

Fritsch, Michael; Wyrwich, Michael

Working Paper

Entrepreneurship in the East German transition process: Lessons for the Korean Peninsula

Jena Economic Research Papers, No. 2016-008

Provided in Cooperation with:

Friedrich Schiller University Jena, Faculty of Economics and Business Administration

Suggested Citation: Fritsch, Michael; Wyrwich, Michael (2016) : Entrepreneurship in the East German transition process: Lessons for the Korean Peninsula, Jena Economic Research Papers, No. 2016-008, Friedrich Schiller University Jena, Jena

This Version is available at:

<https://hdl.handle.net/10419/148891>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

JENA ECONOMIC RESEARCH PAPERS



2016 – 008

Entrepreneurship in the East German Transition Process: Lessons for the Korean Peninsula

by

**Michael Fritsch
Michael Wyrwich**

www.jenecon.de

ISSN 1864-7057

The JENA ECONOMIC RESEARCH PAPERS is a joint publication of the Friedrich Schiller University Jena, Germany. For editorial correspondence please contact markus.pasche@uni-jena.de.

Impressum:

Friedrich Schiller University Jena
Carl-Zeiss-Str. 3
D-07743 Jena
www.uni-jena.de

© by the author.

Entrepreneurship in the East German Transition Process: Lessons for the Korean Peninsula¹

Michael Fritsch and Michael Wyrwich

May 2016

Abstract

This paper summarizes the role of entrepreneurship in the East German transformation process that followed the breakdown of the socialist regime and subsequent unification with West Germany. The main aim of this exercise is to derive conclusions and recommendations for a potential unification of the Korean Peninsula. We demonstrate that the formation of new businesses played a significant role, while efforts to adapt formerly state-owned firms were much less successful. In East Germany, newly emerging firms created the major share of employment opportunities, while incumbent socialist firms shed vast amounts of labor or disappeared completely. The main implication for a potential unification of the Korean Peninsula is that policy should have a special focus on entrepreneurship. In particular, it should try to utilize and strengthen the entrepreneurial abilities of the North Korean population and to create favorable conditions for the emergence of prospering new businesses.

JEL-classification: P27, L26, P31, N14, O10, O43, O57

Keywords: Entrepreneurship, transformation, East Germany, Korea

Address for correspondence:

Friedrich Schiller University Jena
School of Economics and Business Administration
Carl-Zeiss-Str. 3, 07743 Jena, Germany
Phone: +49 (0)3641 94 32 – 21 (Fritsch), - 23 (Wyrwich)
m.fritsch@uni-jena.de, michael.wyrwich@uni-jena.de

¹ We are indebted to Horst Brezinski, Gyun-seok Gwon, Rainer K. Silbereisen and Mun-su Yang for helpful comments on an earlier version of this paper. Financial support of the German Research Foundation (Grant No. SFB580/T03) is gratefully acknowledged.

1. Aims and scope

Theory, as well as empirical evidence, suggests that entrepreneurship is a key driver of development.² This may particularly hold true for disruptive changes of the institutional framework like the shock transformation of the East German economy from a socialist system to a market economy (Brezinski and Fritsch, 1995). While the socialist regime of the German Democratic Republic (GDR) made great efforts to make private firms³ go extinct, the sudden freedom to set up an own business has led to a start-up boom. After a number of years, self-employment in East Germany reached and then exceeded the West German level.

This paper summarizes the role of entrepreneurship in the East German transformation process that followed the breakdown of the socialist regime and subsequent unification with West Germany. The main aim of this exercise is to derive conclusions and recommendations for a potential unification of the Korean Peninsula.⁴ We demonstrate that new business formation—“bottom-up” transformation—has played a rather significant role, while “top-down” transformation, i.e., the adaptation of the formerly state-owned firms to the new framework conditions, was much less successful. In the transformation process of East Germany, newly emerging firms created the bulk share of jobs, while incumbent socialist firms shed vast amounts of labor or they disappeared completely. The main implication for a potential unification of the Korean Peninsula is that policy should have a strong focus on entrepreneurship. In particular, it should try to utilize and strengthen the entrepreneurial abilities and initiatives of the North Korean population and to create favorable conditions for the emergence of prospering new businesses.

Section 2 offers an overview of the challenges that incumbent socialist enterprises faced during the transition to a market economy and document

² See Fritsch (2013) for a detailed exposition.

³ There were manifold attempts by the socialist regime to eradicate and crowd out entrepreneurial initiative and self-employment. The few remaining self-employed people were heavily regulated (Pickel, 1992; Thomas, 1996).

⁴ Our particular focus on firm demography complements previous work on implications of the German re-unification process for the Korean Peninsula (Henke, 2014).

the development of these firms over the course of the transition. Section 3 deals with the development of entrepreneurship in East Germany since the fall of the Berlin Wall in the year 1989. In particular, we analyze the individual characteristics of the new East German entrepreneurs as well as reasons for the considerable differences in new business formation that can be observed. Based on the empirical evidence of the East German case we then discuss implications for a potential unification of the two Koreas in section 4. Section 5 summarizes our main arguments and draws conclusions.

2. The shock transformation and its effects on socialist enterprises

2.1 The transition shock in detail

The East German transition process to a western-type market economic system was marked by three main steps (for details see Brezinski and Fritsch, 1995):

- Increased competition due to the opening of the border in November 1989.
- Currency union between East and West Germany introduced on July 1, 1990.
- An abrupt change of the formal institutional framework that came with German unification on October 3, 1990.

It is quite likely that these three stages will also play an important role in the potential case of a unification of the Korean Peninsula (see Section 4).

2.1.1 Competition shock and currency union

One of the key challenges for incumbent East German enterprises began with the opening of the inner German border in November 1989. Suddenly, East German firms that were used to a comfortable position of serving seller's markets found themselves in direct competition with a diversified supply of high quality products from Western firms that attracted considerable demand of the population. Since GDR labor productivity was only about 30 percent of the West German level (Mallok, 1996; van Ark, 1995), East German firms could only remain competitive with much lower wages. Another

severe problem was that most of the East German firms' products were of comparatively low quality and appeared outdated. Hence, significant product innovation became a key issue.

The competition with Western firms became particularly intensive in the aftermath of the currency union that was introduced on July 1, 1990. Due to the chosen exchange rate of 1:1 between the East and West German Mark, along with generous collective labor agreements, East German wages rose between 1989 and 1990 by about 500 percent (wage shock) (Sinn and Sinn, 1992). The wage level increased in subsequent years while labor productivity did not rise at a corresponding rate. As a consequence, East German firms were hardly competitive resulting in a massive employment decline. This development was accompanied by a sharp reduction in demand of often long-term customers from other former socialist countries that could hardly afford East German products anymore because the German currency union implied a drastic change of the terms of trade. Many former customers substituted East German products with cheaper ones that were now freely available on the world market.

Another important challenge for East German firms was the increased availability of raw materials and intermediate goods that created a supply shock (Brezinski and Fritsch, 1995). Most firms in the centrally planned socialist economy had a rather high degree of vertical integration in order to be less vulnerable to shortfalls of supply and misallocations. With the introduction of the market economy many internal stages of production became unprofitable since intermediate goods of often considerably higher quality could be bought much cheaper on the market. The improved availability of inputs induced a sharp decrease of the vertical integration leading to further employment losses. At the same time, introduction of modern and more efficient production technologies further reduced the demand for labor (for details, see Mallok, 1996).

Finally, East German firms played a relatively minor role in the national innovation system. Similar to most socialist countries, basic research and the largest part of applied research and development (R&D) were conducted in

National Academies of Science and in the universities. As a consequence, many socialist firms had a rather low absorptive capacity and were often quite hesitant to adopt the research results of these external institutions. Another reason for the relatively low level of R&D in East German firms was the East German policy that emphasized reconstructing heavy industries directly after World War II, a task that did not require much scientific input. Later on, the demand for innovative products remained relatively low since most efforts were focused on meeting actual production plans in the face of growing international isolation and constantly decreasing competitiveness (for further details, see Mayntz, 1998).

2.1.2 The abrupt change of the formal institutional framework

German reunification occurred on October 3, 1990, and was accompanied by the complete transfer to East Germany of the ready-made formal institutional framework of the West German state, the Federal Republic of Germany (FRG). This shock-like institutional transition constitutes the main difference between German reunification and the developments in other former socialist East European countries where changes took place much more gradually (Hall and Ludwig, 1995; Brezinski and Fritsch, 1995). Since many of the new laws and regulations were entirely different from those of the socialist GDR, adapting to the new “rules of the game” was an enormous challenge for the people and firms of East Germany. The adoption of the West German institutional framework included a rather significant reorganization of the innovation system, particularly in the field of public research (for details, see Guenther, 2014).

All these developments of the transition process implied a severe mental shock for the East German population. The new system required a much higher level of self-initiative and flexibility. Under the new conditions, many of the organizational routines and structures that enterprises had developed under the socialist regime became obsolete if not detrimental. Even qualifications, work experience and knowledge that had been acquired by members of the workforce in the old system, became obsolete and were

of much less economic value (see also Bird et al., 1994; Gathmann, 2005; Hitchens, Wagner, and Birnie, 1992; Wyrwich, 2013). Therefore, adapting existing structures, developing new routines and acquiring new job skills was one of the key challenges for former socialist enterprises and its labor force (for details, see Fritsch and Mallok, 1998, and Newman, 2000).

2.2 How policy tried to assist

New policy measures were created in an effort to support firms in coping with the enormous challenges of the transformation process. One main focus was the conversion of state-owned firms (that comprised the vast majority of employees) into private ones. The restructuring and privatization of the state-owned companies was carried out by a privatization agency (THA, *Treuhandanstalt*), which was created by the government in March 1990 approximately six months before reunification (for details regarding the organizational structure of the THA, see Seibel, 2005). The THA became the owner of all previously state-owned companies consisting of about 8,000 firms with more than 45,000 establishments in total. In the course of restructuring procedures the number of firms grew to ca. 14,600. The main strategy of the THA was rapidly restructuring and selling their firm portfolio to private investors who had to develop restructuring and investment plans for the acquired firms. The THA was dissolved by the end of 1994. Around this time, the bulk share of firms was either closed down or sold to West German and international investors. Only 20 percent of the firms were privatized via management buy-outs (MBO) through executive employees.⁵

With the German unification on October 3, 1990, East Germany automatically became a member of the European Union and was therefore eligible for regional assistance. Main instruments of regional policy for firms at that time were investment subsidies that enabled them to modernize their equipment. While some observers expected that the implementation of up-to-date machinery would more or less automatically enable East German firms

⁵ For details, see Leysen (1991), Brezinski (1992), Sinn and Sinn (1992), Carlin (1993), Brücker (1995), Sander (1995), and MacLean et al. (2003).

to catch up with the West German productivity level (Sinn and Sinn, 1992), the effect of a modernized capital stock turned out to be much less pronounced (Mallok, 1996; Fritsch and Mallok, 2002). A main bottleneck for a catch-up of East German firms that could not be tackled with investment subsidies was management know-how, particularly with regard to selecting and using modern machinery in a way that it unfolds its productivity. Other main fields of supporting policies were the reconstruction and modernization of the physical infrastructure that the socialist regime had left in rather bad shape, as well as the transformation of the education and research sector and its integration into the innovation system of the re-united Germany.

It is rather remarkable that new business formation was not a focus of policy in the early years of the transition process. Significant policy attempts to stimulate and support the emergence of new businesses in Germany, and East Germany in particular, emerged only after the year 2000.

2.3 The development of incumbent enterprises over the course of transition

Due to the developments described above, the industrial output of the East German economy in the year 1991 was only about 35 percent of the initial level of 1989 (Hall and Ludwig, 1995). Burda and Hunt (2001) characterize the development of the East German economy in the early 1990s as the most severe economic dislocation in peace time in the 20th century. The unemployment rate, that was virtually zero in 1989, grew to 15 percent in the year 1992. The bulk share of former socialist enterprises was unable to cope with new challenges and had to be closed down, others were split up and privatized. After a few years, the employment share of these firms was rather minor (Brücker, 1995; Bellmann et al., 2003; Wahse et al, 1995). Despite the high investment of public subsidies in modern production facilities and equipment, productivity growth of the East German economy was rather moderate (for details see Mallok, 1996). Even more than two decades after the fall of the Berlin Wall there is still a pronounced East-West German productivity gap of about 25-30 percent (IWH, 2010; Mattes et al., 2015).

The experience of the East German transition process demonstrates that the opportunities for a successful “top-down” transformation are somewhat limited. One might argue that the relatively poor performance of top-down transformation in East Germany might be due to the shock-like character of the transition process. However, incumbent enterprises in those East European countries that transformed more gradually did not perform significantly better after the dissolution of socialism. In those countries, slow privatization and, particularly, an inappropriate framework of formal institutions turned out to be a severe impediment to a fast recovery.⁶

Against this background, one can expect that attempts to transform state-owned enterprises in North Korea will face massive problems as well, and might have only rather limited success. Therefore, using a bottom-up approach for the transition process, namely encouraging the emergence of new firms, is likely to meet with greater success.

3. Entrepreneurship and new business formation in the East German transition process

3.1 Self-employment in the GDR and after reunification

At the advent of the GDR regime in September 1989 there were around 185,000 self-employed persons in East Germany including helping family members. The self-employment rate was about 1.8 percent among the working age population (18 to 65 years). Around the same time, the self-employment rate in West Germany was about 10 percent (Figure 1).⁷ Self-employment was restricted to a few sectors and was heavily regulated. Most of the business owners were active in handicrafts and manufacturing trades (e.g., bakers, butchers, car repair) or were free professionals (e.g., medical doctors) (for details, see Pickel, 1992).

⁶ For details see Myant and Drahekoupil (2011) and the contributions in Aslund and Djankov (2014).

⁷ Own calculations based on the German micro census (for details, see Fritsch, Kritikos and Rusakova, 2012).

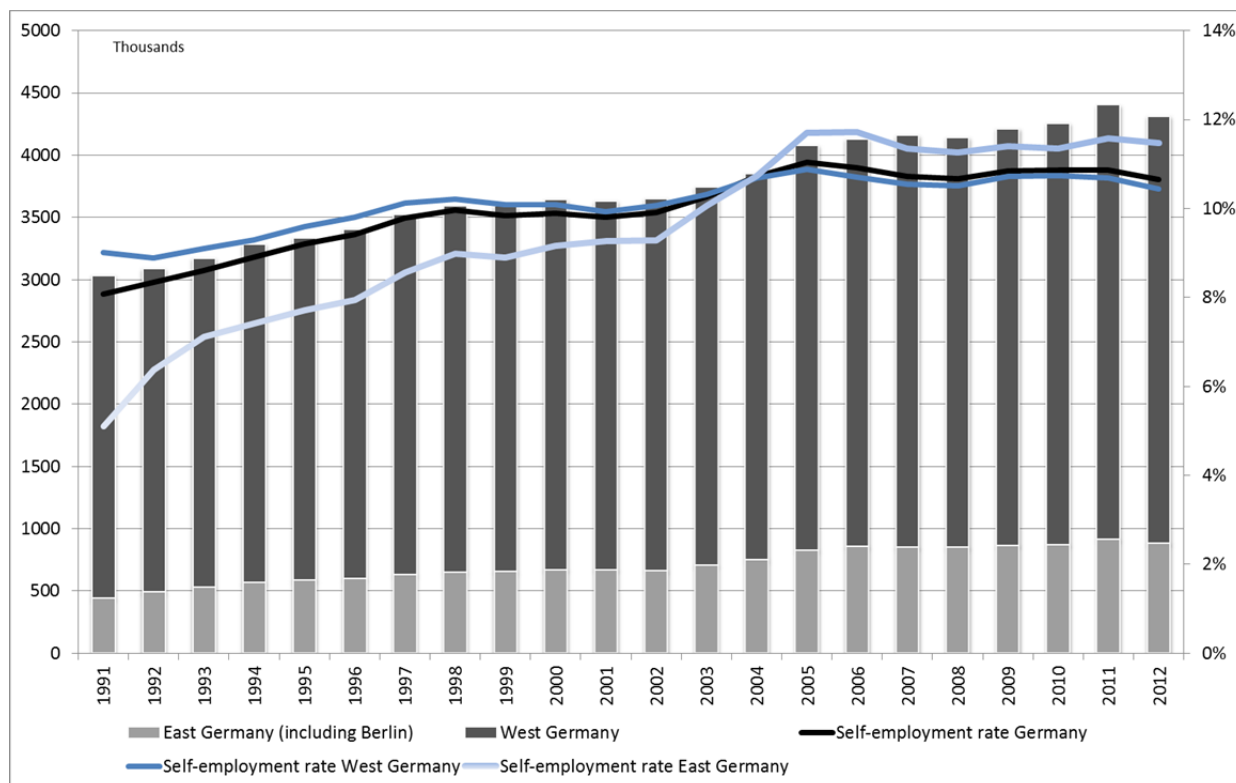


Figure 1: The development of self-employment in East and West Germany 1991-2012

In the course of the transition process, the framework conditions for entrepreneurship and the incentives for becoming self-employed changed tremendously. Particularly, the switch to the institutions of a modern western-type market economy in East Germany implied a massive start-up boom (Fritsch et al., 2014). One of the explanations for this surge in entrepreneurship was the enormous backlog of demand for high-quality products and for services that were in short supply under the socialist planned economy. The low number of suppliers in East Germany created a “window of opportunity” for starting a firm, which is also reflected in relatively high survival chances and growth rates of firms that were founded in the early 1990s (e.g., Brixy and Kohaut, 1999; Almus, 2002; Fritsch, 2004). A further explanation for the rise of start-up activity is that self-employment became an alternative to unemployment which rose rapidly in the aftermath of transition. Last but not least, massive public investments in infrastructure

induced a particularly large number of new businesses in the construction industries during these years (e.g., Bellmann et al., 2003).

East German start-ups in the early stage of the transition process faced a broad range of special impediments. Due to low incomes in the socialist GDR regime and low incentives for savings, founders had little equity. Another problem was that unclear ownership of land and buildings led to shortages in the availability of floor space. Moreover, the functioning and efficiency of the public administration was rather limited due to fundamental restructuring and the implementation of new routines. Last but not least, social acceptance of entrepreneurs tended to be considerably lower than in the West (Thomas, 1996).

The level of firm dynamics as reflected by the level of market entries and exits decreased over the course of the 1990s. Nevertheless, the level of self-employment rose steadily, approaching the West German level around the year 2004 and thereafter exceeding this level (Figure 1).

3.2 How to explain the increase of entrepreneurship in East Germany?

Given the more than four decades of a socialist regime with its massive anti-entrepreneurial policy and indoctrination of the population, the rise of self-employment in East Germany to the West German level within just a few years is quite remarkable. Having lived under a socialist regime, most GDR citizens had nearly no experience with a market economy and lacked knowledge of how to run an entrepreneurial venture. Furthermore, GDR propaganda had condemned entrepreneurship as a bourgeois anachronism and in that way triggered a mentality at odds with entrepreneurship.

One explanation for the swift re-emergence of self-employment in East Germany can be based on William Baumol's (1990) hypothesis that the share of entrepreneurial people in a country is quite constant over time independent of the institutional regime and the economic system. However, the way in which entrepreneurial talent is applied may considerably differ according to the institutional context. Baumol (1990) argues that the way

people make use of their entrepreneurial talent is strongly shaped by the ruling institutions, the “rules of the game”, as well as the prevailing norms and values (North, 1994). He classifies self-employment as an economically “productive” form of entrepreneurship, while other forms of entrepreneurial behavior such as rent-seeking activities, tax evasion and crime are rather “unproductive” or even “destructive”. This means that in a socialist system that makes strong efforts to suppress private sector economic activity, the same people that would be self-employed in a market economy may find it more rewarding to use their entrepreneurial talent by acting as managers of socialist enterprises, by engagement in socialist mass organizations or in black market activity. Accordingly, the start-up boom in East Germany could be explained by the fact that it is much easier for entrepreneurial people to unfold their abilities and ambitions by starting their own business in a market economy than under socialism.

Support for Baumol’s hypothesis is also provided by examples from other East European countries where many people that had leading positions in socialist firms and organizations started an own business when the system developed towards a market economy (e.g., Hisrich and Grachev, 1993; Rona-Tas, 1994; Stoica, 2004). Self-employment might have been a viable career option for these people in socialism if the institutional framework conditions would have been more favorable for self-employment. However, under a socialist regime it was more rewarding to act out one’s entrepreneurial talent through rent-seeking in leading positions of socialist mass organizations. Thus, the observed empirical patterns confirm Baumol’s hypothesis that institutions determine how people make use of their entrepreneurial talent. Hisrich and Grachev (1993) vividly demonstrate that in the Soviet Union a considerable level of entrepreneurial talent existed and could only be applied in the shadow economy because private firms were illegal.

An implication of Baumol’s hypothesis is that self-employed people in East and West Germany should have quite similar characteristics. Empirical analyses of East and West German entrepreneurs show that they are indeed

rather comparable with regard to age, gender, educational attainments as well as personality traits (for details see Fritsch et al., 2014). An East German peculiarity is the lower prevalence of entrepreneurship among older people. This can be explained by a comparatively stronger effect of the policies of the socialist regime on the perception of entrepreneurship for those people that had experienced this anti-entrepreneurial environment for a relatively long period of time. Moreover, it can be assumed that people with a relatively long period of work experience in the socialist system faced a particularly strong devaluation of their acquired knowledge under the new framework conditions and that this work experience was of little help for recognizing and pursuing entrepreneurial opportunities (Wyrwich, 2013; Wyrwich et al., 2016).⁸

A main difference between East and West German businesses, even more than two decades after the unification, is that East German firms tend to be of a considerably smaller size. Large firms are rather rare and quite a number of East German establishments are subsidiaries of West German or international companies. An obvious reason for the on average smaller size of East German firms is that many of them are not very competitive, which is reflected in their comparatively low level of productivity and lower chances of survival (Fackler, 2014). Possible explanations for this weakness of East German firms are unfavorable economic framework conditions, as well as a lack of managerial and entrepreneurial skills among East German founders. In this respect, Wyrwich (2010) shows that the likelihood of achieving growth is higher among those East German firms where West German co-founders play a significant role. Furthermore, East German firms tend to have a stronger focus on regional markets while their export orientation is relatively low (IWH, 2010; Mattes et al., 2015).

⁸ Occupational and industrial experience are key determinants for the detection of entrepreneurial opportunities.

3.3 Regional differences of start-up activity in East Germany after transition

There is significant spatial variation in the level of new business formation and self-employment in East Germany. Relatively high start-up rates are found in the regions adjacent to Berlin, in the broader areas of other larger cities like Dresden, Chemnitz, Leipzig, Magdeburg and Rostock, as well as in a stripe that connects the main cities of Thuringia including Erfurt and Jena (Figure 2). Start-up rates have been relatively low in many rural areas and in those places that have been heavily shaped by socialist economic policies like Hoyerswerda (heavy investments in lignite-coal mining and energy) and Bitterfeld (concentration of the chemical industry). The coastal regions of East Germany had relatively high levels of new firm formation in the tourism industry.

An important finding of our empirical analyses is a strong persistence of regional differences of entrepreneurship over time. There is a significant positive relationship between current levels of new business formation and the share of self-employed people in the mid-1920s, as well as with the share of self-employed just before the fall of the Berlin Wall (for details, see Wyrwich, 2012; Fritsch and Wyrwich, 2014). Regions with a pre-socialist entrepreneurial tradition are those with relatively strong remnants of self-employment during the socialist regime. Entrepreneurial tradition also has a positive effect on the level of start-up activity after transition. Altogether, regional differences in start-up activity show a considerable level of path-dependence that could not be completely destroyed by the anti-entrepreneurial socialist policies.⁹ It is important to notice that regions with an entrepreneurial tradition in pre-socialist times were apparently well able to cope with the challenges of the transition process showing relatively high levels of GDP growth (Kawka, 2007). A similar pattern can be found in West Germany where historically high levels of self-employment are positively related to economic growth in recent periods (Fritsch and Wyrwich, 2016).

⁹ There is also persistence of spatial differences in start-up activity in West Germany (Fritsch and Wyrwich, 2014).

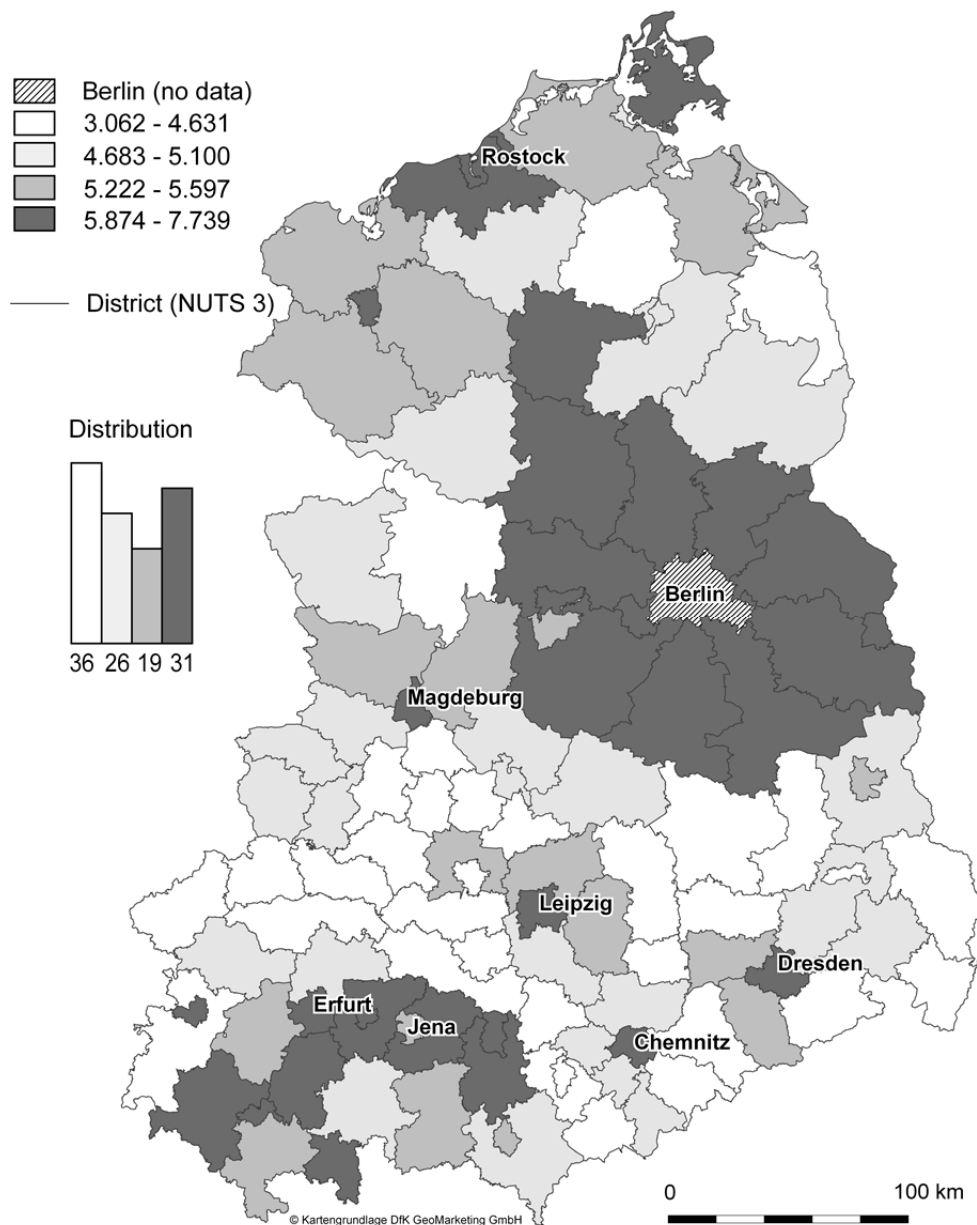


Figure 2: Average number of start-ups between 1990 und 2008 per 1,000 inhabitants aged between 18 and 64 years

The persistence of new business formation and self-employment suggests the prevalence of a regionally embedded culture of entrepreneurship that survived severe historical shocks like World War II, forty years of an anti-entrepreneurial socialist system, and the regime switch to a market economy (Fritsch et al., 2014; Fritsch and Wyrwich, 2014). Entrepreneurial culture can be understood as an orientation of the population

toward entrepreneurial values such as individualism, independence and achievement (e.g., McClelland, 1961; Hofstede and McCrae, 2008). It is marked by norms and values in favor of entrepreneurship as well as by high legitimacy and social acceptance of entrepreneurial behavior (e.g., Etzioni, 1987; Kibler et al., 2014).

The evidence of the German case strongly suggests that an entrepreneurial culture is conducive to economic growth and constitutes an important regional asset in coping with the problems of economic transition. Altogether, the findings are in line with the prominent hypothesis advocated by institutional economists that informal institutions such as norms, codes of behavior, and culture are much more persistent over time than formal institutions, which may change overnight as observed in the case of German re-unification (North, 1994; Williamson, 2000).

3.4 Preliminary conclusions

There is compelling evidence that institutional framework conditions play a crucial role in determining the level of productive entrepreneurship, such as start-up activity. Further important factors that are conducive to successful self-employment are the experiences and skills of the local population, as well as the prevalence of a regional entrepreneurship culture. There are remarkable similarities with respect to individual characteristics of firm founders in East and West Germany, but also a number of differences that can be explained by the socialist legacy of East Germany. Despite these differences, the average level of self-employment in East Germany reached the level of the western part of the country in a relatively short period of time while significant regional differences within both East and West Germany persist.

4. Implications of the East German experience for the Korean context

4.1 Basic trends of firm demography

The East German transition process that began in the years 1989/90 was marked by three basic trends:

- Most of the former socialist state-owned enterprises were unable to cope with the challenges of transition and had to sharply reduce employment or were closed down.
- Newly founded firms played a key role in the transition process and contributed positively to economic development.
- Many East German founders as well as managers of incumbent enterprises already had leading positions in the socialist system.

Based on this evidence, we expect that these trends will also play a crucial role in the case of a potential unification of North and South Korea. New business formation will likely play an important role since North Korean incumbent firms will probably face even more severe difficulties in coping with the challenges of transition than those faced by the state-owned companies during the transition process in East Germany. The inability of socialist firms to cope with the transition to a market economy also holds true for other East European countries where the changes occurred much less rapidly than in the former GDR (Djankov, 2014; Myant and Drahokoupil, 2011). Although the available information about the industrial structure and the productivity of the North Korean economy are relatively sparse (for an overview about regional industrial structures, see Dormels, 2015), it is quite likely that the productivity gap between North and South Korea today is considerably larger than the backlog of East German firms in 1989/90. Compared to other East European countries, productivity of the GDR economy was, indeed, relatively high.¹⁰

¹⁰ It is quite interesting that West German experts overestimated the situation in the East German economy in the late 1980s despite a relative abundance of data. The German Institute for Economics Research (DIW), for example, estimated that the productivity of the

If there is a unification of the Korean Peninsula, North Korean firms would need to modernize their product portfolio and production technologies tremendously in order to cope with the challenges of market integration. Since most of the capital stock of North Korean firms is deteriorated and obsolete, heavy investment into modern machinery and equipment is clearly warranted. However, the East German experience clearly shows that financial subsidies for investment in new machinery are insufficient for creating a significant increase in productivity (Fritsch and Mallok, 2002). It is perhaps even more important, to draw on external expertise when implementing new machinery and production technologies, to provide training and coaching of employees on how to use the new technologies efficiently, as well as on how to manage firms under the conditions of a market economy. Such a comprehensive knowledge transfer could be obtained by sending South Korean and international experts to North Korea. Another approach to the necessary knowledge transfer could be the acquisition of North Korean firms by South Korean and foreign companies.

The massive problems that are to be expected when transforming incumbent socialist firms call for policy measures that focus on new business formation. In this regard, it is important to distinguish between firms started by North Korean citizens and new subsidiaries established by firms from South Korea and other countries. As in the case of East Germany and other East European transition countries, the economic and functional elites of the communist regime can play a vital role as managers and entrepreneurs in a transforming North Korean economy (see also Best and Vogel, 2016, as well as Martens, 2016). Hence, attempts to marginalize these groups of people would hamper economic development because this would leave their

GDR economy was about ca. 45 to 55 percent of the West German level (Görzig and Gornig, 1991), while van Ark (1995; 1997) estimations based on information of East German Statistical Offices yielded a productivity level of about 30 percent. There is no internationally comparable data available on labor productivity for other Eastern European countries. However, in 1995 productivity in the industrial sector was below 30 percent of the EU level for all Central Eastern European countries (Bijsterbosch and Kolasa, 2009). It is rather likely that the figures in the 1990s already include a significant catch-up in productivity. For a detailed analysis of the cases of the Czech Republic and Hungary in the early 1990s see Hitchens et al. (1995).

knowledge and talent unused. For the same reason, a complete substitution of the managers of incumbent North Korean firms is not advisable. The East German experience also demonstrated that such a massive change in the management structure would hardly be possible since there was only a small share of qualified West Germans that were willing to assume management positions in Eastern firms beyond short term engagements.¹¹ However, if former North Korean managers remain in the firms after transition, then it is crucial to also attract new external managers in order to 'inject' new knowledge required for realizing the necessary adjustment of organizational structure and routines, as well as to implement rapid changes of product portfolios and production technologies.

Altogether, it is very likely that after the initial stages of transition, adjustment processes will continue for an extended period of time regardless of whether the transition process is radical or gradual. Therefore, the North Korean economy will be in long-term need of specific support.

4.2 General prerequisites of a successful transition of North Korea

What might a transition policy in the case of a peaceful unification of the Korean Peninsula look like? What should be a main focus of such a policy?

The most important prerequisite for a successful transition is the existence of clear and appropriate institutional framework conditions. It can be expected that, as in the case of German unification, the formal institutions of a transformed North Korea will be based on the formal institutions of the South (for a further discussion of models of economic integration in Korea, see Yang, 2014). It may, of course, be reasonable to have temporary special regulations in the North as well.¹²

¹¹ These factors are potential reasons why management positions of many of the surviving East German incumbent firms were held by individuals who maintained similar roles during socialist times (e.g. Martens, 2005).

¹² It might be worthwhile to investigate whether or not there are rules in North Korea that could be also useful in South Korea.

Regardless of whether or not institutional changes take place in a shock-like manner as in the case of Germany, it is crucial to settle the regulation of property rights from the very beginning. In this regard, there are mainly two problems. Namely, the privatization of incumbent firms and restitution claims of expropriated firm owners. In East Germany, investigating and verifying restitution claims was quite a lengthy process that, in many cases, led to delays in the restructuring of firms.¹³ The restitution policy also turned out to be problematic because not all of the former owners and their inheritors had appropriate concepts for successfully restructuring the claimed businesses. As a reaction to these problems the German government later adopted an “investment-plan-first” policy. According to this policy firms were not restituted to former owners if another investor had a more compelling strategy and investment plan for restructuring the firm. In these cases former owners were financially compensated.¹⁴ Based on these experiences we believe that implementing an “investment-plan-first” policy right from the beginning would be conducive for accelerating the conversion of the former socialist firms. Restitution should play only a rather minor role.

Another bottleneck in the East German transition was the massive capital demand to modernize former state-owned enterprises and to launch new firms. Due to the poor economic conditions of the socialist system and low incentives for savings, the required capital could hardly be obtained from East German sources. Most presumably this will also apply to the case of North Korea. In order to attract the necessary capital it may be important to provide reasonable access for international investors.

Since a transformation of the North Korean economy involves radical innovation in many regards, there is presumably a tremendous need for increasing R&D activities, particularly R&D activities in firms. In this regard, a more or less complete reorganization of the country’s innovation system may be required. The available information on science and technology illustrates

¹³ These problems of restitution in the privatization process are also vividly described by Blacksell et al. (1996).

¹⁴ For details on the law dealing with restitution claims, see Shingleton et al. (1991).

its negligible role in the current North Korean economy (Frank et al., 2012, chapter 5.5.).

Investment in physical infrastructure (e.g., streets, railways, and telecommunication) plays an important role for firms to obtain access to extra-regional and international markets. Last but not least, courses in management and business administration should be part of the curricula of schools, universities and also in on-the-job training programs in order to familiarize employees, especially those in leading positions, with the requirements of managing and running a company in a market economy.

4.3 Policy options to support incumbent enterprises

With regard to incumbent socialist enterprises it is of primary importance to investigate whether or not restructuring is a viable option. In quite a number of cases, the costs of adjusting organizational structures and production technologies may be much higher than the benefits of artificially keeping the enterprises alive. In the case of East Germany, the public privatization agency, THA, conducted an ex ante rating of single firms with respect to the chances of successful restructuring (for details, see Treuhand-Dokumentation, 1994). A similar procedure could be fruitful in the case of a North Korean transition in order to identify firms that have sufficient capabilities to manage a successful transition. After such an evaluation, policy measures should focus on supporting these promising incumbent firms in the adaptation their organizational structures and routines, modernization of production technologies and mastery of a functional integration into the Korean market economy and international value chains. Any such efforts require the involvement of external experts that have experience with restructuring and privatization.

In the case of East Germany, the number of qualified personnel and external advisors that could be attracted for such a task varied across industries. One major obstacle was that candidates for such a position feared that a temporary engagement in East Germany could be harmful for their future careers. For this reason many employees of the privatization agency

were either relatively young (which came along with a lack of industry experience), or relatively old. Actors in the middle of their careers could hardly be attracted to engage in the privatization process (for details, see Seibel, 2005, 171-185). Based on this experience it is crucial to create an incentive system that makes it attractive for experts and mid-career managers to get involved in the privatization of North Korean companies. At the same time, there should be incentives for South Korean companies to allow their employees temporary leaves in order to engage in the North Korean transition process.

When designing respective policy measures, it is critical to take into account several conflicts of interest. On the one hand, policy makers are interested in a prospering North Korean economy. On the other hand, the same policy makers depend, to some degree, on the goodwill of the South Korean elites who are not necessarily interested in the emergence of potential North Korean competitors over the course of an economically successful transition. Attracting direct foreign investment and being open to an engagement of foreign companies could be suitable approaches to counter these types of conflicts (for details regarding the current international integration of the South Korean economy see Eichengreen et al., 2012).

There are different measures to enhance competitiveness and capabilities of incumbent firms. However, it would be misleading to expect too much from restructuring these firms since it is very likely that many of them be can hardly made profitable at plausible costs. A sustainable economic development of North Korea cannot only rely on transforming former state-owned enterprises. It is probably much more important to promote entrepreneurship in order to achieve growth.

4.4 Promoting new firm formation and entrepreneurship

The experience from the German transition demonstrates that formal institutions play a pivotal role in new firm formation. Therefore, just as the design of the institutional framework is of crucial importance for the level of productive entrepreneurship in North Korea today, any new design in a

unified Korea will continue to be decisive. If the Korean Peninsula undergoes a reunification and subsequent transition process similar to that experienced in Germany, it can be expected that the formal institutions of South Korea will be introduced in the northern part of the unified country. Hence, the question how “entrepreneurship-friendly” are South Korea’s existing formal institutions becomes most relevant. Will South Korea’s current institutional framework support a bottom-up transformation of the North Korean economy?

The most recent country report of the Global Entrepreneurship Monitor (GEM) classifies South Korea as entrepreneurship-facilitating because of the availability and quality of physical infrastructures (e.g., industrial real estate, telecommunication, and transportation), cultural and social norms and values and low market entry barriers. Entrepreneurship-inhibiting factors include a lack of financial support for start-ups, little entrepreneurship education in schools and universities and poor availability of services that support entrepreneurial activity such as coaching, legal advice, and accounting (GEM, 2013).

South Korea is assigned to the group of innovation-driven economies which are characterized by high shares of the gross domestic product (GDP) spent for R&D. Comparisons of the level of start-up activities with other innovation-driven economies shows South Korea in the lower ranks (GEM, 2014, 35). According to the Global Entrepreneurship and Development Index (GEDI) (see Acs, Szerb and Autio, 2016) Korea ranks rather high in human capital and innovation but relatively low with regard to competition and internationalization.

It is not sufficient for policy measures to simply implement entrepreneurship-friendly laws and regulations that aims at fostering new business formation (policy layer); it must also try to stimulate a culture of entrepreneurship that is characterized by widespread acceptance of self-employment in the population (normative-cognitive layer). Measures at the policy layer are:

- *Entrepreneurship-friendly laws and regulations* which reduce barriers and obstacles hampering new firm creation. Examples are avoidance of unnecessary market entry barriers as well as developing an insolvency law tuned to the needs of young firms.
- *A clear-cut definition of property rights*. In East Germany, for example, new firms in the early stage of transition faced the problem of finding production sites since property rights of real estate were unclear.
- Development of *an entrepreneurship facilitating supporting network* like the creation of service centers for start-ups (e.g., coaching, incubators, business angels network) but also availability and provision of venture capital.

In the case of North Korea it is safe to assume that there is an enormous need for action with respect to establishing entrepreneurship-facilitating framework conditions. Therefore, start-up coaching and the establishment of supporting networks should be given a high priority. Founders can be supported by offering training in the “classical” aspects of managing an entrepreneurial venture (e.g., business strategy, marketing, finance), as well as offering courses on general economic principles and the functioning of a market economy.

Measures addressing the *normative cognitive layer* represent an important building bloc of a comprehensive entrepreneurship policy approach while also complementing policies focused on formal regulations. Promoting the social acceptance of the market economy system and entrepreneurship is one such complementary initiative. Another example includes measures to develop entrepreneurial values (e.g., strive for independence, willingness to assume risks) among the population.¹⁵ The transition experience in East Germany and Eastern Europe shows that lacking social acceptance of entrepreneurship was a severe stumbling block for the development of a vital private sector in the first years of transition. The effects of the socialist legacy

¹⁵ For further material on the psychological challenges of transition, see Silbereisen, 2016 (in this issue)

on norms and values can persist despite radical changes in the formal institutional framework and can influence the effectiveness of new legislation (for details, see also Grusevaja, 2005). These experiences teach us that even the most entrepreneurship-facilitating framework of formal institutions can be undermined if these are not backed up by measures that aim at promoting entrepreneurial values among the population.

One way to stimulate social acceptance of entrepreneurship is by boosting the effectiveness of entrepreneurial role models. The empirical evidence shows that social contact with entrepreneurs has a positive effect on the choice of self-employment as an occupation (Bosma et al., 2012). The underlying mechanisms are (1) a demonstration effect and (2) a peer effect. Observing successful entrepreneurs in the social/local environment fosters learning about entrepreneurial tasks and capabilities. At the same time, having entrepreneurial peers increases the likelihood of perceiving entrepreneurship as a viable career option. Since entrepreneurial role models play such an important role, the effectiveness of policy programs to enhance entrepreneurial skills and capabilities (e.g., business plan competitions) should increase with the presence of successful entrepreneurs.

Another way of fostering social acceptance of entrepreneurs is the portrayal of successful entrepreneurs in the media. In areas where such role models are lacking it might be helpful to reference local entrepreneurial role models from the past, if available. Furthermore, policy measures addressing the normative cognitive layer should be tailored to region-specific needs. In areas where social acceptance of entrepreneurship is already relatively high fewer efforts are required than in places that have a lack thereof.¹⁶ This is an open question in the North Korean case because of the increasing number of small traders and the emergence of a “marketplace economy” (*jangmadang* economy) that began in the mid-1990s. These developments might be helpful in establishing social acceptance of entrepreneurial behavior after a regime

¹⁶ Since the population in the special economic areas of North Korea (e.g., Kaesong, Kumgang-San) already has direct contact with South Korean private sector companies, it is likely that the social acceptance of a market economy and of entrepreneurship in these regions is relatively high as compared to other parts of the country.

switch. However, a fair amount of these private sector activities in North Korea are obviously associated with the “personal enrichment of the upper classes” (Park and Choi, 2014, 49-54). This may hamper social acceptance of entrepreneurship in the general population.¹⁷

For the North Korean economy as a whole, it is crucial to establish clear institutional rules, entrepreneurship-friendly laws for trade and commerce, as well as an appropriate design for industrial and labour relations. In this respect, it might make sense to create special rules for new firms (e.g., with regard to labour regulation). Education policies can play their part by integrating entrepreneurship education in school and university curricula. Another important building bloc is ensuring the availability of financial resources.

It is important that entrepreneurship policy has a clear regional focus. Any measure should be tailored according to region-specific needs.¹⁸ One crucial regional factor that should be considered is the socio-demographic composition of the local population with regard to age, qualification, and employment history. It is likely that older working age people will find it particularly difficult to adopt an entrepreneurial attitude. Empirical evidence from East Germany (Wyrwich, 2013) shows that even 15 years after German re-unification older East Germans are less likely to be self-employed when compared to their West German peers. This pattern can be explained by both the effect of socialism on one’s mind-set and a devaluation of labour market experience acquired in socialism. According to these results, one should expect that North Korean regions with a relatively high share of older people will exhibit a relatively low level of entrepreneurship. North Korean regions may also have different initial economic conditions that may influence the level and scope of entrepreneurial activities. There are indeed significant

¹⁷ Apart from small traders, there are a lot of informal food-related household economic activities such as gardening and raising live stocks. In accordance to recent population censuses, 84 percent of all North Koreans above the age of 16 years are involved in such activities (Lee, 2014).

¹⁸ For a more detailed exposition of the advantages of decentralized policy-making based on evidence from the East German transformation process, see Holtmann and Rademacher, 2016 (in this issue).

differences in living standards between Pyongyang and other North Korean provinces (e.g., Lee, 2012).

Similar to the developments in East Germany (Fritsch et al., 2014), it is likely that those North Korean regions with a pre-socialist tradition in entrepreneurship will have an above-average level of start-up activity if there is further liberalization of private sector economic activity. It is also likely that these regions will master the transition challenge comparatively well. Nevertheless, due to the pronounced communist indoctrination in North Korea it is unclear how strong the effect of an entrepreneurship culture pre-dating communism might still be.

5. Concluding remarks: the main policy lessons

Our paper draws on the experiences and knowledge gained from the transition processes that occurred in East Germany after the reunification of East and West Germany and applies them to what might be expected in North Korea if the Korean Peninsula undergoes a similar reunification. The example of post-transition East Germany clearly shows that industrial restructuring over the course of transition from a socialist centrally planned economy towards a market economy depends especially on new firm formation. The role of restructured former state-owned enterprises in terms of employment and job creation is rather marginal. In East Germany, new firms clearly created the bulk share of new jobs. This is remarkable given that there have been no special policy programs for stimulating entrepreneurship in the 1990s. In contrast to the German case, policy should put a special focus on new business formation and self-employment right from the beginning in order to support the population in using their skills, knowledge and creativity in an economically productive way. The specific design of an institutional framework plays a critical role for a successful bottom-up transformation via start-up activity. This refers especially to formal rules such as business, labour, and competition law. Furthermore, norms and values of the population with regard to the social acceptance of entrepreneurs are pivotal. Another lesson from East Germany is that many of the new

entrepreneurs and managers of incumbent enterprises already held leading positions during socialist regime. Accordingly, it is likely that a complete exchange of the economic elites in the case of a North Korean transition might cause a severe reduction of the available entrepreneurial potential.

Any transition policy should be tuned to the different regional contexts across North Korea. Some North Korean regions might have an entrepreneurial history pre-dating the communist regime, and as such are certainly not starting from scratch. Potential regional differences in existing entrepreneurship cultures and general demographics should not be ignored by policy makers. Entrepreneurship policy needs a long-term orientation that avoids jeopardizing the market selection processes by using special subsidies or a short-term oriented “pick-the-winners” strategy.

Literature

- Acs, Zoltan J., Laszlo Szerb, and Erkko Autio. 2016. *Global Entrepreneurship Index*. Washington D.C.: The Global Entrepreneurship and Development Institute.
- Almus, Matthias. 2002. What Characterizes a Fast Growing Firm? *Applied Economics* 34: 1497-1508.
- Aslund, Anders, and Simeon Djankov. 2014. *The Great Rebirth—Lessons from the Victory of Capitalism over Communism*. Washington D.C.: Peterson Institute for International Economics.
- Audretsch, David B., and Michael Fritsch. 2002. Growth Regimes over Space and Time. *Regional Studies* 36: 113 – 124.
- Baumol, William J. 1990. Entrepreneurship: Productive, unproductive, and destructive. *Journal of Political Economy* 98: 893–921.
- Bellmann, Lutz, Maritta Bernien, Arnd Kölling, Iris Möller, and Jürgen Wahse. 2003. *Arbeitsplatzdynamik in betrieblichen Neugründungen Ostdeutschlands*. Beiträge zur Arbeitsmarkt- und Berufsforschung, 268, Institut für Arbeitsmarkt- und Berufsforschung: Nürnberg.
- Best, Heinrich, and Lars Vogel. 2016. Political Elites in Transition and Unification: German Lessons for the Korean Peninsula?. *Historical Social Research* 41 (in this issue).
- Bijsterbosch, Martin, and Marcin Kolasa. 2009. FDI and Productivity in Central and Eastern Europe, European Central Bank Working Paper Series No. 992, Frankfurt: European Central Bank.
- Bird, Edward J., Johannes Schwarze, and Gert G. Wagner. 1994. Wage effects of the move toward free markets in East Germany. *Industrial & Labor Relations Review* 47: 390–400.
- Blacksell, Mark, Born, Karl Martin, and Michael Bohlander (1996). Settlement of Property Claims in Former East Germany. *Geographical Review* 86: 198-215.
- Bosma, Niels, Jolanda Hessels, Veronique Schutjens, Mirjam Van Praag, and Ingrid Verheul. 2012. Entrepreneurship and role models. *Journal of Economic Psychology* 33: 410–424.
- Brezinski, Horst 1992. Privatisation in East Germany. *MOCT-MOST* 1: 3-21.
- Brezinski, Horst, and Michael Fritsch. 1995. Transformation: The shocking German way. *MOCT-MOST* 5(4): 1–25.
- Brix, Udo, and Susanne Kohaut. 1999. Employment growth determinants in new firms in Eastern Germany. *Small Business Economics* 13: 155-170.
- Brücker, Herbert 1995. Selling Eastern Germany: On the economic rationale of the restructuring of the Treuhandanstalt's privatisation and restructuring strategy, *MOCT-MOST* 5: 55-77.

- Burda, Michael C., and Jennifer Hunt. 2001. From Reunification to Economic Integration: Productivity and the Labor Market in Eastern Germany. *Brookings Papers on Economic Activity* 2: 1-92.
- Carlin, W. 1993. Privatization and deindustrialization in East Germany, *CEPR Discussion Paper* No. 892, Centre for Economic Policy Research: London.
- Djankov, Simeon. 2014. The Microeconomics of Postcommunist Transformation. In *The Great Rebirth—Lessons from the Victory of Capitalism over Communism*, ed. Anders Aslund and Simeon Djankov, 187-204, Washington D.C.: Peterson Institute for International Economics.
- Dormels, Rainer. 2015. The Industrial Facilities in North Korea, Paper presented at the World Conference on North Korean Studies 2015.
- Eichengreen, Barry, Dwight K. Perkins, and Shin Kwanho. 2012. *From Miracle to Maturity: The Growth of the Korean Economy*. Cambridge (MA): Harvard University Press (Harvard East Asian Monographs, vol. 350).
- Etzioni, Amitai. 1987. Entrepreneurship, adaptation and legitimation. *Journal of Economic Behavior and Organization* 8: 175–199.
- Fackler, Daniel. 2014. Establishment Survival in East and West Germany: A Comparative Analysis. *Schmollers Jahrbuch* 134: 183-208.
- Frank, Ruediger, James E. Hoare, Patrick Kollner, Susan Pares, and Stephen Epstein, 2012. *Korea 2012: Politics, Economy and Society, Korea Yearbook*. Boston/Leiden: Brill Academic Pub.
- Fritsch, Michael, and Joern Mallok. 1998. Surviving the Transition: The Process of Adaptation of Small and Medium-Sized Firms in East Germany. In *The Microeconomics of Transformation and Growth*, ed. Horst Brezinski, Egon Franck and Michael Fritsch, 163-184. Cheltenham: Edward Elgar Publishers.
- Fritsch, Michael, and Joern Mallok. 2002. Machinery and Productivity - A Comparison of East and West German Manufacturing Plants. In *Technological Change and Regional Development in Europe*, ed. Ludwig Schätzl and Javier Revilla Diez, 61-73, Heidelberg: Physica.
- Fritsch, Michael. 2004. Entrepreneurship, Entry and Performance of New Businesses Compared in two Growth Regimes: East and West Germany. *Journal of Evolutionary Economics* 14: 525 - 542.
- Fritsch, Michael, Alexander Kritikos, and Alina Rusakova. 2012. Who Starts a Business and who is Self-Employed in Germany? Jena Economic Research Papers # 001-2012, Jena: Friedrich Schiller Universität und Max-Planck Institut für Ökonomik.
- Fritsch, Michael. 2013. New Business Formation and Regional Development—A Survey and Assessment of the Evidence. *Foundations and Trends in Entrepreneurship* 9: 249–364.

- Fritsch, Michael, and Michael Wyrwich. 2014. The Long Persistence of Regional Entrepreneurship Culture: Germany 1925–2005. *Regional Studies* 48: 955-973.
- Fritsch, Michael, Elisabeth Bublitz, Alina Sorgner, and Michael Wyrwich. 2014. How Much of a Socialist Legacy? The Reemergence of Entrepreneurship in the East German Transformation to a Market Economy. *Small Business Economics* 43: 427-446.
- Fritsch, Michael, and Michael Wyrwich. 2016, forthcoming. The Effect of Entrepreneurship for Economic Development—An empirical analysis using regional entrepreneurship culture. *Journal of Economic Geography*. Doi:10.1093/jeg/lbv049
- Gathmann, Christina. 2005. The skill loss of older East Germans after re-unification. *Schmollers Jahrbuch* 125: 7–16.
- GEM. 2013. *Global Entrepreneurship Monitor Korea 2012 Report*.
- GEM. 2014. *Global Entrepreneurship Monitor Global 2013 Report*.
- Görzig, Bernd, and Martin Gornig. 1991. *Produktivität und Wettbewerbsfähigkeit der Wirtschaft der DDR*. Berlin: Duncker & Humblot (DIW-Beiträge zur Strukturforschung, Heft 121).
- Grusevaja, Marina. 2005. Formelle und informelle Institutionen im Transformationsprozess. Volkswirtschaftliche Diskussionsbeiträge Nr. 76, Potsdam: Universität Potsdam.
- Guenther, Jutta. 2014. Structural change and the emergence of an innovation system - the case of East Germany. Habilitation thesis, School of Economics and Business Administration, Jena: Friedrich Schiller University.
- IWH. 2010. *Ostdeutschlands Transformation seit 1990 im Spiegel wirtschaftlicher und sozialer Indikatoren*. 2. aktualisierte und verbesserte Auflage, Halle: Institut für Wirtschaftsforschung (IWH).
- Hall, John B., and Udo Ludwig. 1995. German Unification and the “market adoption” Hypothesis. *Cambridge Journal of Economics* 19: 491–507.
- Hitchens, David M.W.N., Karin Wagner, and John. E. Birnie. 1992. *East German productivity and the transition to the market economy: comparisons with West Germany and Northern Ireland*. Aldershot: Avebury.
- Hitchens, David M.W.N., John. E. Birnie, Judit Hamar, Karin Wagner, and Alena Zemplerová. 1995. *Competitiveness of Industry in the Czech Republic and Hungary*. Aldershot: Avebury.
- Holtmann, Everhard, and Christian Rademacher 2016. Decentralisation of Power and of Decision-Making – An Institutional Driver for Systems Change to Democracy. *Historical Social Research* 41 (in this issue).
- Henke, Klaus-Dietmar. 2014. The German Reunification: An Analysis a Quarter Century After 1989/90, *International Journal of Korean Unification Studies* 23: 1-24.

- Hofstede, Geert, and Robert McCrae. 2008. Personality and culture revisited, linking traits and dimensions of culture. *Cross-Cultural Research* 38: 52–87.
- Hisrich, Robert, and Mikhail Grachev. 1993. The Russian Entrepreneur, *Journal of Business Venturing* 8: 487-497.
- Kawka, Rupert. 2007. Regional Disparities in the GDR: Do They Still Matter? In *German Annual of Spatial Research and Policy: Restructuring Eastern Germany*, ed. Sebastian Lentz, 111 – 122, Berlin: Springer.
- Kibler, Ewald, Kautonen, Teemu, and Matthias Fink. 2014. Regional social legitimacy of entrepreneurship: Implications for entrepreneurial intention and start-up behaviour. *Regional Studies* 48: 995–1015.
- Lee, Young Hoon. 2012. Evaluation of the North Korean Economy in the Kim Jong Il Era and Prospects of Reform and Opening in the Kin Jong Un Era. *Journal of Peace and Unification* 2: 59-89.
- Lee, Suk. 2014. Household Economic Activity and Market in North Korea: A Story of the 2008 DPRK Population Census. *Journal of Peace and Unification* 4: 21-51.
- Leysen, Andre 1991. Privatization: East Germany. *Eastern European Economics* 30: 28-40.
- MacLean, Mairi, Jutta Howard, and Graham Hollinshead. 2003. Corporate Governance and the former East Germany: the role of the Treuhandanstalt in moulding the new German economy. *Journal of East European Management Studies* 8: 278-318.
- Mallok, Jörn. 1996. *Engpässe in ostdeutschen Fabriken: Technikausstattung, Technikeinsatz und Produktivität im Ost-West-Vergleich*. Berlin: edition sigma
- Martens, Bernd. 2005. Der lange Schatten der Wende: Karrieren ostdeutscher Wirtschaftseliten. *Historical Social Science Research* 30: 206-230.
- Martens, Bernd. 2016. Some result of the economic transformation in East Germany and its possible relevance for Korea. *Historical Social Research* 41 (in this issue).
- Mattes, Anselm, Michael Arnold, Alexander Eickelpasch, Michael Fritsch, and Alexander Schiersch. 2015. Kleinteiligkeit der ostdeutschen Wirtschaft - Gibt es spezifische Wachstumshemmnisse für die Bildung größerer Unternehmenseinheiten? Final project report submitted to the German Ministry of the Interior, Berlin: DIW econ (Mimeo).
https://www.beauftragte-neue-laender.de/BNL/Redaktion/DE/Downloads/Publikationen/kleinteiligkeit-der-ostdeutschen-wirtschaft-endbericht.pdf?__blob=publicationFile&v=5
- Mayntz, Renate. 1998. Socialist Academies of Sciences: the enforced orientation of basic research at user needs. *Research Policy* 27: 781-791.

- McClelland, David C. 1961. *The Achieving Society*. Princeton, NJ: Van Nostrand Reinhold.
- Myant, Martin, and Jan Drahokoupil. 2011. *Transition Economies: Political Economy in Russia, Eastern Europe, and Central Asia*. Hoboken (NJ): John Wiley & Sons.
- Newman, Karen. 2000. Organisational Transformation during an institutional upheaval. *Academy of Management Review* 25: 602-619.
- North, Douglass C. 1994. Economic performance through time. *American Economic Review* 84: 359–368.
- Park, Hyeong Jung, and Sahyun, Choi. 2014. Fiscal Segmentation and Economic Changes in North Korea, Study Series: 14-05, Korea Institute for National Unification.
- Pickel, Andreas. 1992. *Radical transitions: the survival and revival of entrepreneurship in the GDR*. Boulder (CO): Westview Press.
- Rona-Tas, Akos. 1994. The First Shall Be Last? Entrepreneurship and Communist Cadres in the Transition from Socialism. *American Journal of Sociology* 10: 40-69.
- Sander, B. 1995. Foreign investors's activities in the context of East German privatization: motivations and strategies. *MOCT-MOST* 5: 109-132.
- Seibel, Wolfgang. 2005. *Verwaltete Illusionen: Die Privatisierung der DDR-Wirtschaft durch die Treuhandanstalt und ihre Nachfolger 1990-2000*. Frankfurt/New York: Campus.
- Shingleton, Bradley A., Volker Ahrens, and Peter Ries. 1991. Property Rights in Eastern Germany: An overview of the amended property law. *Georgia Journal of International and Comparative Law* 21: 345-357.
- Silbereisen, Rainer K. 2016. Psychological Challenges of Unification – Selected Results and Thoughts on Korea. *Historical Social Research* 41 (in this issue).
- Sinn, Hans-Werner and Gerlinde Sinn. 1992. *Jumpstart. The Economic Unification of Germany*. Cambridge (MA): MIT Press.
- Stoica, Catalin A. 2004. From good communists to even better capitalists? Entrepreneurial pathways in post-Socialist Romania. *East European Politics and Societies* 18: 236-277.
- Thomas, Michael. 1996. How to Become an Entrepreneur in East Germany: Conditions, Steps and Effects of the Constitution of New Entrepreneurs. In *The Economic Impact of New Firms in Post-Socialist Countries: Bottom Up Transformation in Eastern Europe*, ed. Horst Brezinski and Michael Fritsch, 227–232, Cheltenham: Edward Elgar.
- Treuhandanstalt. 1994. *Dokumentation Treuhandanstalt 1990-1994*. 15 volumes. Berlin: Treuhandanstalt.

- van Ark, Bart. 1995. The Manufacturing Sector in East Germany: A Reassessment of Comparative Productivity Performance, 1950-1988. *Jahrbuch für Wirtschaftsgeschichte* 2: 75-100.
- van Ark, Bart. 1997. Convergence and divergence in the European periphery: productivity in Eastern and Southern Europe in retrospect. In *Quantitative Aspects of Post-War European Economic Growth*, ed., Bart van Ark, and Nicholas Crafts, 273-326, Cambridge: Cambridge University Press.
- Wahse, Jürgen, Vera Dahms, and Reinhard Schaefer. 1995. *Beschäftigungsperspektiven von Ex-Treuhandfirmen: Umfrage 10/1995*. Nuremberg: Institut für Arbeitsmarkt- und Berufsforschung.
- Williamson, Oliver. 2000. The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature* 38: 595–613.
- Wyrwich, Michael. 2010. Assessing the role of strategy and “socioeconomic heritage” for rapidly growing firms: Evidence from Germany. *International Journal for Entrepreneurial Venturing* 1: 245–263.
- Wyrwich, Michael. 2012. Regional entrepreneurial heritage in a socialist and a post-socialist economy. *Economic Geography* 88: 423-445.
- Wyrwich, Michael. 2013. Can socioeconomic heritage produce a lost generation with regard to entrepreneurship. *Journal of Business Venturing* 28: 667-682.
- Wyrwich, Michael, Stuetzer, Michael, and Rolf Sternberg. 2016. Entrepreneurial role models, fear of failure, and institutional approval of entrepreneurship: a tale of two regions, *Small Business Economics*. doi: 10.1007/s11187-015-9695-4.
- Yang, Moon-Soo. 2014. Reformulating South-North Korean Economic Integration. *Journal of Peace and Unification* 4: 25-53.