

# Heritage from Socialism and Economic Growth in Medium-Sized Cities – Results from Case Studies in East Germany\*

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**ABSTRACT** This paper looks at different categories of heritage from socialism and their impact on path dependencies for urban development: Had decisions in times of socialist central planning an impact and long-term consequences for cities, even after their return to a market economy? Combining approaches from the literature on regional path dependence and urban growth theory and analyzing case studies from cities in East Germany we identify a bundle of interdependent factors that led to lock-ins of the local economic systems and very limited opportunities for local policies to break with these established trajectories. However, our findings also suggest that socialist planning policies did not necessarily result in negative developments after the end of socialism. How and to what extent a city can even benefit from its socialist heritage is strongly dependent on the specific local, industrial as well as global institutional context.

## 1. Introduction

In succession to the rise of the “Iron Curtain”, cities in Central and Eastern Europe had to develop new institutional settings and strategies for coping with the conditions of interregional competition within a market economy. Within these new conditions, some cities have been more successful than others in enhancing interregional competitiveness and attracting or retaining businesses and residents. Various factors were relevant for these differences, including human capital, specialization or institutional aspects (Storper 2010). This paper is focusing on a group of factors which have been, so far, not systematically analyzed in the discussion about explanations for the economic development of post-socialist cities. We are looking at different categories of heritage from socialism and their impact on path dependencies for urban development: Had decisions in times of socialist central planning an impact and long-term consequences for cities, even after their return to a market economy?

The theoretical framework of the paper is inspired by works in regional and urban economics stressing the importance of historical accidents and path-dependencies (Arthur 1986, Krugman 1991, Martin and Sunley 2006) or intending to develop an “evolutionary” approach for explaining the spatial pattern of the economy (Boschma and Frenken 2006). Following these approaches, during the last years, some scholars have presented empirical results on the importance of historical decisions and developments for the present economic position of cities and regions. But most empirical studies deal with long term persistency and heritage from earlier periods of time (eg. Fritsch and Wyrwich 2014, 2016). In this paper, we want to look explicitly at changing situational factors under the socialist regime and to identify whether these changes were able to create path dependencies which are still relevant

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for the present economic performance of post-socialist cities. The basic idea is that during more than 40 years of socialism, politicians at the central level of government tried to create new conditions for the economic development of cities and regions<sup>1</sup>. These new conditions followed the logics of centralist planning and the specific needs of socialist countries, resulting especially from their disintegration from the global market and the abstinence from the international division of work as well as from pure ideological ideas. The allocation of specific functions was followed by the shift of fiscal means between cities and regions, favoring those cities which were regarded as most relevant for the socialist economy. In addition, also flows of migrants between cities and regions were initialized in order to change the social structure of local populations.

The questions we want to address in this paper is on the long-term consequences of these measures. Was socialist central planning policy (SCPP) able to create new development trajectories and path dependencies for cities and regions, which are still relevant today, more than 25 years after the return to a market economy? And if yes: What were the channels through which these path dependencies became established. Were those trajectories created by SCPPs new or just building on existing (pre-socialist) structures. Did the influence of SCPP result in strong lock-ins and decline of the local economies or were some cities able to turn its socialist heritage into new opportunities for local economic development? In general: What was the role of local policies within the restrictions, given by the heritage from socialism? Which strategies were successful in coping with post-socialist path dependencies and which strategies failed?

We want to answer these questions for a selection of cities in East Germany (the former GDR) which received certain treatments during times of socialism. Apart from Berlin, Dresden and Leipzig, the vast majority of East-German cities may be categorized as “medium-sized” and “slowly growing” or “shrinking” cities. But since the rise of the Iron Curtain drastic changes occurred within the East German urban hierarchy, which still need to be explained. Our empirical results so far show that in some areas, the heritage from socialism was – rather surprisingly – a positive asset for enabling cities to find a new niche in the process of interregional competition, which started immediately with the German reunification in 1990. However, in general the heritage from socialism was more a threat than a chance. Decisions from the past are still hindering these cities to adapt on new development trajectories. The possibilities of local actors to break with those predetermined paths are restricted. Centralist planning policies in combination with general formal and informal institutions of the GDR left rigid conditions, under which alternative opportunities for local economic development could hardly survive.

The article is structured as follows: First, we will give a brief overview on the existing literature on (1.) the role of history and path dependence for regional and urban economic growth, (2.) path dependence in the context of post-socialist economies and (3.) the driving forces for urban development in Central and Eastern European cities since 1990. This will be followed by a theoretical section which discusses different categories of historical heritage and path dependence in a post-socialist, urban context. After some short remarks on the methodology, the empirical results on the impact of changes from the time of socialism for the selected case studies of cities will be explained. In the final section, conclusions for future research as well as for local economic policies for post-socialist cities will be drawn. Given the treatment by the socialist planning in the past, we will discuss which local development strategies were more successful than others, and what could be learnt in general for local policymakers.

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<sup>1</sup> an overview on some of these measures for the city regions in East Germany is given by Bröcker and Richter 1999

## **2. Literature Review**

### **2.1 The Empirics of regional path dependence and “history matters”**

The seminal works of Paul A. David (e.g. 1985, 1994) and W. Brian Arthur (e.g. 1989, 1994) spreading the general idea of positive feedbacks of historical events and path dependence did not only provoke a lot of fruitful discussion and criticism (see e.g. Martin 2010) within the fields of regional economics and economic geography but also a steadily growing body of empirical literature. This literature strongly varies with regard to different concepts of history and path dependence as well as different empirical approaches. It is grounded on various schools of thought stressing different aspects of path dependence, hysteresis and historical persistence such as urban economics and new economic geography (Weinstein and Davis 2002, Brakman et al. 2004, Redding et al. 2011), evolutionary economic geography (Boschma and Wenting 2007, Boschma, et al. 2011, 2013, Neffke et al. 2011) or the literature on regional entrepreneurship (Fritsch and Wyrwich 2014, 2016, Stuetzer et al. 2016). Concluding on a meta study of path dependency research from the subfield of economic geography Henning et al. (2013: 1349) identify a “cacophony of studies rather than a purposeful accumulation of knowledge around the concept”.

From this heterogenous pool of research our approach might be mostly related to studies analyzing lock-in situations in old industrial areas like the German Ruhr Area (Grabher 1993) or Northern England (Hudson 1994). Particularly influential was the term “the weakness of strong ties” established by Grabher (1993) who identifies three different forms of lock-in (cognitive, functional and political) which caused the once successful networks of the local steel and coal industry to disregard the global development of the industry shifting towards low wage countries. Against the common trend and increased international competition investments in the region’s steel industry were growing during the 1970s. Glasmeier (1991) finds a similar reaction in case of the watch industry in the Swiss Jura region which heavily promoted innovation of mechanical technologies while the global industry was shifting towards microelectronics. Beyond those conservative reactions of old industrial clusters to globalization and technological change, Schamp (2005) finds by analyzing the decline of a shoe fabrication cluster in Pirmasens, Germany, that surviving firms either stayed in the region and left the industry or stayed in the industry and left the region.

Several other studies are more interested in how lock-in situations like the ones described above can be overcome. On the one hand, Tödtling and Trippl (2005) by comparing an automotive and a metal industry cluster in Styria, Austria, find that industry structure and the degree of regional specialization (mono-structure) are two major impact factors for the adaptive capabilities of a regional innovation system. On the other hand, Hassink (2010)<sup>2</sup> by comparing case studies of regional shipbuilding and textile clusters in Germany and Korea concludes that the strength of a lock-in can hardly be determined by the structure of an industry or the degree of local specialization alone. In each case a unique setting of institutional impact factors shaped the regional process of path dependence. Beyond the regional level Hassink also mentions national and supra-national institutions as highly relevant factor in identifying lock-ins on the regional level.

### **2.2. Postsocialism and regional path dependence**

Although the German division and reunification has served as a “natural experiment” in plenty of studies in empirical economics (see e.g. Redding and Sturm 2008, Redding et al. 2011) evidence on path dependencies created by the heritage of the GDR industrial policy as well as such policies in other post-socialist countries is quite rare. At least on the

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<sup>2</sup> Also see Hassink and Shin (2005a, 2005b) and Cho and Hassink (2009).

macroeconomic level Blum (2013) finds that East Germany even after reunification follows a relatively stable growth path extending from the 1950s and 1960s. Despite a short period of adjustment in the early 1990s East Germany has never managed to overcome its structural deficits stemming from its socialist heritage and the loss of company headquarters, human capital and innovative capacities.

On the regional or local level one has to consider that path dependencies and lock-ins in postsocialist countries are hardly comparable to those in market economies. While the processes in the latter are strongly place-dependent (Martin and Sunley 2006), path dependencies in socialist and postsocialist economies are to a large extent the product of centralist planning policies. This does not mean that local institutional arrangements like the “strong ties” explored by Grabher (1993) were irrelevant for the lock-in development of postsocialist cities and regions, but they were strongly dependent on ideology and decisions and made by the central government on which local agents had only limited impact.

Indeed one of the first researchers linking postsocialist transformation and evolutionary theory was again Grabher. In an joint essay with David Stark (Grabher and Stark 1997) the authors claimed that short term adaptations forced by the all-encompassing privatization and marketization might result in a loss of organisational diversity of regional economies in postsocialist countries which might impede adaptability in the long run.

Empirical studies on regional economic path dependence in the frame of post-socialist transformation are however until today limited to few qualitative case studies, primarily dealing with intra-firm, intra-cluster or intra-industry adaption processes. E.g. Bathelt and Boggs (2003) analyzed the evolution of the old (book publishing) and new (television/filmmaking) media clusters in the East German city of Leipzig. Their findings suggest that development paths of cities or regions are not homogeneous, but instead consist of bundles of various technological trajectories. Crises and shocks like the abrupt transition that occurred in East Germany create opportunities for previously marginal industries to arise and shape the future local development path. Moreover Bathelt (2009, 2013) studied the re-bundling process of firms within the chemical industry cluster in the East German region of Bitterfeld-Wolfen. Although he concludes that the region was overall not successful in leaving the path of broad de-industrialization after German reunification, he emphasizes on the role of individual actors in network building and stimulating a collective regional spirit which in the future may lead to a modernization of the regional economy.

### **2.3. The Transformation of post-socialist cities**

Since the majority of the aforementioned studies take a firm, cluster or industry focus, a research gap regarding more integrated perspectives on the urban or regional level can easily be identified. Since this article aims at taking such a comprehensive urban perspective it also has to be set in the context of the literature on the transformation and economic re-positioning of post-socialist cities.

Within the broad field of interdisciplinary urban studies a remarkable amount of research has been dedicated analyzing the dynamics of post-socialist transformation cities. However most of this literature deals with intra-urban processes of socio-structural fragmentation and arising challenges for urban planning and governance (see Kubeš 2013). As far as known to the authors very few of these studies explicitly focuses on path dependencies stemming from socialist times. And amongst those who do so (e.g. Hamilton et al. 2005, Bouzarovski et al. 2016) none are rooted in the recent discussions on regional economic path dependency.

What in general distinguishes post-socialist cities from other cities in market economies facing the challenges structural change is that the transformation from fordist to post-fordist modes of production was rather a ‘shock therapy’ than a gradual process to them. Particularly in East Germany – the only case where a former planning economy became integrated into a capitalist country “overnight” – cities had to catch-up to various economic and social

developments that took place in Western countries between 1945 and 1990 (Kovacs 1999, Bontjes 2004). Most state-owned enterprises did not survive the re-privatization process leading to plant closures and massive job losses. Moreover, new investors preferred to allocate new business parks in suburban areas rather than redeveloping the poorly accessible highly polluted inner city industrial districts (Burdack and Rudolph 2001). This development was accompanied by a huge wave of residential suburbanization, a phenomenon hardly known under socialist rule. The neglect of old housing in the inner city residential areas during times of socialism led to a rapid loss of attractiveness compared to suburban environments. This again resulted in population losses and a strong polarization of housing markets (Häussermann 1996).

Of course, the abovementioned transformation process created ‘winner’ and ‘loser’ cities. Taking a more global perspective, Tsenkova (2009) discovers a fragmentation of the post-socialist urban hierarchy with arising new commercial and industrial centers mainly in capital cities and cities with important economic hub functions. On the other hand many small and medium-sized cities are experiencing ongoing decline. Particularly cities with strong old industrial heritage will require considerable efforts in order to improve their economic competitiveness and urban quality.

Tsenkova also mentions arising political conflicts in the course of institutional transformation and new forms of governance. Focussing on developmental problems of East German inner cities Franz (2000) identifies a clash of two urban regimes (the “conservation regime” and the “globalization regime”) and a lack of “local alliance” to overcome the governance problems of post-socialist cities. Furthermore some research (Bernt 2009, Hospers 2014) has spread severe doubts if common urban policies and growth strategies are fitting to the needs of shrinking cities in post-socialist (and also Western) countries. More recent approaches suggest new policies of accepting shrinkage and improving general conditions of living by stimulating civic engagement since traditional growth policies are hardly implementable in shrinking cities with limited fiscal revenues and strong dependence on external (public or private) grants and investments (Hospers 2014). From an empirical perspective, there is no clear answer to the question for the right strategy. Concluding on case studies from Chinese mining cities Ze et al. (2017) state that each city has its own specific context. While some might be successful in adapting towards new growth paths, others might be better off in accepting urban shrinkage. In an article from 2004 Bontjes gives a rather modest perspective for the East German city of Leipzig, recommending strategies of accepting urban shrinkage instead of overly optimistic growth scenarios. Only ten years later Leipzig has developed into one of the fastest growing cities in Germany. The case of Leipzig exemplifies how hardly predictable the future developments of post-socialist cities are. Between 1990 and 2000 almost all cities in East Germany had to deal with severe urban shrinkage. But within the last 15 years some cities started to stabilize and few shifted towards new growth paths while others continued to shrink (Kauffmann 2015a). These unequal developments certainly show the need for a long-term perspective on the development of post-socialist cities. This paper aims at filling this research gap. Taking into account path dependencies of all important developments shaping the growth paths of cities since World War II we want to find out why and how some cities managed to develop new growth trajectories within the transformation process while others are continually declining.

### **3. Theoretical framework**

For several reasons, socialist central planning policy (SCPP) in the GDR – like in the other countries of the former soviet bloc – tried to change the existing initial conditions for economic life of the country as a whole as well as for individual regions and cities by making use of different measures. (Bröcker and Richter 1999) Our general hypothesis is that this “treatment” by SCPP had in some cases (under certain conditions) long-lasting impacts for the

economic performance of cities even after their return to the market economy. These long-lasting local economic impacts of SCPP may be discussed in terms of the existing literature on (regional) path dependencies, as described in Section 2. Starting from the canonical path dependence model after David (1985) and following its discussion in Martin (2010) and Simmie (2012), TABLE 1 gives a comprehensive overview on possible interrelations between existing initial local conditions and changing conditions – as introduced by SCPP – with the potential to create path dependencies. Some of these policy measures could also be introduced within a market economy (e.g. investment in public infrastructure), while other measures would only be possible under the rule of a totalitarian regime.

With regard to differentiate between categories of initial conditions (the vertical dimension of TABLE 1, first column), we refer to the existing literature on determinants of urban economic growth, particularly to Storper's (2010, 2013) well-known structuring of growth conditions into the three main groups "specialization", "human capital" and "institutions". Each row is devoted to one group of determinants. We start with the category of basic "geographical factors" (not mentioned by Storper), followed by "specialization" and "human capital". Last but not least, we distinguish between "formal institutions" and "informal institutions". Of course, one has to consider (and Storper explicitly mentions these interrelations) that all of these are interdependent. The educational institutions within a city influence the formation of human capital, social capital (as defined by Putnam 1995) influences the degree and kind of entrepreneurship, historical urban structures and industrial specialization influence local image and identity and so forth. With regard to the concrete situation in East Germany after World War II, all these factors for the initial potentials for economic growth were of course differing among cities and regions.

The second column in TABLE 1 is focusing on the possible categories of SCPP-measures, targeting to change the initial growth determinants as categorized in column one ("Possible path creation by SCPP"). We refer to those measures which were – according to our case studies and the existing literature on the history of the GDR – really implemented after World War II. Some of the measures in column two were directed to all cities and regions, without favoring or disfavoring certain places; these measures are marked with \* in TABLE 1. Other measures were mainly in favor of certain cities or regions and/or had a specific design for driving the development of certain cities in a certain direction. Column three then illustrates the various possible channels within each category leading to a rigidification of the new trajectories initialized by SCPP. In the literature on path dependence this phase is known as "path establishment".

Consequently, column four in TABLE 1 describes the possible final outcome or lock-in of the path dependence process after the end of the GDR while column five illustrates the phase of "path dissolution" following the German reunification shock, where the local economy (embedded in local and supra-regional institutions) aims to reorient towards new development trajectories. Within this phase different options are possible. (1.) The local structures are successful in adapting towards new growth paths or (2.) the lock-in initialized by SCPP is too strong and the local economy fails at creating new opportunities for economic growth (see Martin 2010 and Simmie 2012).

TABLE 1: Possible Path Dependence Process due to Socialist Central Planning Policies

Initial conditions / factors for urban economic growth	Path creation by SCPP	Path establishment	Path dependence outcome (at the end of GDR)	Path dissolution and new orientation after reunification
<b>Basic geographical factors</b> <ul style="list-style-type: none"> <li>Spatial location and natural resources</li> <li>Postwar delineation of GDR-territory</li> <li>Historic urban structure and cityscape</li> <li>Level of war destruction</li> </ul>	<ul style="list-style-type: none"> <li>General spatial re-orientation of GDR economy from East-West to North-South*</li> <li>Urban renewal according to socialist urban planning ideas *</li> <li>Destruction of historic administrative territories*</li> </ul>	<ul style="list-style-type: none"> <li>Establishment of new neighborhoods (socialist housing)*</li> <li>Deterioration of historical buildings</li> <li>Prevention of urban sprawl and private residential property*</li> <li>Prevention of private investments in existing housing*</li> </ul>	<ul style="list-style-type: none"> <li>Lack of urbanity*</li> <li>“Unattractive” cityscapes</li> </ul>	<ul style="list-style-type: none"> <li>Suburbanization/Urban Sprawl*</li> <li>Residential Segregation*</li> <li>Territorial reforms at the municipal level</li> </ul>
<b>Specialization</b> <ul style="list-style-type: none"> <li>Local historic economic structures (industries and networks)</li> <li>National and international sales markets</li> </ul>	<ul style="list-style-type: none"> <li>Restructuring the economy in direction of autarky, independence from West German industries*</li> <li>Reorientation of sales markets towards socialist partner countries*</li> <li>Creating new industrial districts in rural areas</li> </ul>	<ul style="list-style-type: none"> <li>Investments in fixed assets (old or new industries)</li> <li>Marginalisation of other industries</li> <li>Neglection of world market trends*</li> <li>Investments in certain technologies</li> <li>Infrastructure directed towards core industries</li> </ul>	<ul style="list-style-type: none"> <li>Local specialization in few core industries</li> <li>Low productivity and outdated technologies</li> </ul>	<ul style="list-style-type: none"> <li>Abrupt re-integration into the world market*</li> <li>Cease of former sales markets in socialist partner countries*</li> <li>Western direct investments</li> <li>De-industrialization vs. new path creation</li> </ul>
<b>Human capital</b> <ul style="list-style-type: none"> <li>General structure of the labor force</li> <li>Business climate/culture of entrepreneurship</li> </ul>	<ul style="list-style-type: none"> <li>Migration of entrepreneurs to West Germany*</li> <li>Migration of industrial workers into rural areas in the North</li> </ul>	<ul style="list-style-type: none"> <li>Specialization of education according to the needs of the local economy</li> <li>Opression of entrepreneurial activities*</li> </ul>	<ul style="list-style-type: none"> <li>Human capital highly specialised according to core industries</li> <li>Lack of entrepreneurship*</li> </ul>	<ul style="list-style-type: none"> <li>Migration of skilled labor towards Western Germany*</li> <li>Return of entrepreneurs/ entrepreneurial activity?</li> </ul>
<b>Formal institutions</b> <ul style="list-style-type: none"> <li>Local governance</li> <li>Administrative status of cities</li> <li>Public units for research and education</li> <li>General system of economic incentives</li> <li>Urban land use regulations</li> </ul>	<ul style="list-style-type: none"> <li>Loss of local self-governance*</li> <li>Boosting the administrative status of some cities</li> <li>Reorganization of the research and educational system*</li> <li>Socialization of private businesses*</li> <li>Changing economic incentives*</li> <li>Establishment of socialist model cities</li> </ul>	<ul style="list-style-type: none"> <li>Strong influence of the central government on local administration and development*</li> </ul>	<ul style="list-style-type: none"> <li>Lack of experience and experts for local development processes*</li> </ul>	<ul style="list-style-type: none"> <li>Regain of local self-governance*</li> <li>Reallocation of administrative functions</li> <li>Reorganisation of educational institutions*</li> <li>Restructuring and re-privatization of firms*</li> </ul>
<b>Informal institutions</b> <ul style="list-style-type: none"> <li>Social structure and social capital</li> <li>Image and local identity</li> </ul>	<ul style="list-style-type: none"> <li>Reorganization and strong regulation of social life*</li> </ul>	<ul style="list-style-type: none"> <li>Massive changes in population and social structure</li> <li>Opression of civic engagement*</li> <li>Changing image and identity</li> <li>Loss of historical identity</li> </ul>	<ul style="list-style-type: none"> <li>Lack of trust and social capital*</li> <li>Lack of local identity</li> <li>Negative image and self-perception</li> </ul>	<ul style="list-style-type: none"> <li>Regeneration of social capital?</li> <li>New formation of local identity?</li> </ul>

#### **4. Empirical methodology and selection of case study cities**

As mentioned by Henning, et al. (2013) the empirical literature on path dependence is very heterogenous and strongly varies between different notions of the subject itself as well as quantitative and qualitative research designs. This paper forms part of the historical as well as qualitative strand of the literature building up on two case studies on East German cities which were in different ways affected by the centralist economic policy of the GDR: Chemnitz and Rostock. Between summer 2015 and spring 2016 on total 15 semi-structured interviews with mayors, city councillors, representatives of local job agencies, business development agencies, business associations and major local businesses as well as critical observers<sup>3</sup> were conducted. The interviews took on average between 45 to 90 minutes and were part of larger project on East German and Polish cities in the process of postsocialist transformation and European integration. Furthermore available official statistics on major socioeconomic indicators<sup>4</sup> as well as documents like town chronicles, newspaper articles, local urban development strategy papers and former scientific studies on the cities in question were used to complement and verify the data collected during the interviews.

The selection of case cities followed our theoretical considerations on possible public measures to support local economic development. Both case cities had outstanding importance for the GDR economy and each the received some kind of special treatment by the GDR-regime, resulting in significant growth between 1945 and 1989.

Chemnitz is the largest city in the southern part of the state of Saxony with around 300.000 inhabitants in 1990. Since Chemnitz always was an important industrial location, it has been a special objective of GDR policy. During socialist times its name was changed into Karl Marx Stadt in order to create some kind of socialist model city. However major investments were allocated in existing industrial clusters rather than creating new development paths. After a relatively long period of shrinkage in succession to the German reunification, Chemnitz nowadays can be categorized as slowly growing city.

Rostock is the largest city in the northern state of Mecklenburg Western Pomerania with around 250.000 inhabitants in 1990. During socialist times it became the most important port city of the GDR, including massive investment into infrastructure and fixed assets in the newly established ship building industry. Following a period of drastic shrinkage after the German reunification Rostock was continuously growing for the last 15 years.

Based on our theoretical framework from Section 3 the analysis of each case study is structured into four sections, illustrating (1.) the initial conditions of the local economy after World War II, (2.) the possible phase of path creation and path establishment during socialist times, (3.) the resulting locked in conditions after the end of the GDR and (4.) the phase of re-orientation after 1990: Was it possible to adapt towards new growth paths or are the legacies of the socialist past still hindering the city in developing new opportunities for economic prosperity.

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<sup>3</sup> such as scientists, publicists or representatives of the local press

<sup>4</sup> Note that the data availability on economic indicators from GDR times and the early transformation years is in general very poor at least on the municipal and county level. The comparability over time is also disrupted by several territorial reforms that took place since 1990. The post 1990 data therefore had to be adjusted to present administrative territories. For the method of adjustment see Kauffmann (2015).



## **5. Empirical Results**

### **5.1 Chemnitz**

#### **5.1.1. Initial conditions**

During the 19<sup>th</sup> and early 20<sup>th</sup> century Chemnitz developed into one of the most important industrial centers in Germany and was colloquially called the “German Manchester” with the highest gross value added amongst all German cities. The pillars of this economic rise were the textile industry and machine engineering followed by some other important industries like iron foundry, metal processing, chemical industries, electrical engineering and bicycle manufacturing. These two main industries were later completed by the automotive sector due to the establishment of the headquarter of Auto Union, one of the major players within the German automotive industry (Viertel and Weingart 2002). The industrial rise of Chemnitz resulted in strong population growth. In 1930, the city reached its highest population level of more than 360.000 inhabitants.

During World War II the local production was largely focused on military hardware, particularly engines for tanks. In consequence Chemnitz became an important aim for allied air strikes. In the last years of the war, large parts of the city were destroyed, involving almost the complete city center and the production sites of Auto Union. After the end of the war, the executives of Auto Union fled and relocated the company to Ingolstadt, Bavaria, where it evolved into *AUDI*, nowadays an important branch within the *Volkswagen* group. In May 1945 Chemnitz was finally occupied by Soviet troops (Viertel and Weingart 2002).

#### **5.1.2. Path creation and establishment due to treatment by SCPP**

Because of its important role for the East German manufacturing industry Chemnitz became one of the GDR government’s prestige projects in transforming an industrial city into a socialist model city. In 1952 Chemnitz became the capital of a district (Bezirk) with more than two million inhabitants. Just one year later the city and district were renamed into Karl Marx Stadt. The name change was a turning point for the reconstruction of the city after World War II. While the early reconstruction process during the late 1940s and early 1950s was aiming at maintaining pre-war structures and reconstructing historical buildings, the city was from now on rebuilt according to the ideas of socialist planning. This resulted in the demolition of some of the few remaining historical structures within the city center which survived allied bombing and led to the establishment of new residential areas in the style of socialist prefabricated building (Viertel and Weingart 2002).

Due to the historical status of an important industrial city before the foundation of the GDR, no attempts by the central government were made to establish completely new industries in Karl Marx Stadt. Although private enterprises had been nationalized and consolidated, the historically grown economic structures of the city were maintained (c.f. Interview I.b., I.c. and I.e.). Due to the relatively low level of investments into local industries, the city’s population grew only moderately compared to other cities affected by SCPP. It reached its highest post-war level of around 320.000 inhabitants within the first half of the 1980s (see FIGURE 1).

Another aspect of SCPP in Karl Marx Stadt was to turn the former vocational school focused in engineering and manufacturing (“Technische Lehranstalt”) into a technical college (“Hochschule für Maschinenbau”). The college was gradually upgraded and finally achieved full university status (“Technische Universität”) in 1986 (Hermes 2003).

#### **5.1.3. Outcome of SCPP in 1990**

Although Chemnitz was turned into the socialist model city Karl Marx Stadt, its industrial structure remained relatively unaffected by SCPP. While the urban structures were drastically transformed during GDR times, the city’s economy was able to maintain its historical strength

in manufacturing. Almost one fifth of the GDR industrial production were concentrated in Karl Marx Stadt. In 1989 almost every second employee in the district of Karl Marx Stadt was employed within the manufacturing sector. The two main pillars were machine tools and textile machines. Within the large GDR style combines some of the pre-socialist structures of small and medium-sized firms were preserved (IHK Chemnitz 2011). Even though these firms were strongly regulated by centralist planning and any kind of entrepreneurship was systematically oppressed, some of their products and technologies had international success, particularly on the markets of Eastern Europe. The city had strong trade relations to other socialist countries (c.f. Interview I.g.).

Beyond being an important industrial center for the whole national economy Karl Marx Stadt was also the administrative and cultural center of the most densely populated GDR district. Particularly the local theatre and the event venue *Stadthalle Karl Marx Stadt* were of supra-regional importance. Moreover, the city gained international popularity being one of the centers of GDR elite sports (c.f. Interview I.a. and. I.g.).

#### 5.1.4. New Orientations since 1990

**Path dissolution.** After the German reunification the local manufacturing industries in Chemnitz and the surrounding areas rapidly lost their competitiveness within the globalized market economy. The cease of former major sales markets in Eastern Europe resulted in a massive breakdown of the local economy, high unemployment rates and a long-lasting emigration of labor. During the 1990s the two major industries textile and engineering were at least psychologically considered to be “dead”, resulting in a negative perception and self-perception of Chemnitz as industrial city (c.f. Interview I.c. and I.f.). According to some statements from the interviews another important psychological factor leading to a loss of local identity was the name change into Karl Marx Stadt. Even though the city returned to its old name after a local referendum in 1990 the self-image of the once proud industrial city was sustainably damaged (c.f. Interview I.a. and I.b.).

The negative image is furthermore strongly related to the urban landscape being heavily influenced by socialist urban planning, particularly in the city center. In the words of some of the interviewees “the city has been destroyed twice”, first by allied bombing and second by reconstruction under the socialist regime. The result is a rather extensive city center with low attraction for shopping and tourism activities (c.f. Interview I.c.).

**New Orientation.** After a long period suffering from structural and demographic change, Chemnitz slowly started to recover. Since 2005 the population level remains stable at a level of around 250.000 inhabitants with a slightly positive tendency. Unemployment rates are significantly decreasing. The main reason for this recovery can be found in a relatively high innovativeness and export orientation of the local enterprises at least in East German comparison. Surprisingly the gradual economic comeback of Chemnitz is following old industrial paths. The automotive industry as well as mechanical engineering remained the core sectors supplemented by related industries like microsystem technology, material and coating technology, metal processing and automatization engineering. Other than in East German regions, where the industrial structures were extensively shaped by SCPP, the denationalization process of businesses in Chemnitz was relatively successful. Due to the aforementioned preservation of the pre-socialist small-scale structures parts of the combines could be taken on by local entrepreneurs and Western investors. The number of applications for re-privatization was higher than in all other former GDR districts (IHK Chemnitz 2011). The interviewees also mentioned the important role of individual actors and entrepreneurs showing strong identification with the region within this re-privatization process (cf. Interview I.a. and I.c.). Perhaps the most prominent example for this kind of regional entrepreneurial spirit is Niles-Simmons, which was acquired by a German-American investor, rooted in the region, and is nowadays world market leader in the manufacturing of machine

tools for railway wheelsets (Naumann and Müller 2014). Another outstanding example is UnionChemnitz, a machine tool manufacturer, which was after its insolvency in 1996 newly established as employee company with high individual risks for the shareholders (Bock 2002).

The local structures are dominated by networks of small and medium sized enterprises. A comparatively large share of these companies can be categorized as so-called “hidden champions”, holding large world market shares within their niche (IHK Chemnitz 2016). From the perspective of one of our interviewees the international success of local firms can be traced back to the high export orientation of Chemnitz and experience on international markets during socialist times (c.f. Interview I.g.).

The renowned university focused in technical subjects and two associated Fraunhofer institutes play – according to our interviews – a crucial role for the local networks since large shares of r&d activities of the local businesses are related to cooperation with the *TU Chemnitz*, which additionally serves as an important labor pool for the enterprises (c.f. Interview I.a.). One major problem in this respect is the ongoing brain drain towards West German regions. Although the wages in technical professions are above the East German average, they still lack far behind the core industrial regions in the West (c.f. Interview I.d.). This gap is particularly related to a lack of large multinational enterprises and key investments. Except for the establishment of *Volkswagen* the region has not received any important subsidies neither from the private nor from the public sector (c.f. Interview I.a. and I.b.).

Even though the local economy has recovered from its breakdown in the 1990s, the perception of Chemnitz from the inside as well as from the outside is still negative. However – as stated by one of our interviewees – the global financial and economic crisis from 2008 could have been a turning point for the self-perception of Chemnitz. Having survived the harsh economic transformations of the 1990s the small-scale structures of the local industries proved to be more resilient towards the crisis compared to other regions. This led to a shift in the local self-perception as an industrial city (c.f. Interview I.c.).

## **5.2 Rostock**

### **5.2.1 Initial conditions**

After WW2, following the loss of former German territory to Poland and the separation between East and West Germany, Rostock reached a new spatial and – for the GDR – central position on the East German Baltic coast.

The shipbuilding industry has – similar to other port cities – a long tradition for Rostock. In the 19<sup>th</sup> century, the “Neptun Shipyard Company” was founded as one of the leading German businesses for constructing steel ships. During the Nazi era and following the objective to strengthen Germany’s military potentials, Rostock became also a relevant place for aerospace industry. In addition, the Nazi regime also boosted the capacities of the shipbuilding industry. The port of Rostock was just of regional importance for commercial shipping; the main ports for the East German economy were Hamburg and Szczecin. With regard to the German navy, Rostock’s “Hohe Düne” was since World War I an important airport for navy aircrafts, but had just a regional importance for navy ships.

In the years before World War II, the labor market was dominated by few big firms, producing equipment for the German armed forces. Hence, there has been just a limited tradition for medium sized private businesses and entrepreneurship (cf. Interview II.d.). Rostock’s university has a very long tradition but had no important role for the economic development of the city before World War II.

Finally, with regard to informal institutions, the status of being a “Hanseatic” city played always a role for the image of Rostock, stemming from medieval times, when Rostock was one of the leading partners within the Hanseatic League.

### **5.2.2 Path creation and establishment by SCPP**

Since the GDR regime wanted the GDR to become independent from other countries (and the use of their ports) in the field of international trade, it was decided to establish a completely new international sea port for the GDR (the so-called “Überseehafen”) and to bring massive support to the already existing maritime cluster in Rostock. In addition to the importance of the new port for international trade, SCPP aimed at supporting the fishing industry by expanding the East German fishing fleet and the port facilities for this fleet, as well as the capacities of the fishing industry.

As there were just small docks and port facilities in Rostock (the so-called “Stadthafen”), this development could only be achieved by massive investments into new docks, port facilities and train connections as well as roads between the Überseehafen and the hinterland. In addition, there was a need for new ships. Therefore, also massive investment into the shipbuilding industry in Rostock (as well as in Wismar and Stralsund, the other two main seaports of the GDR) had to take place. The fleet of commercial ships was operated by the big state-owned “German Shipping Company” (“DSR”) with its headquarter in Rostock.

Because of Rostock’s central position at the East German Baltic coast, the city also became an important place for the GDR navy and for military aircrafts. In 1984 a new military airport was opened near the township of Laage, south of Rostock.

For implementing all these plans of SCPP, the stock of labor and human capital in Rostock was not sufficient. Workers from all over East Germany were needed. Especially for the shipbuilding industry, engineers had to be hired. Relevant qualifications could mainly be found in the southern parts of the GDR. Therefore, SCPP offered special incentives to migrate to Rostock: New and modern dwellings (in pre-fabricated buildings) near to the Baltic coast (one of the most attractive areas for tourism in East Germany) and far away from old industries and air pollution, as well as high salaries. In addition, the image of Rostock was positively influenced – although the city had and has no outstanding cultural attractions (apart from the Astronomic Clock in St. Mary’s Church) – by spreading the idea of “working for progress of the nation” and by changing the administrative status of Rostock into a district capital. Between 1958 and 1975, the international importance of Rostock was underlined by the annual cultural event of the so-called “Baltic Sea Week” which took place in the city of Rostock and other places of the Rostock district. Some parts of the historic city center which had been destroyed in the war were – in the 1970s – reconstructed in the old style; other parts were newly constructed, but in a special “Hanseatic Style”, citing elements from traditional buildings in Northern Germany. Following all these measures, there was a population increase during the GDR era of about 150,000 inhabitants. Rostock was seen as the “GDR’s Gate to the World”. People living in Rostock may have had the impression to be a kind of “elite” within the system of SCPP. Migrants from other regions approved this image and have developed rather soon to a strong personal identification with the city and its harbor.

### **5.2.3 Outcome of SCPP in 1990**

In the end of the GDR era, commercial ships from Rostock were visible all over the world. Tens of thousands of workers were employed in the shipbuilding industry. The industry was specialized in producing ships for the Soviet Union. Some of the relevant, modern parts of the equipment for the ships were not built in the GDR but imported from Western countries and the shipbuilding industry remained at the technological level of the 1950s (cf. Interview II.d). Therefore, the potentials for an international competitive development in this sector were quite limited. Furthermore, the capacities of the fishing industry were already reduced during the 1980s.

#### 5.2.4 New Orientations since 1990

**Path Dissolution.** In general, Schoeler's (1999: 151) thesis of "structural change as the most relevant source of local economic development" may be applied for explaining the evolution in Rostock since 1990. But moreover, some other factors had relevant impact on Rostock's economic depression and (partial) recovery.

After the German reunification, Rostock's international seaport was not able to work competitively. It was cheaper to export or import goods from and for, respectively, East Germany through the port of Hamburg than making use of Rostock and the long way through the Baltic sea and the Kiel Canal to the Atlantic Ocean. The port was turned back from an international to a regional harbor. Following the problems of the international seaport, the DSR collapsed to a large extent. Moreover, the fishing industry and the shipbuilding industry collapsed more or less totally, although at first, the federal and the state government have tried to support the latter with massive subsidies.

**New Orientation.** In succession to the breakdown after 1990, general structural change worked in favor of Rostock. Resulting from European integration and globalization tendencies, ferry traffic emerged as a strongly growing sector all around the Baltic sea. Thanks to the existent docks from GDR times and the city's favorable spatial location, Rostock was able to attract relevant shares of this ferry traffic. Although ferry traffic may expand in the future, there are some risks for Rostock. Firstly, the tunnel under the Fehmarn Belt could lead to shrinking demand for ferry traffic. Secondly, in the long run, Szczecin may become a relevant competitor. Thirdly, improved railway systems to the Baltic states and Russia may substitute parts of the ferry traffic.

A second category of positive structural changes was the evolution and strong growth of the cruise line business. It was possible to restructure the old ferry harbor into a terminal for cruise liners. As the DSR was already active in the cruise line business before 1990, one part of the DSR was privatized as a special shipping company for cruise liners (Interview II.a) This company later transformed into the "AIDA shipping company", with its headquarters still in Rostock. Apart from AIDA, also other cruise line companies start their cruises in Rostock. Relevant location factors for AIDA and other shipping companies were the spatial proximity to Berlin and the existence of the airport in Laage. Although the airport is owned by the German Federal Forces, it has been opened for civil flights since 1992 and was modernized after 1990. Since AIDA cruise lines have been sold to Costa cruise lines, a subsidiary company of US-UK Carnival Corporation, the AIDA headquarters are today just sub-headquarters. According to the interviewees, the capacities for cruise liners in Rostock (capacities for ships and tourists) are limited and future extensions will probably not be possible (cf. Interview II.e).

Tourism, particularly daytrip tourism, is seen as a relevant sector for Rostock, since it contributes to a high purchasing power and an attractive retail industry. As the city has just a few outstanding touristic amenities, local decision makers tried to make the city more attractive by changing brownfield areas into a park as the site for an International Gardening Exhibition ("IGA") in 2003 and by building a tropical exhibit within the Rostock Zoo, the so-called "Darwineum"(cf. Interview II.e). But so far, the impacts of these investments on tourism are quite limited. A relevant attraction for tourists and people living in Rostock is the arrival and departure of mega cruise liners in front of the old parts of Rostock-Warnemuende ("cruise watching").

Finally, also structural change in the sense of an increasing global demand for sea port equipment was in favor of Rostock. After one of the port basins of the (former) international harbor was filled up again, it was possible to develop a site for manufacturing industries, particularly for building dockside cranes. This arrangement is a special location advantage of Rostock, which allows that produced cranes can be loaded directly on ships which will transport the cranes to other seaports (cf. Interview II.a), somewhere in the world. The plans

for restructuring the harbor, especially by transforming a harbor basin into a site for production, were discussed in the public quite controversially. Apart from this advantage, also subsidies played a role for attracting a big dockside crane manufacturing firm.

Although Schwerin has become the state capital of Mecklenburg West-Pomerania, some relevant parts of the state administration are localized in Rostock. In addition, in 2012 the German Federal Navy also relocated its Central Commanding Unit to Rostock.

Although the structural problems after 1990 led to massive unemployment and the migration of many people to West Germany, the general image of the city remained quite positive. To some extent, the effect of GDR propaganda is persistent until today. In addition, major coastal cities are quite rare in Germany (just Kiel and Luebeck also meet this criterion), offering a special image for Rostock (cf. Interview II.a). Moreover, the already mentioned tradition as a former “Hanseatic City” was very helpful for shaping the image of the city today.

The “in-between position” of Rostock (between Hamburg, Berlin, Copenhagen, Szczecin) may allow that the city will become a real regional center in the sense of a “Regiopolis”. This position is already contributing to a high purchasing power and an attractive retail industry in Rostock – with advantages for people living in Rostock.

Like in other East German cities after 1990, policymakers have tried to make use of the research potentials in the public sector for supporting private firms. A major producer of Wind-power plants (NORDEX) shifted parts of his production to Rostock and cooperates with the local Fraunhofer research institute. Moreover, some firms from the Rostock Business Incubator are developing modern electronic devices for ships. Another initiative was the attempt to support the cluster of medical engineering in Rostock, with the help of new technologies, originated from spin-offs from the Rostock university (cf. Interview II.a; Interview II.c).

## **6. Discussion and preliminary conclusions**

The empirical results, so far, make clear that SCPP have played quite different roles for the development and the present state of the two cities under observation.

Beyond its status as socialist model city and its name change into Karl Marx Stadt, which left severe damages to local identity, Chemnitz remained ironically relatively unaffected by SCPP. The “conservation” of pre-socialist industrial structures within the large combines and the networks associated with local university are nowadays key components of Chemnitz’ economic revival. After a long period of decline, the city seems to be slowly rediscovering its industrial heritage and entrepreneurial culture. It has developed stable structures of small and medium sized businesses and a relatively high amount of related variety but lacks headquarters of large multinational enterprises with the ability to make key investments which could substantially boost the economic development of the city and its surrounding region.

After severe economic problems in the 1990s, Rostock’s economy has recently stabilized at an intermediate level of performance. Surprisingly, some parts of the heritage from Socialism have played a positive role for this stabilization, in combination with general structural changes. But how long these changes will be able to work in future in favor of the economic development is quite unclear. And it seems not realistic to assume that the factors for the positive development of some branches of the industry have the potential for a relevant future expansion of these branches. In addition, a great part of the new developments is linked to traditional or low-tech sectors (ferries, cruise liners, tourism).

With regard to possible conclusions from our case studies for policymakers at the local and at the federal level of government, the re-use of a harbor basin in Rostock is a good example for illustrating that the readiness of local policymakers to reinvent and give up old industrial structures is necessary for adapting towards new growth trajectories for the urban economy.

Finally, taking a look at our more general questions: Yes, history really matters! Without the mega-investments due to SCPP in Rostock, some of the positive developments would probably not have taken place. The general attempt to divert trade flows by building a new international harbor was only rational under the special rule of SCPP – but later on, this allowed policymakers to change a harbor basin into a site for the modern crane building industry. Moreover, for both case cities, their images, as created during times of socialism, are still relevant today. Whereas the image of Rostock was pushed in a positive way, Chemnitz was influenced more negatively as it became popular as socialist model city. Nevertheless, some influence from history on today's economic structures can be traced back to much older developments than SCPP. This is especially true for the entrepreneurial culture and recovery of medium sized businesses in Chemnitz, while in Rostock, there has been a longer tradition of big corporations. The impacts of SCPP on cities will continue in future. But older patterns, developed long before the invention of Socialism, may be, in the long run, much more persistent for urban development than just forty years of SCPP.

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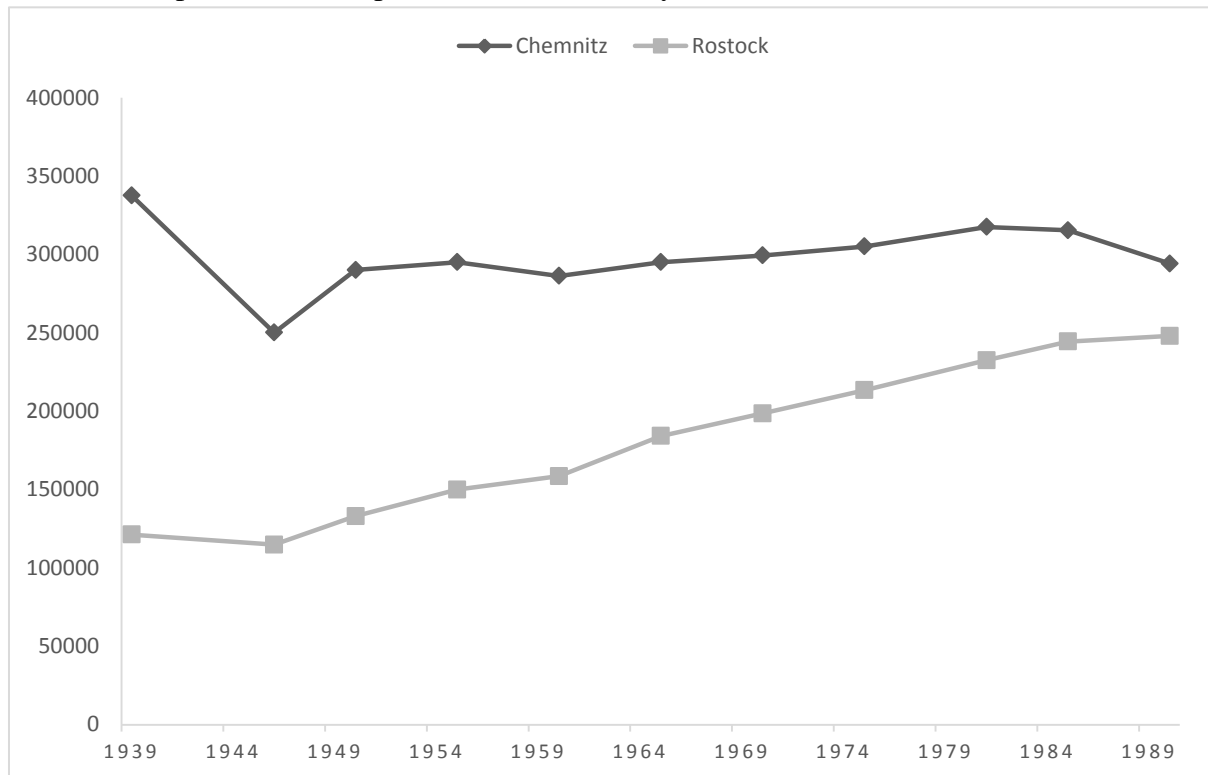
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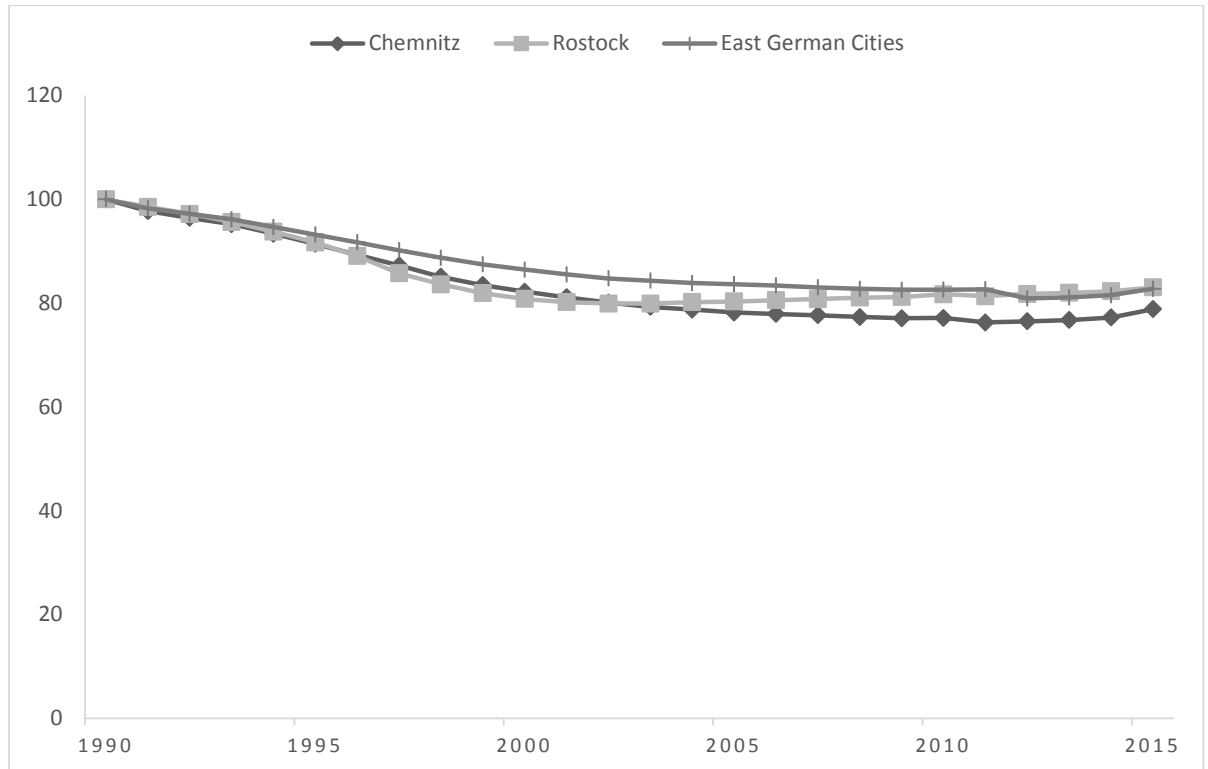
## Appendix I: Figures and tables

FIGURE 1. Population development of the case study cities before 1990



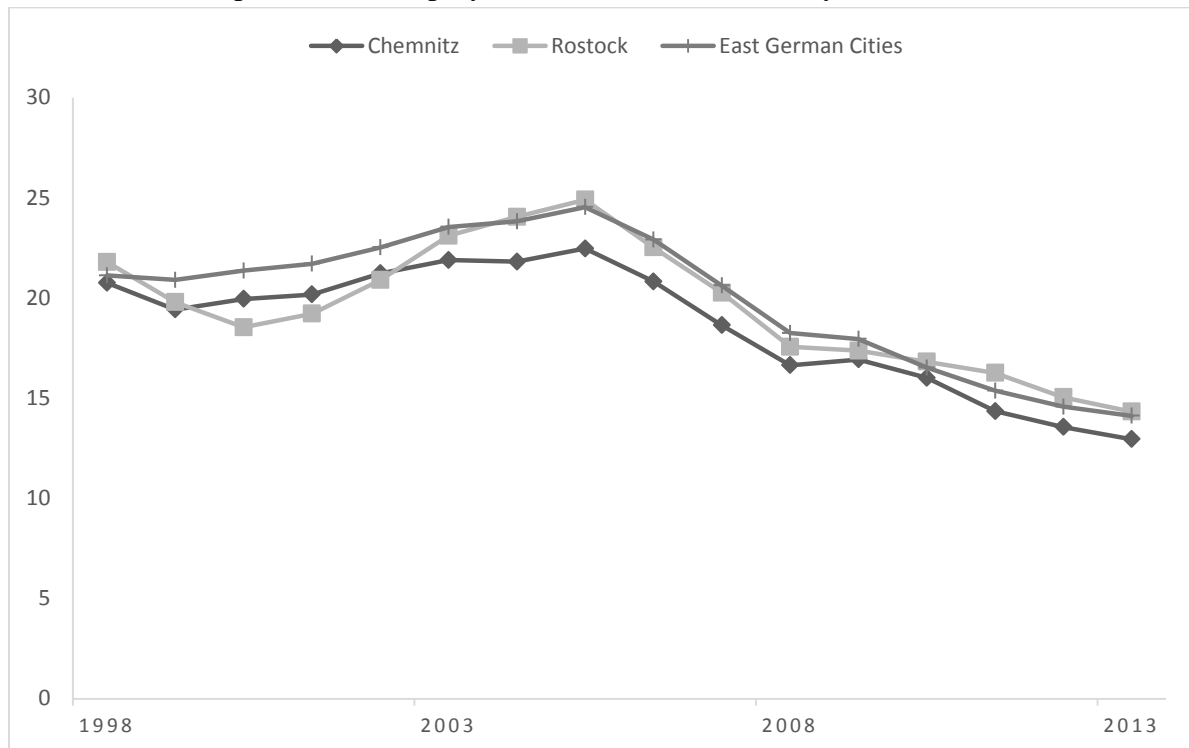
Notes: Pre-1990 administrative boundaries

FIGURE 2. Relative population development of the case study cities after 1990 (1990=100%)



Notes: Chemnitz had around 294,000 inhabitants and Rostock had around 248,000 inhabitants in 1990. East German Cities represents total population development of the 75 largest East German cities excluding Berlin. Data adjusted to recent (2015) administrative territories.

FIGURE 4. Development of unemployment rates in the case study cities



Notes: East German Cities represents average unemployment of the 75 largest cities excluding Berlin weighted by population size. Data adjusted to recent (2015) administrative territories.

## Appendix II: Index of the conducted interviews

### I. Chemnitz

- a. Dr. Barbara Ludwig, mayor of Chemnitz
- b. Sören Uhle, managing director, business development corporation Chemnitz
- c. Hans Joachim Wunderlich, managing director, regional chamber of industry and commerce (IHK) Chemnitz
- d. Angelika Hugel, managing director, employment agency Chemnitz
- e. Christoph Ulrich, leading editor of the department of politics and economics, Freie Presse Chemnitz (local newspaper)
- f. Dr. Christop Scheurer, county commissioner, Zwickau
- g. business association Saxony, regional office Chemnitz

### II. Rostock

- a. Weiß und Schimke
- b. Arno Pöker
- c. Martin Benkenstein
- d. Wolfgang Kraatz und Christian Fink
- e. Manuela Balan und Rainer Horn
- f. Dieter Neßelmann