REDI in Germany would have positive effects on productivity and well-being in all regions, even if some would benefit more than others. At this point, however, it is not quite clear exactly how one could go about engineering such an improvement in the German entrepreneurial ecosystems. We know it is the bottlenecks that hold down scores, and consequently, improving on those is probably the most cost-effective way of improving the system as a whole. But a lot of research remains to be done on how exactly policy interventions and reforms would affect the various variables and pillars underlying REDI.

Moreover, it is not advised to draw conclusions exclusively on the basis of data and aggregate indices, even if they are composed of a broad set of sub-indicators. It is not yet clear from the data exactly what could be done to improve the situation or how interventions could be made to fit local specificities. Only after triangulating the results above with the historical analysis, literature review, expert judgment, and qualitative survey results below, we can map propose tailored reforms for Germany.

## 7.3 Step 3: Triangulating History, Data, and Survey Results

### *7.3.1 Venture Creation Processes in Germany*

As illustrated in Herrmann (2020), we assessed the impact of Germany's institutional ecosystem upon entrepreneurial activities from both a static perspective (based on multiannual averages) and from a process-oriented perspective. Both sets of analyses provide similar and complementary results. The static analyses confirmed that entrepreneurs in Germany have a tendency to set up incrementally innovative ventures rather than to develop ventures based on radically innovative technologies or the imitation of existing business ideas (Dilli et al. 2018; Herrmann 2019).

The dynamic analyses, in turn, revealed how Germany's institutional environment influences different aspects of the venture creation process. With regard to human

capital, we find that entrepreneurs in Germany, who begin to set up their ventures in part-time, are less likely to transition to full-time entrepreneurship than their counterparts in the UK or the USA. The reason seems related to Germany's regulated labor market which, in case of venture failure, makes it rather difficult for entrepreneurs to obtain a position in dependent employment. Entrepreneurs are reluctant to give up dependent employment and set up their ventures in part-time (Held 2019). In addition, entrepreneurs in Germany are unwilling or unable to hire employees and rather engage external service providers in order to access qualified labor (Held et al. 2018c).

With regard to the process of finance acquisition, Held et al. (2018a) find that various venture characteristics influence the type of funding which nascent venture acquire first and, respectively, most. These characteristics include the type of good that a venture develops, its product's novelty, size, industry, but also its institutional environment. With regard to the latter, Germany's entrepreneurs are particularly likely to make up for a low stock market capitalization by seeking debt finance, making use of the well-developed banking system instead (Held et al. 2018a).

Finally, we also find that nascent ventures in Germany are more likely to engage in R&D collaborations with external partners, such as universities and labs, than nascent ventures in the UK or the USA. The reason for this seems to be that nascent ventures are reluctant to engage in joint R&D projects whenever the institutions governing inter-firm collaborations make the outcome of lawsuits in case of IP conflicts rather unpredictable (Held et al. 2018b).

Taken together, these studies suggest that Germany's distinct finance, labor, and R&D-related institutions lead entrepreneurs to focus on incrementally innovative business ideas.

### *7.3.2 Regulatory Barriers to Entrepreneurship in Germany*

To examine regulatory barriers to entrepreneurship, we conducted interviews with 313 founders in Germany, between 2015 and 2018. Table 7.3 provides an overview of the answers given to the question: "Which regulatory requirements did you perceive as major obstacles during venture creation?" coded to also compare the answers across countries. The table suggests that an important number of German founders did not feel constrained by regulatory barriers. Among those regulatory obstacles that were mentioned most, founders often pointed to difficulties with various aspects of administrative processes. With regard to the acquisition of labor, capital, or knowledge, only very few founders pointed to the problem of "high taxes" which, in turn, might indicate that founders considered financial constraints less important.

These findings are overall in line with the REDI analysis which indeed indicated that regulatory barriers were not the most pressing problem. In contrast, other sources and rankings, such as the World Bank's Doing Business Index (World Bank 2018a), mention regulatory barriers to starting up as a matter of concern in Germany. Part of the answer to this paradox could be that regulatory barriers are significant in Germany

**Table 7.3** Results survey on regulatory obstacles in Germany

| Which regulatory requirements did you perceive as major obstacles during venture creation? | Times mentioned | In % |
|---|---|---|
| None | 130 | 41.0 |
| Does not answer question | 32 | 10.1 |
| Stringent environmental regulations | 18 | 5.7 |
| Regulatory requirements for buildings | 12 | 3.8 |
| Bureaucracy in general | 11 | 3.5 |
| Specific requirements related to energy sector | 10 | 3.2 |
| Legal requirements for approval | 10 | 3.2 |
| Onerous requirements for documentation | 10 | 3.2 |
| Tax laws in general | 8 | 2.5 |
| Legal requirement to be member of IHK | 7 | 2.2 |
| Lengthy approval process | 5 | 1.6 |
| Registration procedure | 5 | 1.6 |
| Difficulties with obtaining finance | 5 | 1.6 |
| Employment regulations which hamper ability to hire employees | 5 | 1.6 |
| High taxes in early phases of venture creation | 4 | 1.3 |
| Legal initial capital requirements | 4 | 1.3 |
| Constantly changing regulatory environment | 4 | 1.3 |
| Difficulties with transition of legal form | 3 | 0.9 |
| Insecurity about details of law | 3 | 0.9 |

*Note*
1. Based on interviews with 313 founders mentioning 317 obstacles (more than one obstacle could be mentioned)
2. Only obstacles mentioned three times or more are reported in the table
*Source* Authors' own compilation

but perceived to be justified and unproblematic by the founders that actually overcame them. Moreover, strict regulation, provided it is clear and fair, can also prevent the entry of less viable and low-quality entrepreneurs (Stenholm et al. 2013).

When looking at the top-10 obstacles more closely, we see that founders confirm the problem of a cumbersome bureaucracy. But only some (<5%) mention bureaucracy and complicated legal and regulatory requirements as a real obstacle to start a firm. From our survey, we thus get the impression that barriers to entry in Germany could be alleviated by reducing the administrative requirements for venture creation. That is confirmed by the fact that Germany ranks 113 out of 190 in the World Bank (2018a) Doing Business Index on "ease of starting a firm."

### 7.3.3 Founders' Suggestions for Reforms in Germany

In the same survey, founders were also asked: "What can policy makers do to facilitate venture creation?". An overview of the answers to this question is listed in Table 7.4. While an important share of the founders interviewed still thinks that policy makers cannot facilitate venture creation, the most common suggestions point to measures of financial support. This is remarkable in light of the fact that financial barriers were rarely mentioned as a regulatory obstacle. Similarly, financial constraints do not come out very strongly in the data analyses of Sect. 7.2 nor in the historical analysis of Sect. 7.1.

Two other suggestions stand out. In slightly different wordings, the founders suggest a simplification of procedures, which in itself need not make regulations less tight, only more transparent and easier to follow. And, again, in different ways, they argue that the government could promote venture creation by allowing founders to benefit more from the venture they create. Although, not strongly and perfectly, Germany's founders clearly identified some of the same weaknesses in the entrepreneurial ecosystem that our above data analysis revealed. Recall that the weaknesses of the REDI analysis revealed a low score on the pillars "Risk Acceptance," "Education and Training," and "Product Innovation." The founders' suggestions about better networking opportunities, the stimulation of a more entrepreneurial culture, and general need for more support resonate with those weaknesses, but the founders did not mention a lack of knowledge, absorptive capacity, or a lack of new product and process technology. The latter might be explained by survival bias in sampling, such that the surveyed founders may find themselves in a vibrant entrepreneurial scene and perceive a strong ecosystem where only external constraints hold venturing back. Interestingly, the survey reveals founders' frustration with the regulatory framework and bureaucracy that the REDI-analysis is ill equipped to reveal.

Rather unsurprisingly, the policies suggested are all action-oriented, whereby financial instruments are typically top-of-mind, also for founders. This may explain the high share of recommendations that suggest to supporting start-ups and new ventures financially—even though capital did not seem to be a major barrier to venturing in Germany in the REDI analysis. Those founders signaling a lack of information and training and calling for a more stable policy environment can be interpreted in support of a more fundamental reform approach that creates institutional support for those providing such services and knowledge.

When calling for lower taxation and higher financial support for founders, we should of course be very cautious. Nobody likes to pay taxes, and founders are no exception. Still, perhaps founders' complaints are not unjustified in this case. Even if Germany's founders strongly benefit from a public-funded infrastructure—including, for example, a well-developed transportation system, public incubators, and entrepreneurial support programs like the EXIST initiative—the level of taxation and social security contributions out of total profits is estimated to be about 50% (World Bank 2018a) in Germany, and on "paying taxes" Germany ranks 41 out of

**Table 7.4** Results survey on suggested policies in Germany

| In your view, what could policy makers do to facilitate venture creation? | Times mentioned | In % |
|---|---|---|
| Nothing | 37 | 9.5 |
| Does not answer question | 30 | 7.7 |
| Facilitate financing for small businesses | 89 | 22.9 |
| Reduce bureaucracy | 39 | 10.1 |
| Avoid constant policy changes | 28 | 7.2 |
| Provide competent advice to people starting businesses | 24 | 6.2 |
| Improve situation specific to energy sector | 23 | 5.9 |
| Reduce tax rates for small businesses | 20 | 5.2 |
| Provide better information about how to start a business | 18 | 4.6 |
| Provide better training to people for starting businesses | 13 | 3.4 |
| Simplify tax laws | 12 | 3.1 |
| Clear regulations | 10 | 2.6 |
| More flexible tax law adjustable to liquidity of start-up | 10 | 2.6 |
| Provide guidance | 9 | 2.3 |
| Provide incentives for hiring people | 9 | 2.3 |
| Reduce costs | 9 | 2.3 |
| Financial benefits for founder | 9 | 2.3 |
| Facilitate procedures for approval | 8 | 2.1 |
| Create feeling of support for entrepreneurs | 5 | 1.3 |
| Abolish compulsory membership in IHK | 5 | 1.3 |
| Reduce initial capital requirement | 4 | 1.0 |
| Offset risk of starting business | 4 | 1.0 |
| Simplify regulatory requirements for buildings | 4 | 1.0 |
| Simplify venture creation process | 3 | 0.8 |
| Provide better networking opportunities | 3 | 0.8 |
| Create entrepreneurial culture | 3 | 0.8 |
| Adjust tax system to encompass start-ups | 3 | 0.8 |
| Help market start-ups | 3 | 0.8 |
| Ease environmental regulations | 3 | 0.8 |

*Note*
1. Based on interviews with 313 founders mentioning 455 suggestions (more than one suggestion could be mentioned)
2. Only suggestions mentioned three times or more are reported in the table
*Source* Authors' own compilation

190. Concerning financial support for founders, there are already quite a lot of public programs for entrepreneurship and it is doubtful whether even more support would be helpful.

### *7.3.4 Conclusions*

The analysis in this section confirms some, but not all of the weaknesses identified in the REDI analysis completed in Step 2. Moreover, it provides some revealing additional insights, for example, the need to create a stable regulatory framework, and the suggestion that overall taxation on new ventures is perhaps too high. Such information is hard to gather from quantitative data or historical analyses. The more qualitative analysis presented in this step was therefore useful to complement the results obtained in Sects. 7.1 and 7.2. But given the limited perspective that most founders have, the proposed interventions typically fall in the "inform, deregulate, subsidize-more and tax-less" approach that has characterized entrepreneurship policies around the world already for decades. When asked for the most important barriers and additional policy measures, it is only logical that founders would mention those barriers and proposals that they perceived as most important in their personal experiences and direct environment. There certainly is valuable information in that experience. But as a guide to policy, this is not sufficient, as is an approach based on history or aggregate data only. The true value of this information is revealed when combined with information from other sources. Together, the insights gained from triangulating our historical, quantitative, and qualitative information on Germany now reveal enough information to formulate a "diagnosis" for Germany and propose our "treatments."

## 7.4 Step 4: Mapping onto the FIRES-Reform Proposals

Formulating a reform strategy to strengthen the entrepreneurial ecosystem is similar to treating a patient. In the previous sections, we have considered the medical history of the patient, used advanced diagnostic tools to scan for her health problems, and asked the patient how they feel and what they believe would be a good treatment. Based on this information, we can now come up with a diagnosis and map this diagnosis onto the menu of available treatments in order to propose a treatment that fits the patient.

In general, Germany boasts a strong entrepreneurial ecosystem. Like in most other countries, there are hotbeds of entrepreneurship in major cities alongside more rural regions. The geographic resolution of our data reveals that Germany's entrepreneurial talent and resources arguably tend to cluster in its major cities. But given that these

cities are themselves spread across the country, this is also the case for entrepreneurship in Germany. Our quantitative data analyses suggested a large regional heterogeneity in entrepreneurial ecosystem performance, whereas for the country as a whole or the regions affected, this does not necessarily constitute a problem.

The results from the surveys do not suffer from this problem and confirm that the challenges and bottlenecks in the German ecosystem are indeed not formidable. Founders suggested that regulation makes the founding of new ventures difficult, especially in green tech and renewable energy sectors. This is confirmed in Germany's rankings on traditional indicators like self-employment and firm formation, especially in high-tech sectors. These show that Germany is lagging in an international comparison. But these concerns do not seem to be overly problematic. Importantly, founders did not complain about a lack of funding, skilled personnel, or knowledge. The data analysis does however reveal that German entrepreneurship is less risk seeking than in the Anglo-Saxon world. New ventures in Germany score comparatively low in radically new products and technology as well as in risk acceptance. Moreover, the rates of self-employment and start-up activity in Germany have been declining and this might be worrisome to a country that is already scoring low on these indicators. Incremental innovation is routine in German industry, but the pillars related to more radical innovation seem the weakest links in an otherwise well developed and functional entrepreneurial ecosystem. This diagnosis roughly holds for the country as a whole and the individual *Länder* separately.

Admittedly, though, it is not easy to change all these aspects together. German preferences for well-designed and (over)engineered solutions, an emphasis on quality over price and a dislike for disruptive technologies that might challenge incumbent firms and unsettle long-grown business relations, are deeply entrenched in the German culture. Furthermore, these even constitute the core of a carefully built and cherished "made in Germany" brand and reputation. It is thus important not to advise our "German patient" to become a person they are not and do not want to become. Still, a little more adventurous spirit would not hurt and more likely improve Germany's position *vis-a-vis* the competition from East-Asian tiger economies that rival its industrial and engineering dominance. Hence, making it easier to start (and end) a venture and supporting radically innovative entrepreneurship financially could go a long way in improving the entrepreneurial ecosystem in the country and its *Länder*.

Taking these general prescriptions to the menu of policy interventions and reform proposals in the companion volume of this book (Elert et al. 2019), we have selected fifteen suitable interventions for Germany. They are listed in Table 7.5. In Column 1, we find the number under which they were presented in Elert et al. (2019). Column 2 lists the title and Column 3 the proposal, whereas Column 4 gives a brief motivation for the case of Germany tying in with the analysis presented above.

The first proposal (2) refers to intellectual property. We think it is in the interest of the German entrepreneurial society that access to knowledge remains open. Germany is traditionally strong in developing generic knowledge into specific products and services, and IP protection should protect the latter, not the former. But as IP is beyond the competencies of even national authorities, our proposal here is to be

**Table 7.5** The FIRES-reform proposals for Germany[a]

| No. | Policy area | Proposal | Germany |
|---|---|---|---|
| 2 | Intellectual property | Limit the breadth, width, and span of patent protection to cover working prototypes and market-ready innovations only for a short period of time and permit economic actors to infringe upon patents that have not been commercialized. | This is an international issue, but it would certainly help if Germany were to advocate this at the appropriate levels, because Germany is an important player in this field. It may, at first sight, go against the interests of a country that patents a lot. But this will stimulate commercialization also in Germany. |
| 9 | Wealth taxation | Harmonize and reduce taxes on private wealth, private wealth transfers and inheritance if productively invested. | The transfer of wealth across generations, especially in the form of business assets, is a major issue in the family-firm dominated *Mittelstand* in Germany (Ellul et al. 2010; Getz and Peterszen 2004). By reducing taxation on private wealth transfers, the transition of ownership across generations is easier and this also frees up more so-called triple-F finance in Germany. |
| 17 | VC | Reduce barriers to the sale, acquisition, and IPO of VC-funded start-ups to facilitate profitable exits. | Germany does not seem to suffer from a direct lack of VC funds, but the market remains small because of low demand. We propose to stimulate this market by strengthening the pull-factors as direct subsidies in these circumstances will only cause too much cheap money chasing too few projects. |
| 19 | Banks | Increase the mandatory equity ratio in banking gradually to 10–15% to allow them to take on more risk responsibly in their lending portfolios. | European and international minimum standards are applied in Germany, but allow for rather low reserves and high leverage. Deutsche Bank was branded the worlds' riskiest bank by the USA FDIC in 2016 (Hofbauer et al. 2017; Moshinsky 2016). Financing entrepreneurship simply requires more loss-absorbing capacity in banking. |
| 21 | FinTech | Implement a light-touch regulatory regime for equity crowdfunding and peer-to-business lending. | German crowdfunding regulation introduced in 2015 is relatively conservative. The arguments are all about stability. We would encourage experimentation with this new form of finance under tight supervision, but loose regulation. |

(continued)

**Table 7.5** (continued)

| No. | Policy area | Proposal | Germany |
|---|---|---|---|
| 23 | Employment protection | Relax the stringency of employment protection legislation for permanent contracts. | Germany ranks fourth for permanent and forty-fourth for temporary contracts protection in the OECD ranking. The gap is huge. Some labor protection is needed to maintain the high levels of firm-specific human capital (e.g., Hall and Soskice 2001), but that cannot justify the gap with temporary workers. The way forward would be to close the gap by bringing protection for permanent contracts down where responsible, and award temporary work more protection where needed to level the playing field. |
| 27 | Social security | Carefully consider the impact of flexicurity reforms on young firms and do not force them to take on excessive risks and burdens. | Many of the flexicurity reforms tend to put administrative or financial burdens and risks on firms that work as a deterrent to hire and/or as a penalty on growth. In reforming the labor market, policy makers should take a dynamic view of entrepreneurship and realize that successful firms need to grow. |
| 29 | Social security | Ensure full portability of social security entitlements by making them independent of tenure at a specific employer. | Labor market mobility in Germany is relatively low. It seems that in Germany this is also due to the "orderly" educational system that sets people on a very predictable career path. Linking social security entitlements to jobs is perhaps a consequence as much as a cause but it is a good place to start. |
| 31 | Active labor market policy | Establish or strengthen training programs to prepare workers for new occupations. | Labor market mobility in Germany is relatively low. On-the-job training for mobility has to be publicly funded or funded by employees as we cannot expect employers (let alone start-ups) to invest in mobility. |
| 32 | Entry barriers | Excessive barriers to new business formation and new entry should be lifted where possible. | The survey above clearly indicates founders think bureaucracy and regulation are a barrier to business formation and the Doing Business Index of the World Bank (World Bank 2018b) ranks Germany 113 out of 190 in ease of starting a business. Compared to Georgia, at 20% below the global frontier and not improving as fast (World Bank 2018c). |

(continued)

**Table 7.5** (continued)

| No. | Policy area | Proposal | Germany |
|---|---|---|---|
| 37 | ICT | Invest in excellent, open-access digital infrastructure for European citizens and businesses. | Providing such an infrastructure would promote scaling of new digital ventures and high-tech services (Baller et al. 2016). Germany ranks 15 out of 139 in the Networked Readiness Index, down from 13 and below the Nordics and UK. As this is a fertile ground for new firm formation, Germany could invest here to promote a more adventurous entrepreneurial ecosystem without jeopardizing upsetting its existing routine innovation paradigm in manufacturing. Strong improvements could also be made to the digitalization of public administration. |
| 39 | Insolvency | Insolvency regulation should protect ventures that are inherently healthy and promising and allow for a quick and ex-ante transparent liquidation of those that are not. | This proposal ties in with the Business Risk Acceptance and Fear of Failure, but this necessarily is a long run intervention. Only by signaling strongly to society that failure in business is acceptable, can cultural attitudes gradually become more supportive. German bankruptcy law seems overly stringent. |
| 41 | Education system | Reforms in primary and secondary education should provide pupils with a solid and coherent knowledge base and promote initiative, creativity and a willingness to experiment. | If we combine German performance on PISA scores and low scores on education and training plus need for more risk acceptance in the REDI-data analysis, it is clear that also in the educational system reforms are desirable. The government has put quite a few programs in place in the 2000s already and reform fatigue may be an issue, but a focus on creativity and out-of-the-box thinking remains urgent (Rothman 2017). This proposal is of course complicated by the fact that educational policy in Germany is largely a competence of the federal states. |

(continued)

**Table 7.5** (continued)

| No. | Policy area | Proposal | Germany |
|---|---|---|---|
| 45 | Universities | Both the EU and its member states should create healthy, well-funded, academic institutions that allow Europe's most talented academics to pursue their research interests. | For Germany, this should be interpreted as a call for increasing the public funding for universities in particular. These institutions have a strong educational focus in Germany as it is and spending per student has declined (Füller 2017) to €9,000 per students which is less than the OECD average of €10,400. Underinvesting in academic teaching and basic research jeopardizes the knowledge base in the long run. Again, federal state and national politicians need to closely collaborate to address this issue in Germany. |
| 48 | Innovation policy | Develop highly competitive programs encouraging small businesses to engage research and development with the potential for commercialization. | Germany's unique legacy of a decentralized, innovative, and well-funded *Mittelstand* gives it a unique strength to build on. If its *Mittelstand* firms can be engaged in somewhat more risky innovation, Germany can strengthen and maintain its competitive position in the world in a way that will be hard to copy in other places. |

[a]Numbered as in Elert et al. (2019)
*Source* Authors' own compilation

interpreted as a suggestion to raise the issue at the appropriate governing bodies and treaty negotiations.

The proposals in taxation and financial regulation (9, 17, 19, and 21) lie clearly within national competencies. They serve the dual purpose of mobilizing more capital for riskier, perhaps more radically innovative ventures and increasing the financial rewards for such venturing and investing in it. Here, we propose a different approach than the founders, whom in our survey called for more public funding and financial support. Instead, we believe that mobilizing the so-called triple-F finance by family, friends and fools, can be promoted by allowing for more wealth to accumulate and be transferred among private individuals.

Proposals on social security and labor market regulation (23, 27, 29, and 31) all aim to mobilize Germany's most knowledgeable and valuable employees. Portability of social security entitlements across jobs, sectors, and labor market statuses will reduce the lock-in of skilled labor in gilded jobs and reduce the barriers for employers. Also, this portability creates a level playing field for start-ups on the demand side and for marginalized groups on the supply side of the labor market. This will make growth in Germany more inclusive and equitable as well as more innovative.

A third group of proposals (32, 37, and 39) intends to improve the regulatory situation for start-ups and founders both at the start and possibly the end of their

venture, as well as strengthen the digital infrastructure of Germany. The latter is an essential and vital infrastructure for platform-based services that account for most spectacular new firm formation in the world today.

Finally, a group of proposals (41, 45, and 48) suggests reforms to make Germany's strong knowledge generation sector more open to entrepreneurs penetrating the knowledge filter (Acs and Plummer 2005), and particularly for more radical ideas. The promotion of creativity and experimental mindsets in primary and secondary education will support this shift in the long run. Policies to support innovation in SMEs will have to be designed in close cooperation with knowledge-intensive firms in Germany, whereas greater investment in higher education and basic research is a proven recipe for improving the quality of life in the long run.

The proposals individually and in combination aim not only at making German entrepreneurs more adventurous and change their environment in ways that such adventures are rewarded more if successful and punished less if a failure. In addition, the proposals focus more directly on allowing these more adventurous entrepreneurs to start a venture with less administrative hurdles and to grow them with capital, labor, and knowledge for which they can compete on a more level playing field. These reforms would have to be implemented while keeping sensible and important regulations in place to screen out business models that add no social value.

It is likely that, even though all German *Länder* stand to benefit from these interventions, the fact that density and clustering tend to promote the quality and impact of entrepreneurial venturing will imply that the same policy improvements will benefit already prosperous cities and regions most. Still, that should not stop policy makers from pursuing these interventions as it is the well-being of German citizens, not the GRP of its administrative units per se, that the national government should primarily care about. In addition, Germany has effective automatic transfer schemes that will help maintain a high quality of life throughout the country, even if the available entrepreneurial resources are attracted to, and deployed in, only parts of the territory.

## 7.5 Step 5: The FIRES-Reform Proposals in Light of the Countries' Historical, Geographical, and Institutional Context

To put our proposed reform program in context, it is important to discuss the diagnosis and proposed treatments with experts in the field. Moreover, given the wide diversity of policy areas involved, it is important to not only discuss this with policy makers that are active in "entrepreneurship policy" in the narrow sense. Our approach emphasizes the importance of reforming institutions that determine the allocation of financial, labor, and knowledge resources to entrepreneurial activity in the broadest and most inclusive sense of the word. Entrepreneurship policy, in the narrow sense, has been in place for more than three decades and, to date, seems to have achieved only limited success.

Because of its breadth, our reform agenda inevitably cuts across many policy areas traditionally less associated with entrepreneurship policy, including wealth taxation, financial and labor market regulation, social security, and science policy. Policies and institutions in these different areas overlap and interact in ways that affect the quality and performance of the entrepreneurial ecosystem (Stam 2015, 2018). As the institutions in these areas have evolved historically and policy makers in these areas pursue different, equally relevant public policy priorities, the challenge is to discuss the proposed agenda in sufficient depth and with a sufficiently diverse group of policy makers and practitioners. The challenge is to not only propose policies and reforms that will strengthen the ecosystem, but to do it in such a way that other important policy priorities are also achieved.

In order to receive the first round of feedback on the proposals for Germany presented in Table 7.5, a policy round table was held at the *Bundesministerium für Wirtschaft und Energie* in Berlin on April 24, 2018. This step can be seen as an attempt to allow our patient, or perhaps more accurately, their team of medical specialists, intimately familiar with our patient, to give feedback about our diagnosis and proposed treatments. What proposals does this team endorse, question, or propose to drop?

Several participants stressed that cultural aspects and attitudes are important factors affecting the entrepreneurial activity in Germany. Discussing monetary issues, such as the size and distribution of certain items of EU's, Germany's, or the *Bundesländer's* budget, will only be of limited use if one does not see how this fits into the institutional and cultural patterns of Germany.

The participants also agreed that institutions like high employment protection and entrepreneurship-inhibiting insolvency laws increase the risks involved with entrepreneurial failure and the stakeholders also meant that institutional reforms that decrease the personal risks of failure might have an effect on individuals' risk attitude. The relatively high-risk aversion in Germany is not innate and can be altered, even if it might take some time.

Supporting business angels might work to reduce market failure in the seed stage. The idea to subsidize the investors and not the firms was regarded as a fruitful strategy. However, some participants questioned the idea that capital access was an important bottleneck and others claimed that angel investment has no detectable effect on firm productivity and development. Supporting the VC industry might have an effect on the entrepreneurial culture and the risk attitude among potential entrepreneurs in society. It was also critically discussed whether tight regulation truly is a bottleneck for start-ups.

Some proponents argued that the size threshold of the SME definition that EU uses should be increased to include more *Mittelstand* firms as well. Even if these firms are not SMEs by the today's definition, they operate under similar organizational routines, managerial practices, and firm behavior. Even if this issue was not a specific proposal, participants pointed out that this would imply that a given budget has to be distributed among more firms or that the budget must increase substantially to avoid that resources are diluted.

## 7.6 Conclusions

This chapter on Germany presents the FIRES-approach to formulating a tailored institutional reform strategy to promote a more entrepreneurial society in Europe. It illustrates how one could systematically analyze the situation before selecting and proposing reforms within this area. After carefully analyzing Germany's historically rooted institutional foundations, this chapter triangulated the historical, qualitative, and quantitative information to identify Germany's strengths and weaknesses. Based on this diagnosis, the most relevant proposals are selected from the menu of policy interventions and reform proposals developed in more detail in the companion volume of this book (Elert et al. 2019).

Due to its unique history, the German entrepreneurial landscape is probably the most decentralized and regionally diffused in all of Europe. This is reflected to this day in a spatial structure with a comparatively low level of concentration of economic power in the capital region and with economically strong clusters in the *Länder* capitals and other large cities around the country. Germany is home to centuries-old universities and also developed a strong system of non-university research institutes. Germany's financial system is unique with its locally embedded public bank system which supports Germany's *Mittelstand* of decentralized export-oriented medium-sized industrial firms across the country. The labor market is characterized by a model of consensual and coordinated decision making between employers and employees that facilitates and promotes high investments in firm-specific human capital.

Germany has developed its own unique model of capitalism and represents the core of the continental European model with a coordinated market economy. The reunification between West and East Germany in 1990 started an economic process that is arguably still ongoing. The socialist doctrine had drained East Germany of its entrepreneurial talent and the structure of *Mittelstand* vanished.

Germany today has, however, a rather unbalanced entrepreneurial ecosystem. It excels in competition and technology absorption, but these strengths are negated by lacking performance on human capital. Germany lags only slightly relative to the EU average on human capital and risk acceptance and scores low in Entrepreneurial Attitudes. The main bottlenecks in the entrepreneurial ecosystem are a limited willingness to take risk, an educational system that could aim for more creativity and experimentation and a lack of radical innovation that feeds back into a low familiarity with ambitious entrepreneurship and a rather closed and conservative business culture.

This chapter discusses proposals concerning taxation and financial regulations as well as ideas about how to improve the regulatory situation for start-ups and founders. Germany also needs to strengthen the digital infrastructure and the knowledge generation sector in addition to supporting innovation in SMEs.

The main message for Germany is that the German institutions could allow for more experimentation and somewhat more radical innovation by strengthening the educational system in that direction and considering creating a more equal playing field between dependent employment and self-employment/employer when it comes

to labor protection and social security. While this should not go at the cost of carefully built-up competitive strengths, Germany could afford to become more adventurous. The proposals individually and in combination aim to reward German entrepreneurs more if successful and punish them less if they fail.

Of course, these proposals will need a much more detailed discussion and form the starting point, and not the final word on the policy debate. Moreover, even if adopted, our proposals all require careful implementation and evaluation to complete the seven-step policy cycle presented in Chap. 1 of this volume.

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