PlanShrinking² -
Trajectories of planning cultures in shrinking cities:
the cases Cleveland/USA, Bochum/Germany, and Nagasaki/Japan

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1. Introduction

Differing institutional and cultural conditions have brought about spatial planning systems that show basic comparable features; however, these planning systems are tailored to specific cultural, normative, and spatial situations. In line with the growing demand for an international viewpoint in urban and regional planning, planning cultures has recently evolved as a focused research topic in the sphere of urban and regional development (Levin-Keitel and Othengrafen 2017).

Meanwhile it is widely acknowledged that many cities in Europe and the US have to deal with challenges of long-term demographic and economic changes (Wiechmann and Wolff 2013). This also holds true for Japan (Uemura 2015; Martinez-Fernandez et al. 2016). The problem of urban shrinkage is marked by out-migration, housing vacancies, underused infrastructure and other negative impacts. In many planning realms, in particular in the USA, issues of shrinking cities were predominantly interpreted as effects of hollowing out processes of the urban centers, triggered by suburbanization and urban sprawl. Yet, this characterization comes short in describing this phenomenon and its complexity (Pallagst and Wiechmann 2005). Referring to the discourse of the Shrinking Cities International Research Network (SCiRN), Wiechmann defines a shrinking city as follows: 'A shrinking city is defined as a densely populated urban area with a minimum population of 10,000 residents that has faced a population loss in large parts of it for more than two years and is undergoing economic transformations with some symptoms of a structural crisis’ (Wiechmann 2006).

However, extent and spatial processes of shrinkage differ significantly between Germany, the US and Japan. In the US, shrinkage can usually be attributed to post-industrial transformations related with a long-termindustrial transition process due to the decline of the manufacturing industry. Additionally, due to the high mobility of US citizens the problem of out-migration becomes even more severe. In Germany, the situation is driven by a combination of declining birth rates, the effects of the German reunification and economic structural change. At the same time, the social security system prevents extreme migration between cities in Germany. In Japan, decades of low birthrates and a highly restrictive immigration policy have led to a decline of population, which triggered an overall decline in population for the entire country since 2005. This demographic change leads to an aging society, yet it is not the only cause of shrinkage, the situation is also aggravated by economic transformations. Additionally, out-migration from peripheral cities and rural areas to metropolitan areas, in particular Tokyo, add to the decline of population in specific locales.

Shrinking cities used to be a stigmatized topic in planning for a long time. Today, discourses in planning in Europe, in particular in Germany, meanwhile actively take on shrinking cities, and a multitude of literature has been written on the topic (e.g. (Häußermann and Siebel 1988; Bontje 2004; Gestring et al. 2005; Siedentop and Wiechmann 2007). In the United States, the academic discussion is lagging behind with only a few scholars spelling out urban shrinkage (Bontje 2004). However, there are signs of an increase in political attention for this type of problem. The debate on shrinking in Japan is only partially developed in regard of the actual situation with widespread population loss as well as the dramatic aging of its society (Fujii 2008; Matanle and Rausch 2011; Yahagi 2014). In Japan, the scientific discourse on shrinking has just begun around the year 2000, as the topic has been taboo for decades. Even then, the discussion remained mostly academic with gaining momentum and becoming more public only after the publication of “Local Extinctions” by Hiroya Masuda in 2014.
In view of the shrinking cities reality in planning, one has to ask if the ‘classic’ instruments and policies of planning with their traditional focus on urban growth are still applicable in the cities affected in Germany, the USA, and in Japan. Pallagst and Wiechmann (2005) hypothesize that planning for shrinking cities does not work under the preconditions of urban growth, but requires a paradigm shift somewhat different from growth. As for the German planning realm, discourses on urban shrinkage show signs that the predominant growth paradigm is challenged, thus a change in planning culture might take place. For international comparative research, it is of interest if this will be a general trend, or a notion that is driven by local or national specifics or if and to what extent these specific strategies to deal with shrinkage are transferable to other planning cultural contexts.

This paper features first results of a comparable research project motivated by investigating planning cultures and shrinking cities tracing changes, modifications and - as a result - unravelling hypotheses for the realm of planning cultures. First, the methodology is introduced. The main part of this paper focuses on characterizing basic notions of shrinkage in the respective cases, Cleveland, Bochum, and Nagasaki. The paper also delivers first conclusions based on this characterization and introduces the next steps in the analytical research work.

2. Research design and methodology

Basic hypothesis of this research project is that the phenomenon of shrinking cities offers the possibility to investigate the principles planning is based upon in a comparative mode, and by this means changes in planning cultures can be detected. The chance offered by shrinking cities lies in the potential to trigger changes, reforms, even innovations in planning cultures, which is the research object for this project.

Shrinking cities were chosen as the main focus for this research. The social, economic and spatial transformations triggered by shrinking processes present a specific challenge for urban development and spatial sciences (Göb 1977; Häußermann and Siebel 1988; Oswalt 2004; Pallagst and Wiechmann 2005; Hollander et al. 2009). In particular, planning processes and planning cultures are expected to change when dealing with shrinkage (Pallagst 2010). As causes and effects of shrinkage are similar in different countries (Pallagst and Wiechmann 2005; Pallagst 2009) but national discourses and suggested solutions will most likely differ, international comparative research is needed.

In addition, it has to be considered that planning realms in the USA, in Germany, and in Japan offer very specific yet different planning cultural settings. While the US planning culture has been labelled ‘market oriented’ (Pallagst 2007), the German one is offering a more elaborate multilevel planning system, often criticized as being inflexible (Heemeyer 2006). Japanese planning culture is traditionally based on a highly bureaucratic and centralized top-down model. Within this model, the central government of Japan is considered to be ‘all-knowing’ (Feldhoff 2008, 37). However, due to existing spatial disparities and problems with implementation, there is an increasing shift towards more decentralization.

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The comparative method is considering cultural, social, economic and ecological aspects as well as issues of land use. Germany as well as the US and Japan are implementing planning strategies in order to actively deal with shrinkage (Pallagst 2013; Yahagi 2014). The diverse range of strategies includes substitute industries such as tourism, demolitions (right-sizing) and green infrastructure (Pallagst et al. 2014). The smart implementation of the right strategies to restructure a shrinking city is crucial for a development that takes the conditions of shrinking into account. Hollander et al. thusly pronounce: What are the viable options for a shrinking city – redevelopment, landscape beautification, historic preservation, ecological restoration, temporary uses, demolition of neighborhoods, benign neglect, or perhaps something else? How can a shrinking city evaluate what works and what doesn’t? How does it balance short-term considerations against long-term ones? Economic against environmental ones? (Hollander et al. 2009, 232). The same authors conclude that, shaving the edges off Youngstown, or Detroit or Dresden, will no longer suffice’ (Hollander et al. 2009), in particular when dealing with such a complex topic as shrinking cities.

Objective of the research presented here is the comparative investigation of changes in planning systems and planning cultures in view of shrinking cities in Germany, the USA, and Japan. In particular, to analyze planning strategies and instruments connected with urban shrinkage and its causes in a comparative mode. The findings will then lead to detecting interdependencies between changes in planning cultures and societal changes in the wake of shrinkage processes. Additionally those findings are used to derive hypotheses for both the future oriented development of shrinking cities, and the development of planning cultures based on the comparison of planning cultural settings.

To accomplish these goals, the case studies will be characterized based on the demographic and urban development trajectories of the past. Based on already existing typologies for shrinkage (Wiechmann and Wolff 2013), the acceptance of shrinkage (Farke 2005) and development paths of policies and urban planning (Danielzyk et al. 2002), the three cities, Cleveland, Bochum and Nagasaki, are categorized. The classification, previously developed by the authors (Pallagst et al. 2017) is going to be tested in this categorization. Furthermore, the different terms, definitions, typologies and theoretical approaches towards shrinkage and planning cultures are linked in order to provide a comprehensive overview to both research topics.

Regarding the planning cultural context, the selection of the countries Germany, USA and Japan follows the most different systems approach, based on comparative studies in political science, (according to Mills; Otner 2010). Meanwhile, the selection of Bochum, Cleveland and Nagasaki follows the most similar systems approach (according to Pierre 2005). All three cities display similar paths of shrinkage, comparable numbers of population and related branches of industry and economy. The approach for this comparative analysis is based on the search for common features and differences (variation finding) (Booth 2011). Furthermore, the selection of case study cities is based on the following hypothesis:

• Severe problems regarding shrinkage are present in all three cities and lead to a change in traditional planning strategies and the use of established instruments.

• Planning strategies are embedded in the local planning cultural context and cannot or hardly be transferred to other cities despite similar conditions.

• Despite the limited transferability, there are signs of convergence in the development of planning cultures caused by shrinkage.
Additionally, the results of the EU COST Action Cities Regrowing Smaller (CIRES) showed that, of all European cities with more than 10,000 inhabitants those with a population between 300,000 and 500,000 are most often affected by shrinkage (Wiechmann and Wolff 2013). Moreover, in all three cities, major strategies for innovative solutions regarding shrinkage related problems have been applied.

To identify best or worst-practice examples as well as advantages and disadvantages of used strategies and measures for shrinking cities, the method of embedded case study research was applied. With this approach, in-depth analysis of actors, their motivation, actions, chances and limits, can be assessed. According to Yin (2003) case study research is based on six sources of information: documentation, archive material, interviews, direct observation, passive observation and physical/cultural artefacts.

The analysis started with a sound review on literature on shrinking cities in Germany, Japan, and the USA, and on the case study cities. Moreover, a collection of statistical data was carried out in order to analyze the cities’ paths of decline. Core of the work was carrying out 40 semi-structured interviews in the years 2017 and 2018 in the cities Cleveland, Bochum Nagasaki and in Tokyo with actors in government (city planning departments, regional entities, ministries), political decision makers, NGOs, developers, and academics. The additional field trip to Tokyo proved necessary, as in Japan many policies for steering urban planning and development and thus shrinkage, are derived on national level. The language barrier regarding Japan, which was initially identified as a risk for the successful project work, could be managed by co-author Tetsuji Uemura acting as a translator in all interview settings in Japan, and for relevant data and documents.

Interview questions regarding all cities focused - among others - on the current situation regarding population development and housing, possible critical points in the history of urban development (e.g. major shutdowns, outmigration, etc.), the perception of the problem of population loss both by city officials and the public, specific policies in use in neighborhoods with high vacancy rates to stabilize prices and improve the quality of life. In addition, specific aspects regarding the cities were considered such as national programs in Japan, suburban development in Cleveland, and the metropolitan/regional setting of Bochum. During the field trips, the situation in the inner cities as well as a range of neighborhoods of Cleveland, Bochum and Nagasaki was photographed and documented.

To be able to generalize the findings, the results were verified in a workshop (2017 at Kaiserslautern) engaging a select number of stakeholders of the case study cities.

Planning Cultures in the USA, Germany and Japan

Before offering the findings from the investigations in the three case study cities, Cleveland, Bochum and Nagasaki, a brief introduction into the respective country’s planning culture is presented.

Planning culture in the USA for instance, has traditionally been market oriented, developer driven and breeding ground for NIMBYism (Pallagst 2007). The development of (new) settlements is part of the American culture, thus planning is for the most part engaged with taming urban growth (Pallagst 2007).
As it is widely known, sprawl is the dominant pattern. Several policies and tendencies have shaped today’s sprawling land use pattern in the US. In this respect, individual decisions are driven by market forces, and embedded in economic competitiveness. Property rights obtain an outstanding position in this interplay. In this regard, what planners do or consider relevant in terms of quality of life for the community as a whole often stands in direct contrast to the property-driven interest of individuals and developers (Hoch 1994).

When looking at the normative framework, there is no national planning law in the USA, and, land use planning on the state level differs greatly from state to state. On the regional level, it can be seen that regional planning agencies exist exclusively in metropolitan regions (Porter 2008). For this reason, the local level formed by municipalities and counties retains a dominant role in the development of settlements. The single municipality, however, is often overextended by the challenges of either growth or decline. Moreover, the traditional methods of land use planning in the USA, zoning, in practice aims at preventing any negative influence on property values in a neighborhood (Nelson 1977). According to Hoch: ‘Few members of the planning profession would deny that local public officials have used government zoning and permit approvals to enforce racial segregation’ (Hoch 1994, 240). However, allocating profitable types of land uses is a tool of supporting a community’s fiscal strategy. This involves promoting development that generates high amounts of taxes (Razin 1998).

The strong affinity towards growth, which we encounter in the USA’s planning culture, makes it difficult for shrinking cities to liberate themselves from this context. Even though we find long-term decline in the Rust Belt, be it in Cleveland, Flint or Youngstown, shrinkage has long been a taboo (Pallagst et al 2017a). Moreover, unlike in most European countries, these shrinking processes are embedded in population growth on national level. Against this background and in light of a more market-oriented planning culture, discourse on shrinking cities in the USA started out with a time lag compared with Europe (Wiechmann and Pallagst, 2012) and is still considered to be merely a regional problem (Mallach et al. 2017).

The German planning culture offers quite an elaborate multi-level planning system, where policies, plans and strategies are released at every level of planning: nation, state, region and municipality. In addition, guidelines set by the European Union influence the German planning realm. In general, German planning is strongly influenced by sustainability, in particular when it comes to converting open space to building ground. In this respect, it is a declared national goal to minimize land use expansion (30 ha per day), and also to prioritize inner city development instead of development at the urban fringe (Bock et al. 2011). In addition, the federal level has enacted a normative framework and guidelines for the development of the entire country (§ 18 (1) ROG). The states (Laender) endorse spatial development plans and regional plans. On local level, the municipality has the main competency for building and planning. Here, two instruments are applied: Land use planning operates as zoning with a general plan for the entire municipal area and detailed zoning plans for parts of the urban area (Spraul et al. 2016). There is no space within the country that is not covered by a national, regional, or local plan. Utilizing the so-called ‘counter-current principle’ (Gegenstromprinzip) (§1 Abs. 4 BauGB), planning levels are intertwined in a complex system of consultations and negotiations. This multilayered system is, however, complex and thus criticized for its firmness (Heemeyer 2006).

Despite the fact that economic changes happened in many old industrial areas in Germany since the 1970s, the debate regarding shrinking cities and thus policy-making in this respect, started
with the eastern part of Germany suffering from the dramatic effects of post-socialist economic transitions and the vast decrease in fertility rates. Combined with sustained processes of out migration, this led to a lively debate on the issues of shrinking cities after the year 2000 (Wiechmann and Pallagst 2012). For this reason, the German realm can be seen as the birthplace of the international shrinking cities discourse.

When looking at the Japanese planning culture the planning system is highly centralized with a focus on economic development and market orientation (Martinez-Fernandez et al. 2016, 14; Mallach et al. 2017, 104; Sorensen 2011, 714). Although some efforts regarding decentralization were made in the past decades, culminating in the early 2000s Trinity Reforms\(^2\), the effects of those reforms are somewhat limited (Ikawa 2008, 21; Sorensen 2011, 719). The market orientation resembles the planning tradition and planning culture in the USA but instead of local cities being the main actor in development the central government has a strong role, not only in policy making but also in its implementation (Martinez-Fernandez et al. 2016, 16). However, planning on local level is characterized by strict zoning laws and little flexibility since zoning plans are rarely changed (Sorensen 2011, 720).

While plans, programs and policies are developed on national level, the regional and local level has some influence in the drafting process (Interview with Takehiro Zenmei, Ministry of Economy, Trade and Industry (METI)), the implementation appears to be strictly top down. Plans and policies are implemented on regional and local level with only basic adaptation towards the specific location. Although planning documents on national level refer to regional or local best practice examples, the selection of those cases seems not transparent since there is no system of developing those best practices within defined parameters\(^3\) (Interview with Norio Miki, Nomura Research Institute).

The discussion of shrinking cities within a closed circle of politicians and only few scientists highlights the lack of attention towards this topic in the past. However, since the discourse gained more publicity in recent years the reaction of the central government appears decisive. The number of plans, policies and programs directed to mitigate (the effects of) shrinkage is increasing. Measures to reduce services in peripheral/rural areas, a decrease in public spending, the promotion of honorary activities, the further development of public transport, the creation of centers for innovation and development as well as the reduction of infrastructure are pointing towards a general change of policy.

As we have seen, all three planning cultures are confronted with shrinkage and the discourse in academia and politics is progressing. Not only in the three countries, but also all over the globe cities are responding in one or the other way with policies and strategies (Pallagst et al. 2014). The question is: How do shrinking cities in these most different systems react? It is here where empirical research of this project starts.

\(^2\) The Trinity Reforms were a series of tax reforms to increase the independence of municipalities from the central government.

\(^3\) In Germany, common standards are partly developed by so-called MORO projects, pilot projects subsidized by the federal government.
3. Case study explorations: Paths of decline and policies dealing with shrinkage in Cleveland, Bochum, and Nagasaki

The following profiles showcase the results of the methodological steps up to the comparative analysis. In doing so, they offer profound characterizations paths of decline of the cities Cleveland, Bochum, and Nagasaki, and the policies implemented to combat shrinkage. Thus they represent trajectories of shrinkage and hopefully also planning cultures in the respective cities. The next part follows a comparative structure. Yet – not surprisingly – the characterization of cases might differ in timing (when shrinkage actually starts), in policies (which types of planning or other policies are implemented), and in the actors involved (private versus public, different administrative levels), just to mention a few aspects.

3.1 Trajectories of growth and decline in Cleveland

The case of Cleveland is, in many aspects, representative for the economic downturn of numerous cities in the so called ‘Rust Belt’ of the United States. These old industrial cities suffered from structural change and therefore had to deal with high losses of both jobs and people. Cleveland, a former center of iron and steel production as well as manufacturing reached its peak population of around 915,000 inhabitants during the 1950s (see Table 1). But only a few years later the economic base of this population growth was diminished by the search for new markets and the relocation of former Cleveland companies. A general trend of deindustrialization set in during the 1970s leading to a further loss of jobs and population (Coppola 2014). Today the city is still struggling with the consequences of economic transformations which goes along with the economic downturn of manufacturing industries.

Cleveland’s growth in the beginning of the 20th century was fueled by its strategic location at Lake Erie and important waterways like Ohio and Erie Canal, Cuyahoga River and Ohio River during the time of industrialization. Additionally, being close to existing railroads and iron ore deposits made Cleveland an ideal city for trade, and later on, a center for metalworking industry (Case Western Reserve University 2017b). Until the 1920s a broad variation of products were traded and manufactured in Cleveland. But soon iron and steel production along with the automotive industry and oils companies formed a new cluster in Cleveland. In the 1920s Cleveland was home to most of the headquarters of major companies in the U.S. (Case Western Reserve University 2017a).

Although Cleveland had to deal with the competition of other industrial cities like Detroit, which became the center of the automotive industry in the U.S., the city could establish itself as a manufacturing city for a variety of industries like machine manufacturing, electronics, iron and steel and automotive suppliers. Following this first phase of economic growth, the industrial structure changed during the 1960s. While iron and steel production and the automotive suppliers remained important employers in the city, the electronics industry, especially consumer electronics became even more important (Case Western Reserve University 2017a).

By the end of the 1960s, the economy in Cleveland had to deal with several problems. Due to the union strikes in the 1940s and the resulting employment rights, labor in Cleveland and other industrial Cities in the north east of the United States was relatively expensive. At the same time, cheaper means of transport and new custom regulations enabled the emergence of globalization as a new trend. New investments were made in Sunbelt cities in the U.S. or even abroad. Additio-
nally, new environmental regulations forced companies to refit their sites and invest in new infrastructure like sewage treatment plants. During this time around 1/3 of manufacturing jobs in Cleveland were lost (Case Western Reserve University 2017a).

Many companies in Cleveland could not keep up with the increased demands for environmental protection and the reduction of labor costs. The adaptation to new production processes and the training for workers were additional costs the companies could barely afford during this period of time. Consequently, during the 1970s and 1980s more manufacturing jobs in Cleveland were lost. Again, some of the core industries remained in Cleveland like automotive manufacturing and steel production. However, the remaining companies still had to reduce their workforce. Other companies, especially in the service sector remained relatively unaffected by the ongoing structural change. Financial or legal services even managed to grow but could not make up for the losses in manufacturing industries (Case Western Reserve University 2017a).

From the 1980s onward, the city government set a new focus on research and development using the existing facilities and institutions like Case Western Reserve University, Cleveland State University, the Cleveland Clinic and the University Hospital. This initiative was supposed to set new impulses for the city’s economic development. Private organizations like the University Circle Inc. or the Cleveland Foundation helped to kick start this new approach since it was their genuine interest to create new investment opportunities in Cleveland and increase the importance of the universities and health industry in Cleveland. Just recently, these efforts are also supported by new organizations like the Health Tech Corridor which is marketing brownfield sites and vacant buildings in a corridor between Downtown Cleveland and the University Circle. Additionally to this long-term strategy, the city is trying to develop the tourism sector with flagship projects like the Rock and Roll Hall of Fame, the Cleveland Museum of Arts or – more recently – hosting the Republican National Convention for the presidential election in 2016. The success of Cleveland’s Basketball team winning the NBA finals in 2016, further improved the image and awareness of and for the city.

Population Development

The population growth of Cleveland and the surrounding Cuyahoga County mainly took place during the first half of the 20th century while the economy was thriving in the area. Between 1900 and 1930, the city gained around 520,000 inhabitants and the county gained even more with around 760,000 new people within these three decades. After a slowing down of this trend in the 1940 due to WWII, Cleveland reached its maximum population of 914,808 inhabitants in 1950. While Cleveland started to lose population in the following years (Beauregard 2014) the county continued its growth due to suburbanization until the county’s population reached its peak in the 1970s with 1,720,835 inhabitants (Case Western University and Western Reserve Historical Society 2018). Almost as rapid as the city’s population grew in the first half of the last century, the city lost inhabitants in the second half. Between 1950 and 2010 around 480,000 people left Cleveland (see table 1).

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4 At this convention, the party’s candidate for the presidential election is chosen.
Table 1: Population Development in Cleveland 1900 – 2015

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<td>Cleveland</td>
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* rounded in thousand
Source: (Case Western University and Western Reserve Historical Society 2018)

Reasons for Shrinkage

As the Table shows, the loss of population set in during the 1950s and increased during the 1960s and 1970s. Only in 1980, the speed of population loss slowed down. Beauregard (2009) names several reasons for this development pattern. The most important reason of course is the loss of job opportunities. Major industries moved from the industrialized northeast to the Sunbelt cities because of growing markets, lower wages and less environmental restrictions. The reason why there was only a moderate loss of population in this time was that after WWII there was still a high demand for ironworks and cars (Case Western Reserve University 2017c). A second reason is the new legislation favoring suburban development. The incorporation of suburban towns became more difficult and new regulations regarding zoning and school finances were targeted to separate the suburban areas from the problems of inner cities (high crime rate, low level of education, etc.) (Beauregard 2009). This particular point is also presented in recent research by Piiparinen et al. (2016) where it is explained that the number of households in Cleveland has dropped between 1950 and 2010 by around 23% while the number of households in Cuyahoga County increased around 118% in the same time period. During this time Cleveland’s problems with racial segregation came to life. Like in other cities in the USA, white people, leaving inner city neighborhoods and moving to the suburban fringe of the same cities, predominantly drove the suburbanization. This phenomenon was labeled ‘White Flight’ (Frey 1979).

Figure 2: Population Development in Cleveland and Cuyahoga County 1900 – 2015

Source: (Case Western University and Western Reserve Historical Society 2018)
Finally, the transition from industrial manufacturing towards a service-oriented economy has left the former sites of heavy industry with high unemployment and the related problems. Only after these new economic fields had matured and developed in the former industrial cities the trend of losing population could be slowed down or even stopped (Beauregard 2009).

**Dealing with shrinkage in Cleveland**

**Programs of the federal government and state government**

There are many federal government programs related to the economic downturn in the so called Rust Belt, e.g. the Community Development Block Grant Program (CDBG), the Emergency Shelter Grants Program (ESG) and the HOME Investment Partnership Program. Estimates by the city of Cleveland calculate the amount of 66.5 Mio $ for the fiscal year 2016/2017 (49,2 Mio $ CDBG, 1,8 Mio $ ESG and 15,6 Mio $ HOME) (Department of Community Development, Cuyahoga County Planning Commission 2016). These programs are supporting federal states as well as cities or counties to counter specific local development problems (CDBG), create emergency shelter and reduce homelessness (ESG) or support low income inhabitants in their efforts for adequate housing (HOME) (U.S. Department of Housing and Urban Development 2017a, 2017b, 2017c). To be eligible for these programs the city has to apply in form of a Consolidated Submission for Community Planning and Development at the U.S. Department of Housing and Urban Development (HUD). However, with recent changes in the federal government it is possible that programs like the CDBG are cut. This would mean a massive hit on the city’s budget and therefore the possibility for urban development in Cleveland (Interview with Freddy Collier (Cleveland Planning Commission)). There are no special programs funded by the State of Ohio. The grant money is simply distributed by the state to the cities and counties. It is only on local level where it is decided what specific projects are funded by the program.

**Initiatives by the City of Cleveland and non-profit organizations**

The city of Cleveland has leveraged key initiatives in dealing with shrinkage. One instrument for dealing with shrinkage in Cleveland is the Cuyahoga County Land Bank. Land banks are used in a number of cities of the Rust Belt, in particular after the financial crisis from 2008 onward (Gillotti and Kildee 2009). Because of this crisis, many people were not able to repay their mortgages or their home owners’ taxes. As a result, many homes went into foreclosure. Since there was only low demand for houses, most of these homes were left abandoned. This in turn affected neighboring houses which lost their value. The result was a downward spiral of diminished value, failed mortgages, foreclosure and abandonment (Gillotti and Kildee 2009). Since Rust Belt cities already had to deal with vacant houses, the situation became even worse. Surprisingly, although the city lost almost half its population since 1950 only around 8000 buildings are listed as vacant with the Cuyahoga County Land Bank. Also personal observation did not show the number of vacant or abandoned houses one might expect (personal observation April 2017). By buying the vacant properties the city was able to stop this downward spiral and resell or reuse the properties.

Furthermore, organizations like the Cleveland Foundation or Cleveland Neighborhood Progress are important actors in revitalizing vacant properties, representing anchor institutions. While the Cleveland Foundation supports this development by funding citywide projects for education, economic development and revitalizing neighborhoods, Cleveland Neighborhood Progress’ acti-
vities targeted the neighborhoods directly. The Cleveland Foundation also supports different projects and initiatives like Cleveland Neighborhood Progress, Cleveland Housing Network, Downtown Cleveland Alliance, Mid Town Cleveland, and the Greater University Circle Initiative (The Cleveland Foundation 2017).

As the interviews and the field trip revealed, development in Cleveland is targeting specific neighborhoods which appear to be of interest to private investors. The following three neighborhoods could be identified as development hubs: First, downtown development: Also, the recent success for Cleveland’s Basketball team has fueled tourism in the city (interviews with Lillian Kuri, Cleveland Foundation, and Tom Stravinsky, Downtown Cleveland Alliance). Thus, many of the vacant former banks or office buildings located in downtown are currently being converted to prestigious hotels. Second: The Greater University Circle Initiative (GUCI), which aims at increasing the positive impacts of the University Circle area towards the surrounding neighborhoods which some of them belong to the areas that are most affected by shrinkage (Interview with Chris Ronyane, University Circle Inc.). Third, lakefront/riverfront development. Further capitalizing on its assets, the city has started developing the lakefront district in the northeast and areas on the mound of Cuyahoga River, which is located not too far from downtown. In doing so, the city is in line with a general global trend of waterfront development, and with the highly sophisticated apartment buildings and restaurants being developed (see figure 3), it is targeting the millennials as the newmuch acclaimed citizenry to ‘refill the doughnut (interview with Lillian Kuri, Cleveland Foundation).

Another initiative that has increased the awareness towards shrinkage in a positive sense is the movement Pop Up City Cleveland. Initiated by the Cleveland Urban Design Collaborative with support of Kent State University, this project aims at organizing short-term interventions on vacant sites or in vacant buildings to help revitalize these areas (interview with Terry Schwarz, Cleveland Urban Design Collaborative). Since 2007, these interventions are accompanied by research groups investigating the importance of community building in shrinking cities thus promoting the advantages of temporary use of vacancies for urban development (Cleveland urban design Collaborative 2017).

According to City planning director Freddy Collier, the city of Cleveland aims at becoming a healthier city (Interview in 2017). In order to achieve this aim, the city maps out a greener and more sustainable footprint by implementing projects such as the Bikeway Master Plan, Sustainable Cleveland 2019, and the Cleveland Tree Plan. Striving to become a bicycle friendly city, the Cleveland city planning commission presented the first bikeway master plan in 2008, outlining the fundamental aims of the initiative Bicycle Friendly Cleveland (Cleveland City Planning Commission 2016). One key element of this is the city’s lakefront bikeway. . Sustainable Cleveland 2019 ‘Green city on a blue lake’ spruced out of a sustainability summit held in the city in the year 2009. Spread over a period of 10 years, each year is dedicated to a specific topic which is fundamental to building a sustainable city (Mayor’s Office of Sustainability 2017). The roadmap of topics is as
follows: energy efficiency (2011), local foods (2012), advanced and renewable resources (2013), zero waste (2014) and clean water (2015), sustainable mobility (2016), vibrant green space (2017), vital neighborhoods (2018) and people (2019). Another initiative to support Cleveland’s urban transformation towards enhancing the quality of life is the ‘Cleveland Tree Plan’, which is a community-wide collaboration. Along with the city of Cleveland, several actors are promoting this plan. Goals are acknowledging trees as a vital part of neighborhoods, preventing further loss of trees, and offering support for the existing tree infrastructure (Davey Resource Group 2015).

Preliminary reflections on the Cleveland case

The aforementioned organizations, initiatives and projects are only part of the broad network of actors involved in community development and urban development in Cleveland. The city can also rely on strong partners like the Cleveland Foundation and University Circle Inc. However, after analyzing the findings of the case study research, the authors remain skeptical about the coherence and comprehensiveness of these developments. Public authorities only play a minor role in the redevelopment rather supporting private investment initiatives and developers than taking a lead role by establishing guidelines and a coherent vision for urban development. Additionally, it is questionable, if investments in infrastructure for tourism, like a new bikeway along the shore of Lake Erie or new hotels, are a sustainable way to improve the city’s economy. However, since private investors so far seem to have a keen sense for recent trends in urban development, the recent activities in have created a positive atmosphere in Cleveland. Yet, there are signs of further segregation between neighborhoods with only a few areas profiting of the development. Segregation among income and races remains one of the biggest challenges for urban development since improvements on neighborhood level often lead to gentrification and expulsion of former residents.

3.2 Trajectories of growth and decline in Bochum

Bochum is one of the classic German examples of an old industrialized city that started losing population after the decline of the mining industry and steel production. In 1927 Bochum hosted around 70 mines within the city borders, one of the highest numbers of mines throughout Europe (Stadt Bochum 2016c). The economy was heavily reliant on the mining industry and, consequently, starting with the year 1958, the downturn of this industry also turned out to become a crisis for Bochum. However, this process cannot easily be detected when observing population figures. Interestingly, Bochum’s population peaked in 1975, more than 15 years later, followed by 50 years of decline. Yet, from the year 2015 onward, Bochum is registering a slight growth in population but major challenges remain.

The tradition of mining in the city of Bochum can be traced back until the 16th century with industrial mining beginning in 1844 with the first deep mining shaft in the city (Stadt Bochum 2016c). Through further industrialization the number of employees in mining increased, like in all other cities of the surrounding Ruhr Area. The deposits of coal and ore made mining and steel production the most common industries in those cities. Also the development of new infrastructures like railways enhanced the status of the Ruhr Area as Germany’s main cluster for coal and steel industries (Regionalverband Ruhr 2016a). In 1955, 38.500 out of 40.000 industrial workers in Bochum had jobs in one of the mining facilities. (own calculation based on Stadt Bochum 1955 - 1995). Because of the ongoing liberalization and globalization of markets around the world, the German
mining industry by the end of the 1950s was no longer competitive. In parallel, oil was becoming more important for industrial production and heating. 

Until then, Bochum increased not only its population but also its urban area by incorporating neighboring cities and towns. A first wave of incorporations took place between 1901 and 1918 when four neighboring towns were integrated (Mittag 2005, 61). The main reason at this time was to increase the area for residential purposes, industrial areas and municipal facilities. The area more than quadrupled from 600 ha to around 2,700 ha. The second and third wave of incorporations took place in 1926 (5,000 ha) and 1929 (12,100 ha). Up until then around eleven cities and towns had been incorporated (Mittag 2005, 61). In 1975, the city of Wattenscheid was incorporated by Bochum, which marks the peak in Bochum’s population over time. However, this last incorporation was not intended to increase the area for new urban development rather than consolidate the existing municipalities and create new centers for commerce and retail (Spiegel Online 2016).

Figure 4: Incorporations of surrounding municipalities into Bochum 1904 - 1929

In 1958 there were more than 42,000 people working in the mining industry. Only seven years later, this number had dropped to only 20,500. Another ten years later only 600 employees were left (own calculation based on Stadt Bochum 1955 - 1995). In contrast to other cities in the Ruhr Area, Bochum never had a noteworthy number of jobs in steel production, yet steel producing companies left the Ruhr Area only a few years after the mining industry went down. Instead, Bochum was able to attract the TV producer Graetz (later Nokia) and the car manufacturer Opel (former part of General Motors and recently bought by French car manufacturer PSA) to build factories in the city, diversifying the economic structure. Graetz opened in 1956 and although the factory was sold several times, various electronic goods were manufactured until the site closed in 2009. The Opel plant opened in 1963 and also created jobs for many former miners not only with car manufacturing but also in supply industries (Landschaftsverband Westfalen-Lippe 2016). Additionally the Ruhr-University-Bochum was founded between 1965 and 1969 (Stadt Bochum 2016b). This at least created jobs in the local building industry, but it could not substitute for the job losses in manufacturing or mining.
Population Development

For the context of Bochum, it proves difficult to produce a coherent chart of the population development because of the high number of incorporations and thus the changes in the administrative area. It is hard to determine if the positive balance in population is caused by in-migration or the numerous incorporations. One can assume that both factors played a role in the population growth of Bochum, at least in the first half of the century while the economic factors were still positive. Moreover, also the method of data collection changed over time.

Already in the beginning of the 20th century Bochum was one of the largest cities in the Ruhr Area with around 100,000 inhabitants, not only but probably also due to the incorporations in 1904. This pattern of growth can be observed for the next 30 years where population growth is at least partially fueled by the incorporation of neighboring towns. Before WWII, the city had more than 300,000 inhabitants but inevitably lost population during the war. However, within a decade after the war had ended, the city was back to its pre-war population numbers. The table below shows that between 1958 and 1975 the population stagnated probably related to the difficult transition from mining to manufacturing and other industries. The incorporation of Wattenscheid in 1975 remains the last incorporation so far and marks the last period of population growth for the city. Since then, the population dropped from 434,900 in 1975 to 369,300 in 2015. Due to the incorporation of Wattenscheid it is not possible to trace the number of out-migrations within the period of structural change.

Table 2: Population Development in Bochum 1905 – 2015

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<tbody>
<tr>
<td>Bochum</td>
<td>116.6</td>
<td>145.1</td>
<td>158.2</td>
<td>314.6</td>
<td>249.7</td>
<td>342.3</td>
<td>363.7</td>
<td>434.9</td>
<td>409.0</td>
<td>406.7</td>
<td>377.8</td>
<td>369.3</td>
</tr>
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* rounded in thousand
Source: (Stadt Bochum 1955 - 1995)

Figure 5 Population Development and Incorporations in Bochum 1905 – 2015

Source: (Stadt Bochum 1955 - 1995)
Reasons for shrinkage

The mining industry in Bochum had its peak in the short time between the end of WWII and the late 1950s. This was powered by the reconstruction and economic recovery after the war (Regionalverband Ruhr 2016b). The existing focus on one single industry was stabilized by the concentration of actors and companies affiliated with coal and steel production. The emergence of other industries was prevented because of limited access to workers and developable land (Tenfelde 2005). In addition, the incorporations in the first half of the century just increased this focus since most of the incorporated towns were also focused on mining as the main industry. This focus on one single industry can be identified as the main reason for the difficult economic development in Bochum and the Ruhr Area as a whole.

The problem was enhanced by interregional competition between the neighboring cities which all suffered from similar problems regarding the economy (Goch 2005). The state of North Rhine-Westphalia tried to end this competition by introducing regional planning efforts for the whole Ruhr Area. New infrastructure and a common goal for economic development were supposed to revive the whole region (MetropoleRuhr 2016a). However, the focus remained mostly on site-related factors like roadways, production sites and energy supply and on the improvement of established industries in the coal, steel and energy sector. Other factors like education and the focus on new technologies or industries did not succeed on a broad basis with the exception of the Ruhr University, and companies Opel and Nokia (MetropoleRuhr 2016a).

Dealing with shrinkage in Bochum

Programs of the federal government and state government
To support the coal and steel industry in Germany, the federal government as well as the government of North Rhine-Westphalia (state government) started to subsidize the coal mining and the production of steel in different ways. One example is the ‘Hüttenvertrag’ (smeltery contract) active between 1985 and 2000. German steel smelters were obliged to use German coal for their production process (Klute 2015). Another financial subsidy was the so called ‘Kohlepfenning’ (coal penny). To equalize the market price of German coal and the coal available on international markets German electricity customers had to pay for the difference by an extra fee. This subsidy was condemned illegal in 1994 and therefore stopped. In 1976, a national reserve on coal was initiated to increase the sales-quantity of coal. In 1993, a new contract was signed to comply with EU regulations. Currently the mining of coal in the Ruhr Area is still subsidized until 2018 (Klute 2015).

The state of North Rhine-Westphalia was supporting the cities in managing structural change. For this purpose, between 1975 and 1986, the state’s development agency used 50 Mio € per year to rebuy vacant industrial sites and make them available for redevelopment (MetropoleRuhr 2016b). Another highly prominent and internationally acclaimed example for regional redevelopment...
strategies is the international building exhibition ‘IBA Emscher Park’. This program was funding around 129 projects between 1989 and 1999 with a total of 2.3 Billion Euro in various fields like nature and environment and the redevelopment of residential and commercial areas (Metropole-Ruhr 2016d). The area along the Emscher, one of the rivers in the area, was one of the hardest hit areas after the decline of the mining and steel industry and although the river passes the municipal boundaries of Bochum in two kilometers distance, several revitalization projects were realized within the city (Regionalverband Ruhr 2018).

Recent activities of the federal state are limited to programs like ‘Stadtumbau West’ (Re-building the City – West) or ‘Soziale Stadt’ (Social City). In Bochum several neighborhoods have applied for funding under these programs (Stadt Bochum 2013, 2014a, 2015, 2016a).

1) Regional programs

Since shrinkage did not only affect Bochum but the whole Ruhr Area as a consequence of the structural change in the economy, regional efforts to solve the problem started already in the 1960s (Metropole-Ruhr 2016c). There are four phases of regional structural policy that can be identified. In the first phase (1966-1974) integrated structural policy was the key element. Following up the great success of reconstructing the cities after the end of the war the state aimed at a new industrialization with modern industries and institutions to boost the economy (Opel, RUB). These efforts unfortunately had only limited effects because most of the efforts were made to improve the existing companies, only prolonging the inevitable decline. The mono-industrial structure remained and a diversification of the economy failed. The second phase (1975-1986) a more centralized approach was guiding the development. The responsibility for planning was transferred to the regional government. In this phase, the rebuy of vacant properties for redevelopment was one of the main instruments to drive the development. The third phase (1987-1999) was the attempt to complement the top-down approach of the previous decades with a bottom-up initiative. Several regions were formed who could, within a given framework, set their own priorities and create specific projects. Participation and consensus building was important. However, not all of the regions managed to use the increased ‘freedom’ for an effective development strategy. In the fourth phase (since 2000), the comprehensive strategy has made way to a strategy of fragmented projects. Several cities use small-scale cooperation with neighboring cities to set new impulses for development.

2) Initiatives by the City of Bochum

In recent years, the city has started several initiatives and redevelopment projects. Two major projects are the redevelopment of the former factory sites of electronics manufacturer Nokia and car manufacturer Opel. Since Nokia stopped its production in 2009, more than 4500 jobs in small and medium enterprises could be established on the vacant site forming a new IT cluster within the city (Interview Johannes Peuling). In addition, the site of the former Opel plant that is vacant since production stopped in 2014 is going to be part of Bochum’s recent development strategy. For this purpose, the development company ‘Bochum Perspektive 2022’ (Bochum Perspective 2022) was established by the city. The aim is to redevelop the area with office space, small scale industries and commerce (Bochum Perspektive 2022 GmbH 2016). In 2017, the logistics company DHL announced the opening of a new logistics center on this site and also the Ruhr University has clai-
claimed interest for an expansion. This is also part of a strategy by the university to build a stronger connection with the city, since today the university campus is on the edge of the city with only weak connections to other neighborhoods (Stadt Bochum 2014b).

Additionally, the city is engaged in a network between the university and the city to improve the visibility of the university. Various projects like city tours, workshops, or vouchers of local companies aim at connecting students with their place of study. Within this network, other institutions as the chamber of commerce and the economic development agency are also involved (Interview with Lars Tata, UniverCity Bochum).

Furthermore, the local chamber of commerce is hosting several events to connect local companies (SME) with the university to improve the knowledge transfer and increase the innovativeness of the local economy (Interview with Stefan Postert, Chamber of Commerce Central Ruhr Area). This is particularly important since, despite the general opinion, Bochum’s economy is heavily reliant on small and mediums sized enterprises.

Another lighthouse project for Bochum is the new, Gesundheitscampus (Health Campus) in close proximity to the university. Initially intended to host a number of bio-tech companies the development only gained momentum after the state of North Rhine-Westphalia decided to locate the public health care school in Bochum accompanied by various public agencies related to the health care sector (Interviews with Volker Steude, Die Stadtgestalter, and Johannes Peuling, economic development agency).

Figure 7: Health Campus Bochum

Preliminary reflections on the Bochum case

The recently updated masterplan includes all these new focal points and developments and presents a strategy for the improvement of Bochum through this new cluster approach and other projects (Stadt Bochum 2014b). After abandoning itself to its fate of shrinkage and economic downturn, this plan, and its predecessor from 2009, present the first comprehensive development strategy for decades and has an optimistic outlook on the future development. However, the plan has been criticized for being too much focused on connecting the inner city, the university campus and the former Opel area, and neglecting the other neighborhoods (Interview with Volker Steude, Die Stadtgestalter). Yet, the number of local neighborhood development plans (ISEK) has increased over the last few years (Bochum 2017) after the closure of the Nokia plant. It remains to be seen if the new impulses these plans and the cluster strategies coming along with it can establish a positive trend for the future development of Bochum. For the time being, the recent developments have created a positive outlook on Bochum’s development path.
3.3 Trajectories of growth and decline in Nagasaki

Nagasaki is one of many Japanese cities with negative population development. Since the number of people in Japan is decreasing as a whole, most cities have declining populations from high numbers of out-migration and a negative natural population balance. In the end of the 19th century, Nagasaki became one of the centers for industrialization, new technologies and commerce like it was before in the 1600s when Nagasaki was the only port in Japan allowed to trade with western countries (Hein 2016, 466). In the following years, Nagasaki became also a center for shipbuilding and fishery, which are still important industries for the city. The result of the openness and cultural diversity of this era caused the Japanese government to rebuild Nagasaki as the City of Culture after the destruction of the atomic bomb in 1945. However, the surrounding prefecture of Nagasaki is among the areas with the highest rate of aging and elderly people throughout Japan (Yahagi 2014, 149).

Nagasaki’s old town and former city center is located along today’s harbor area (Palmer 2016). Until the 16th century, the city was rather small. The city started to grow and prosper with the arrival of Portuguese and Dutch merchants and the European settlers who followed. At first the city expanded along the bay, but soon the development reached the hills and close by mountains (Palmer 2016, 477). The development in these slope areas led to small parcels of land and a narrow road system. Since several years, living in these areas is thus unattractive and difficult. Missing infrastructure like health care, schools, or public transportation cause people to leave the hillside areas, and move closer to the city center (City of Nagasaki 2017, 18). Moreover, there is a higher risk of damage during earthquakes or landslides, further reducing the values of these properties (Interview with Kazuo Samejima, Representative of Nagasaki Housing and Town-planning Trust).

In the past, but to some extent still today, economic growth in Nagasaki is based on maritime industries. In 1919, the company Nagasaki Steel Works of Mitsubishi Shipbuilding & Engineering was established in Nagasaki (Mitsubishi Nagsasaki Machinery MFG.CO Ldt. 2017), and became the biggest employer of the city (Yahagi 2014, 150). This company, specialized in shipbuilding, steelworks and machinery, and, along with other companies of the same sector, it spurred economic wealth. In 1975 the city peaked in its population development with around 500,000 inhabitants (Yahagi 2014, 150). With increasing automatization of production processes the number of employees in Nagasaki’s industry declined. This trend set in in the beginning of the 1990’s and continued until today (Yahagi 2014).

The rapid economic growth, in particular during the 1960s and 1970s, can also be observed in the city’s urban fabric. Due an increasing population, the demand for housing increased and the city gave way to develop the surrounding hills and mountain sites. Small terraces, formerly used for farming, became developable land. However, the provision of infrastructure could not keep up, as the small existing paths were turned into narrow roads. This era of more or less uncontrolled development is one of the main factors for the current problems with accessibility and service provision (Yahagi 2014, 151). In contrast to other hillside developments e.g. in the United States or also European cities these areas are not built up with spacious houses but are very densely populated areas with a majority of small buildings. In 1960, so called Densely Inhabited Districts (DID) with more than 40 people/ha reached only up to heights of 120m. 20 years later in 1980, the DID’s reached up to 200m. Today more than 70% of Nagasaki’s DID’s are located in the hills of the city. Additionally 43% of all DID’s have an incline of more than 17%5 (Yahagi 2014, 151).

5 According to Japan’s Rules of Road Construction the angle should not exceed 21% ((Yahagi 2014)).
Population Development

As displayed in figure 4, the population of Nagasaki was already quite high in the beginning of the century but increased even further after the end of WWII. Fuelled by rebuilding activities the economy thrived and the city soon reached the pre-war population numbers. Although the city lost 27 % of its population and 36 % of its building stock in the city center through the atomic bombing in 1945, other parts of the city were not as heavily damaged (Diehl 2014, 497). The first new buildings were finished in 1946 and the city was rebuilt after the vision of Nagasaki as international cultural city. This also led to a new orientation in economic development adding tourism as one of the main economic branches (Diehl 2014, 510).

Table 3: Population Development in Nagasaki 1920 – 2015

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<tbody>
<tr>
<td>Nagasaki</td>
<td>287.0</td>
<td>293.4</td>
<td>313.6</td>
<td>319.7</td>
<td>424.3</td>
<td>484.1</td>
<td>505.8</td>
<td>505.6</td>
<td>487.0</td>
<td>455.2</td>
<td>429.5</td>
</tr>
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* rounded in thousand
consolidated (including merged areas after 2004)
Source: (Statistics of Japan 2018)

Figure 8: Population Development in Nagasaki 1920 – 2015 (with Administrative Boundaries as of 2006)

Source: (Statistics of Japan 2018)

From the 1950s on Nagasaki’s population increased rapidly since the economic development on national level also helped the city’s local companies. Then, when economic decline set in, this also caused a decline in population. From the peak of 506,000 people in 1975, the population dropped to 429,000 people in 2015.
Regarding the more recent population development between 1985 and 2014, the extent of shrinkage in Nagasaki becomes clear (see figure 9). By incorporating the six neighbouring municipalities Kouyagi, Iojima, Takashima, Nomozaki, Sanwa and Kinkaicho (Nagasaki Web City 2016) in 2004 and 2005, the number of people living in the city could be increased, at least statistically. However, since the demographic structure in the incorporated municipalities does not differ from the one found in Nagasaki, the problems caused by an aging society remain. Moreover, since the economy in the surrounding municipalities is not strong enough to set new impulses for the city the economic effects are limited to an increased basis for public services. Therefore, the trend of shrinkage continues after the year 2005.

Reasons for Shrinkage

In general, shrinkage in Japan is mainly caused by the national tendency of low fertility rates. At the same time, Japan is an aging society. Another reason for shrinkage is the dominance of Tokyo as a destination for education (universities) and work. These two factors, the natural population decline and the Tokyo-bound outmigration, occur all over Japan with only few exceptions (e.g. Osaka and Nagoya). Since 1975, the fertility rate is below the level of natural reproduction and life expectancy is increasing. In 2008 Japan’s population peaked at 128 million people and is declining ever since (Hara 2015, 10). Also, Nagasaki has to deal with high numbers of out-migration of younger people not only to Tokyo but also to the city of Fukuoka, which is located in proximity to Nagasaki (Yahagi 2014).
Unlike the shrinkage pattern in other cities, in particular those in the U.S., the settlement structure is less dispersed in Nagasaki. Since small-scale shrinkage already occurred during the 1970s, the Japanese government tried to counter the effects. By adapting the tax system towards higher taxes for unbuilt and vacant land, and incentives for high rise buildings at the same time, population density was increased (Hohn 2000). During times of general growth, these incentives had positive results. However, since the rate of population decline increased in the 1990s, the negative effects of this policy are predominant. The reuse and reconstruction of vacant buildings is difficult since demolitions are quite expensive for two reasons: First, most of the vacant structures are located on the many slopes in the city, with only limited access for heavy machines for demolition and transport of debris. Sometimes there is no road access at all which means everything from demolition to reconstruction has to be done by hand. Second, taxes for vacant land are higher than for vacant buildings; which means it is not feasible for the owner to demolish vacant buildings and at the same time, vacant houses are difficult to sell because of the difficult demolition procedure. The renovation of buildings is also difficult. Often it is not profitable because of bad access, small sizes and therefore low value (Interview with Masahiro Nakamura, Nagasaki Economic Research Institute). For this reason, vacant houses remain within the neighborhood for a long time, further reducing property values and the living environment. Another reason for vacancy in Nagasaki and probably in Japan in general is worshiping the deceased. In memory to the dead, the houses are kept as they used to be (City of Nagasaki 2017, 18).

Dealing with shrinkage in Nagasaki

Programs of the central government
During the 80’s and early 90’s, the Japanese central government had, as other countries as well, neglected the problem of shrinking cities. With rising awareness of the problem, in the late 1990’s and early 2000’s, several laws regarding planning and the tax system were reformed in order to give the municipalities more options and better tools for dealing with shrinkage. One of these laws recognizes Non-Profit-Organizations (NPO) as actors in planning processes. Although there were incentives to include local people in the planning process by means of participation, especially within their own neighborhood, during the 1980s, the general legitimation for NPO’s as part of planning was only passed in 1998. These NPO’s fulfıl an important role within Japanese society by providing support and help for marginalized groups and the elderly (Funck 2012, 111). In general, this led to a stronger involvement of people in planning and introduced a new form of participation in Nagasaki (Interview with Toshio Sugihara, Nagasaki Institute of Applied Science).

In 1999, the central government established a long-term plan for merging municipalities. There were more than 3200 municipalities in 1999. In 2014 only 1742 remained. The goal is to continue merging municipalities to a final number of around 1000 (Hara 2015, 19). This policy was the reason for Nagasaki’s mergers in 2004 and 2005. Once more, this policy demonstrates the strong infl-

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6 The Japanese welfare system is heavily relying on personal savings and private initiatives, there is only little state pension.
In addition, the recent reform of property tax can help to deal with the effects of a declining population. In 2014, the high taxes on vacant land were reduced so it became easier to convince property owners to demolish their vacant house. Now it is even possible for the municipality to order demolition or renovation of deteriorated houses for security reasons since those structures might form high risks during natural catastrophes like earthquakes or landslides (City of Nagasaki 2017, 29). Another important event in 2014 was the publication of “Local Extinctions” by Hiroya Masuda in 2014. Although the facts of declining population and shrinking cities and municipalities were not new to the scientific community and experts in the field, the reputation of Masuda caused a wider discourse in the general population and therefore in the political realm. From now on the planning for decline gained momentum in Japan (Interview with Takehiro Zenmei, Ministry of Economy, Trade and Industry (METI) and Norio Miki, Nomura Research Institute).

Initiatives by the City of Nagasaki and non-profit organizations
The city of Nagasaki has recently released a number of plans and concepts for its future development - all of which address the problem of shrinkage and the consequences. The new masterplan for Nagasaki aims at planning for a compact city by concentrating future developments within the areas accessible by public transportation. In order to accomplish this task, several sub-centers are developed to complement the city center. Additionally, the plan suggests zones for development with a focus around the center and sub-centers. For the slopes and hillsides of Nagasaki, this plan only allows very limited development e.g. renovation or replacement of existing houses (City of Nagasaki 2016b, 3). Furthermore, the city adopted a Location Optimizations Plan in 2016...properly locating facilities, medical facilities, welfare facilities, commercial facilities, houses... in line with the concept of 'compact city plus network' (City of Nagasaki 2016a, 2).

In addition, the city published the 'Housing and Living Plan’ with special reference to the housing and living conditions in Nagasaki in the year 2012. Besides a detailed analysis of the housing stock, this concept recommends several actions for improvements especially regarding the access to public housing (City of Nagasaki 2012, 53–55). In line with this plan, living in public housing should be related to income levels and thus prioritize families with children since at the time a lot of living units in public properties were occupied by 'wealthy' tenants. However, the city did not identify the location of specific vacancies within the city. Although a vacancy report system is up and running on the city’s website (City of Nagasaki 2018b), for the time being it remains difficult to detect neighborhoods with vacancy problems since there is no complete overview on vacancies. If vacant houses are identified, the city also developed a set of recommendations and ideas for dealing with the problem. For instance, the 'Vacant House Management Plan’ published in 2017,
is analyzing the main reasons for vacancy, such as population losses, but also the low property values, and previously higher taxes for vacant land.

The recommendations made in these plans range from increasing the awareness for the problem of vacancy, promoting interim uses, support home owners and tenants to avoid vacancy (e.g. shopping services for the elderly) and to improve the accessibility. Furthermore, the city decided to subsidize renovation costs based on specific categories of deterioration. The most extreme measures are the order for renovation or demolition in case of safety issues (City of Nagasaki 2017, 23f).

To relief owners of vacant property, it is now possible to reclaim vacant land and hand it to the local neighborhood council to use it for public services or recreation areas. This is particularly important in older parts of the city where higher densities exist.

In general, various NPO’s are active in Nagasaki for example to offer services to elderly people. One of these NPO’s is the Nagasaki Housing and Town-planning Trust. This organization is dedicated to improving the access within the slopes. The plans comprise of a system of elevators making ascend and descend easier. This is not only important for daily access but also in case of fire or other emergencies (Interview with Kazuo Samejima, Nagasaki Housing and Town-planning Trust). However, in case of natural disasters like earthquakes or landslides, this system would only be of limited use.

Preliminary reflections on the Nagasaki case

The City of Nagasaki recently developed a number of plans and concepts to deal with shrinkage. This originated specifically with the interventions of central government putting a stronger focus on shrinkage in its policy development. This reactive initiative from the city is somewhat surprising giving the intensity of the shrinkage problem. It remains difficult to judge if city officials have accepted shrinkage and are finally dealing with its consequences, or if the strategies applied, remain in a passive-reactive mode, like in past decades. The economic development strategy focusing on shipbuilding, fishery and tourism as the traditional and economic branches, however, lacks innovative spirit, but follows the recommendations of the economic development concept drafted by the Ministry of Economy, Trade and Industry. Although the knowhow created in these industries could be used for new companies, e.g. in the renewable energy sector, this potential is not utilized to its full potential. Quite similarly, considering the existing universities as potential source of innovation and in-migration of young people is in its infancy. Yet, combating shrinkage is work in progress, as an updated concept is soon to be published by METI focusing on more innovative branches like renewable energy and the role of universities (Interview with Takehiro Zenmei, Ministry of Economy, Trade and Industry (METI)).

3.4 Select planning strategies revealed

Based on the analysis of the previous parts of this paper, the following paragraphs will highlight select planning strategies, which appear – in the authors’ opinion - on the one hand representative for the specific case’s approach towards shrinkage, and on the other hand, they appear to be of an innovative value for planning.
Cleveland: Focused growth

As highlighted in the previous paragraphs, the city of Cleveland has experienced economic transformations and shrinkage since the 1960s. In order to jump start substitute industries to compensate for the losses the city had to face (in jobs, people, and image), in recent years Cleveland has adopted a development strategy based on the attempt to establish itself as a center for biotechnology, medical research and medical care. In doing so, the city’s approach is much in line with other Rust Belt cities in the Great Lakes Region trying to innovate their economies by building on their institutions of higher education and research (Austin 2017). Apparently, this strategy has been successful so far, since the research and learning institutions have been major contributors to the economic transition and revival of many of the region’s major metro areas’, among them the city of Cleveland (Austin 2017).

This approach to urban and regional development has certain advantages. Jobs that are created in this sector are unlikely to be shifted abroad, offer high-skill work and high wages. Consequently, Cleveland has attempted to transform itself into a center for innovation thus trying to shed its Rust Belt image, often based on initiatives by the private sector. One of them is the Greater University Circle Initiative (GUCI). The development of GUCI started as early as in the 19th century when Western Reserve University and Case Institute of Technology decided to find a new location for their expansion (University Circle Inc. 2018). Over the years many more institutions decided to locate at University Circle and the area became a world-class center of innovation’ (University Circle Inc. 2018). In 2005, GUCI was officially founded, supported by the Cleveland Foundation (Cleveland Foundation 2013: 24). Under the roof of GUCI, the Cleveland Foundation, University Circle Inc. and the institutions of University Circle such as Case Western Reserve University, Cleveland Clinic, University Hospitals, the City of Cleveland and many more work together (Cleveland Foundation 2014, 24). The aim of the initiative is to promote dialogue about the future of surrounding neighborhoods [and to] catalyze and help fund projects to transform both the built environment and the lives of residents’ (Cleveland Foundation 2014, 24).

The collaboration provides many advantages like a platform of discussion, transparency, a new way of working together, accountability, neutrality, continuity and, capacity for catalytic project conception and fundraising’ (Cleveland Foundation 2014, 25). GUCI developed four areas to focus on (Cleveland Foundation 2014, 32–33):

1. Institutional partnership and basic element of the initiative that enables the Greater University Circle Initiative to survey growth.

2. Physical development, focusing on housing and retail projects and investments in transportation.

3. Economic inclusion like motivating employees to live and consume in the neighborhoods on the one hand. On the other hand, they try to persuade companies and institutions to hire people who live in the neighborhoods.

Meanwhile, GUCI established a wide range of projects to connect institutions with surrounding neighborhoods, which rank among the poorest in Cleveland. The idea is to let those neighborhoods participate in the positive developments of University Circle and create spillover effects.

Another approach to boost both the economic development in Cleveland and improve living conditions in the city’s neighborhoods most affected by unemployment and shrinkage, is the Health Tech Corridor. This collaboration between BioEnterprise, the Cleveland Foundation, the City of Cleveland, and MidTown Cleveland (neighborhood), founded in 2010 (Cleveland Health Tech Corridor 2018), is gradually redeveloping vacant land and buildings along the former industrial heartland of the Cleveland. Old factory buildings are renovated and new buildings added to create a dense cluster for biomedical, healthcare and technology companies (Interview with Michael Lalich, Project Manager Health Tech Corridor). The growing number of jobs and companies in this area display the success of this development approach and the positive effects so far have led to new masterplans in adjacent neighborhoods like Fairfax and Midtown.

Overall, private actors together with city officials have adopted a clear strategy to turn Cleveland into a hub for the knowledge economy. Investment is flowing into the city, programs ensuring that existing communities are integrated in this transformation, and areas such as University Circle and Health Tech Corridor have seen urban renewal.

Bochum: Aggregated approach and growth

In Bochum, recent activities towards a knowledge-based economy are demonstrated by the increased focus on the university as a potential source of both citizens and jobs. By establishing two clusters, between 2007 and 2009 (IT security, based on former Nokia employees and the Health Campus next to the university) Bochum has entered a path of high tech and high value industries (Schober 2014, 9); Johannes Peuling). The subjects of education and medicine have always been important aspects for citizens and IT security becomes more and more important with the interconnectivity of digitalization and automatization. In the future, with increasing global competition for education and research resources, with the aging of society, with medical advances and big data business models, this importance will increase even further. In doing so, it is actively taking on two aspects of the same coin:

1. The educational infrastructure counts as an important basis for successful economic development in the respective municipality, as it provides well-trained specialists for the local and regional labor market, creates jobs, and provides the potential for new citizens by attracting students. Depending on the size of the (higher) educational institution, the number of jobs varies (Ragnitz 2014, 6–7). The City of Bochum is home to 57,000 university students and 10,000 direct jobs at the 9 local universities. Subsequently, education is an important economic factor (Bochum Marketing GmbH 2018; Interview with Johannes Peuling, Economic Development Agency Bochum).

2. The importance of future health technologies and health infrastructures is increasing. These include, for example, information technology and big data, as well as the possibilities of increasingly individualized medicine, improved diagnosis and therapy, but also new methods for prevention and rehabilitation (Schober 2014, 9). The city of Bochum is home to eight university hospitals and to higher and lower medical education facilities. In addition Bochum’s IT security
cluster has a high reputation within Germany and Europe, although the marketing of this success could be improved (Johannes Peuling, Economic Development Agency Bochum).

Bringing together these major economic and future oriented factors of education, medicine and IT security creates a great potential for the city of Bochum. Medical universities and their medical centers are important industrial and enterprise clusters. Here, strong contributions are made to the economic foundation of their local municipalities and beyond into the region. Cities are able to generate tangible benefits such as employment and as well as intangible benefits such as prestige and a change of image (Ehlenz et al. 2014). Consequently, Bochum has started to promote and support the combination of these innovative sectors.

The two parts of health economics and health technology as well as the link with university research and IT security represent an innovative mix. Generally speaking, the healthcare industry is one of the largest parts of the developed economies. Especially in Germany, the health sector is a job engine that is expected to grow even further with an aging society (Schober 2014, 9).

Particularly efficient and productive is the combination of cross-sectoral efforts linking professions of supply, science and economics. University institutes are associated with facilities of research, practice for this as well as production and administration. The city of Bochum has created exactly this constellation with its project Health Campus and is currently applying those structures to the IT security cluster. The spatial and functional connection of the Medical University with the University of Applied Health Science, the health institutions and administrations of the state of North Rhine Westphalia, public and private research institutes, companies from the health industry and the manufacturing industry makes an important contribution to framing and mastering the increasing number of innovations in healthcare. With the project Health Campus, Bochum is providing a place for companies and institutions to develop in close proximity to each other and benefit from the respective potentials. The plan is to create similar structures for the IT security cluster that is, so far not concentrated on one special site in Bochum but consists of a strong network of stakeholders and companies. This strengthens the economic prospects of Bochum and could counteract the loss of jobs in the manufacturing industry as well as counteract shrinkage (Johannes Peuling, Economic Development Agency Bochum).

Nagasaki: Top – down implementation and reacting

In contrast to Cleveland and Bochum, dealing with shrinkage and economic downturn in Nagasaki has only recently gained momentum. Although population loss and aging have been obvious problems for some time, the city had only limited options, due to the centralized planning system, to adjust the existing planning framework towards counteracting the effects of demographic decline. After the problem gained national attention in 2014 the central government developed policies and planning frameworks to take action. Subsequently the city of Nagasaki developed a local Location Optimization Plan to enforce the guideline of the compact city, the Vacant House Countermeasures Plan and finally the Town, Human and Job Creation Plan.

The Location Optimization Plan, along with the regularly updated master plan, is the key planning document for the future development of Nagasaki. It outlines the focus on infill development
and development in the city center. It also prevents further development on Nagasaki’s hillside area, in the long term improving the accessibility of services and in case of natural disaster. In the meantime, the city is heavily relying on NPO’s and neighborhood communities to support (elderly) citizens in these areas. Therefore, Nagasaki provides funding opportunities for these NPO’s and community networks to support innovative approaches and improve living conditions (Yahagi 2014, 160).

Another major aspect of the new planning strategy is the aforementioned reform of the property taxation. Along with this national reform with its objective to reduce vacancy and derelict buildings, Nagasaki has developed the Vacant House Countermeasures Plan and established a public vacancy database. This adds a local program that allowed citizens to donate their property to the city to avoid higher taxation on vacant land. Although Nagasaki’s vacancy database is not comparable to a land banking system like e.g. in the USA, it is a step further towards a systematic approach to deal with vacant properties. So far, the city had to rely on data shared by private housing companies regarding vacancies (Interview with Masahiro Nakamura, Nagasaki Economic Research Institute).

However, regarding its economic structure, Nagasaki is not trying to reinvent itself. The comprehensive plan on economic development and job creation (Town, Human and Job Creation Plan) is focusing on the city’s traditional industries, shipbuilding and fishery with a focus to help start-ups and local companies to improve their business (Interview with Takehiro Zenmei, Regional Economic and Industrial Policy Group, Ministry of Economy, Trade and Industry (METI)). The cultural richness and diversity, the latter being an outstanding asset compared to other Japanese cities, so far is only used to market Nagasaki as a destination for tourism, predominantly in South-East Asia. Thus, the potential of these assets regarding cultural industry is only partially used. Furthermore, Nagasaki’s reputation as a center for high-tech manufacturing (Yahagi 2014, 159) offers the potential for innovative technology applications like (marine) renewable energy or offshore wind parks. Although Nagasaki is a testing ground for those technologies (Interview with Masahiro Nakamura, Nagasaki Economic Research Institute), they only play a marginal role in the future development perspective.

Although Nagasaki University is ranked among the top 30 universities in Japan (total number 778) (Times Higher Education 2017) the higher education facilities in Nagasaki again only play a marginal role in the city’s economic outlook. Despite the strong competition of larger university cities like Tokyo, Kyoto or Kobe, the university could play a more important role in Nagasaki’s future development.

Overall, the plans and programs for dealing with shrinkage can address the urgent problems of vacancy and low service accessibility. However, planning and development appear to be slow and inflexible and it remains to be seen if with the future development of national plans and programs, the economic development trajectory can be adjusted towards more innovation and a knowledge based economy.
4. Preliminary conclusions: Shrinkage in different planning cultural settings: where do we stand?

For a long time, urban and regional research has associated planning cultures with specific national settings, or countries (Sanyal 2005) much like the term ‘planning systems’ (Pallagst, pre-print). In these discourses the planning cultures e.g. of Germany, the USA, and of Japan would be viewed as more or less homogeneous entities. Further research (Reimer 2012) has broadened this viewpoint, thus placing planning cultures in a context of planning levels: differentiating national, regional, and urban ones.

In view of the development set off by shrinkage and the changes in planning revealed in the empirical part of the research, one might ask if the notion of planning culture is bound to change as much as planning is? In line with this thought, Pallagst (forthcoming) has framed first ideas for an operative definition of planning culture. Accordingly, planning cultures is defined as follows: ‘Planning cultures encompass the societal aspirations towards planning – its processes and its outcomes. It refers to the values and shared beliefs of stakeholders involved in planning, and the methods and tools they are applying and producing. Planning cultures are not static but constantly evolving in line with societal changes or planning related challenges. Planning cultures as we see it can be attached to specific territorial entities, be it nations, sub-nations, regions, or cities - most likely but not necessarily within administrative boundaries. In addition, they can be attributed to cities or regions having to face specific planning problems.’

In all case study cities, specific events have led to raising the awareness for shrinkage, and thus generate respective targeted policies and programs. Sorensen labels these intersections ‘disruptive events’, or ‘critical junctures’ (Sorensen 2014). When analyzing the case study cities, several of these events could be traced. They comprise for instance the shutdown of the Nokia plant for Bochum, the financial crisis starting in 2008 for Cleveland, and the national report ‘Local Extinction’ for Nagasaki. The list of the programs, which followed suit, is long. The most prominent ones might be the sustainability summit held in Cleveland in 2009, which initiated the policy Sustainable Cleveland. In Bochum, the city’s government started to establish the Health Tech cluster and the IT Security cluster, which led to new dynamics in the economy. In Nagasaki, the government followed the national initiative and drafted plans and programs to mitigate the effects of demographic decline.

At the beginning of the research, the hypothesis was expressed that planning strategies can only in part be transferred from one planning context to another. Nevertheless, similar tendencies might be traced. The research presented here demonstrates that in the case study cities, similar or comparable patterns of strategies can be identified. Some strategies can be derived from the genuine context of shrinkage, such as interim uses (Pop up City in Cleveland), or the acquisition of substitute industries (Health Campus in Bochum, University Circle in Cleveland, Tourism in Nagasaki). Other strategies, policies, or guiding principles for planning are in line with general trends in planning. Interestingly, the compact city principle can be found in Bochum and Nagasaki alike, and – at least in part – in the focused growth approach of Cleveland.

For PlanShrinking², the case study research sheds light on the much complex interdependence of planning, its instruments, its challenges, and – finally yet importantly – planning cultures.
References


"Housing and Living Plan: Basic." 2012.


"Location Optimisation Plan." 2016a.


"Masterplan: (Kurzfassung)." 2016b.


## Appendix

### A.1 Overview on strategies in the three case study cities

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| Masterplans: Bochum Ost: Integriertes Gesamtkonzept Untersuchungsraum West: Crowd city area that is remarkably dangerous at the time of earthquakes. |
|---|---|---|
| Specific Topic: Masterplan Einzelhandel Bochum: Promotion of earthquake resistance of large-scale growing earth on the ground and developed for housing in Nagasaki-shi. |
| Substitute Industries: Masterplan Universität-Stadt: Restricted zone. |
| Strategies: Cultural/Industrial Heritage: Cruise Ship Terminal: |
| University Circle Inc. (Greater) University Circle development: Creative Industry Cluster: Technology- and Business incubator Wackerschandl | City-Gate South-Viktoria Quarter: |
| Event Tourism: Sport Events: University of Bochum: Spin-Offs: Research Cluster: |
| Byway Improvement Plan: GSE Bochum-Dahlhausen: Great virture Tenchi ward. |
| Lower Big Creek Study: Entwicklungs- und Stadt-Querdenkmal: Interkommunala: South Dura district. |
A.2 List of interviewees

Interviewees in order of the time the interview was conducted:

**Cleveland**

Freddy Collier, head of Cleveland Planning Commission,
Bill Whitney, Chief Operating Officer for the Cuyahoga County Land Bank,
Kathryn Hexter, Director of the Center for Community Development at Maxine Goodman Levin College of Urban Affairs (Cleveland University)
Lillian Kuri, Vice President Strategic Grantmaking, Arts & Urban Design Initiatives,
Tom Stravinsky, Downtown Cleveland Alliance
Leah Smith, Downtown Cleveland Alliance,
Terry Schwarz, Director of the Urban Design Collaborative Cleveland (Kent State University Cleveland)
David Jurca, Director of the Urban Design Collaborative Cleveland (Kent State University Cleveland)
Michael Lalich, Project Manager at the Health Tech Corridor
Chris Ronyane, President of University Circle Inc.

**Bochum**

Rolf Taube, Department for Statistics and urban Research; Lars Tata, project manager UniverCity, 
Stefan Postert, Chamber of Commerce Central Ruhr Area (IHK Mittleres Ruhrgebiet),
Johannes Peuling, Director of the Health Campus Development Agency (Gesundheitscampus)
Eckart Kröck, Head of Department for Urban Planning and Housing (Amt für Stadtplanung und Wohnen), (phone interview 23. June 2017),
Volker Steude, member of “Die Stadtgestalter” (NGO), (phone interview 31. August 2017)

**Nagasaki**

Tetsuji Uemura, Senior Researcher, Nomura Research Institute
Masahiro Nakamura, Director of Nagasaki Economic Research Institute
Kazuo Samejima, Representative of Nagasaki Housing and Town-planning Trust
Takeshi Shigyo, Plan Finance Department, Urban Management,
Keiko Shinozaki, Plan Finance Department, Urban Management
Susumu Matsuo, Plan Finance Department, Urban Management
Hisato Yamada, Plan Finance Department, So Nagasaki Straight Promotion
Makoto Hamaguchi, Commerce & Industry Department, Industry & Employment Policy Section, Secretary General, Nagasaki Port Advancement Center
Shogo Hira, Town Development Department, City Planning Division
Yuji Nakai, Town Development Department, Town Development Promotion
Kouji Kamichika, Town Development Department, House Section
Toshio Sugihara, Nagasaki Institute of Applied Science
Tokyo

Franz Waldenberger, Director, German Institute for Japanese Studies
Susanne Brucksch, Senior Research Fellow, German Institute for Japanese Studies
Sonja Ganseforth, Senior Research Fellow, German Institute for Japanese Studies
Hanno Jentzsch, Senior Research Fellow, German Institute for Japanese Studies
Sophie Buhnik, Researcher, Maison franco-japonaise
Norio Miki, Senior Consultant, Nomura Research Institute
Fumihiko Seta, Associate Professor, University of Tokyo
Junko Yasuda, Senior Researcher, Nomura Research Institute
Takehiro Zenmei, Deputy Director, Regional Economy and Industrial Policy Group, METI