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Abstract

Weimar achieved urban recovery as a ‘consumer city’ with sub-brandings like a population magnet with a high living-quality, a cultural city with touristic attractions, and a university city. Its intensive cultural promotion policies combined with urban regeneration programs have contributed to the recent demographic and economic growth. This study demonstrates this success and investigates its sectoral weaknesses compared to other German cities. Weimar needs an optimal mixture of consumption- and production-oriented development strategies to rectify the current structural imbalances and better control those negative impacts caused by a rapidly ageing population. Besides ample presence and intact connectivity of high-tech industries and producer services within a city which enhance R&D, innovation and productivity, Weimar should more seriously consider, when design-ing future development policy, that both urban growth approaches are interrelated: agglomeration generates higher income for the creative class, whereas high urban amenities attract young creative entrepreneurs selecting locations for start-ups.

JEL-Codes: P250, O140, O380, R110, H760.

Keywords: urban resurgence consumer city, Weimar, East Germany, post-industrial transformation, population magnet, modern industries and services.

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1 Introduction

Unlike the worldwide trend of increasing urbanization process (UN, 2014; Oueslati *et al.*, 2015; Bartholomae *et al.*, 2016), many East German cities are still experiencing economic declines and population reduction. An urban shrinkage is widely characterized as a multidimensional complex of demographic changes (e.g. ageing and population loss), socio-economic development (e.g. economic downturn, employment decline, and poverty concentration), and related physical effects (e.g. infrastructure, housing or industrial deterioration) in constant interaction (Martinez-Fernandez *et al.*, 2012; Morrill, 2014). In East Germany, however, it has been particularly triggered by the “failure to achieve a timely and smooth post-industrial shift from traditional manufacturing to [...] innovation-driven high-tech industries and modern business-oriented services [after the 1990-reunification]” (Bartholomae *et al.*, 2016, p. 2). In other words many East German cities are still in a painful economic transformation process, while some are seriously suffering from symptoms of a structural crisis creating serious unemployment and outmigration problems (Bartholomae and Nam, 2014b). Furthermore, the deterioration of fiscal base accompanied by the urban shrinkage has created financial bottlenecks in safeguarding local infrastructure levels and quality of life in East German shrinking cities such as Cottbus, Halle and Schwerin: a rapid emergence of problems related to vacant and underutilized housing; uncompetitive, old local business firms; poor communication and transportation systems; and other ailing infrastructure like schools, waste disposal facilities, etc. have recently been immediate consequences (see also Großmann *et al.*, 2013; Hollander *et al.*, 2009; Bartholomae and Nam, 2014b; Haase *et al.*, 2014).

However, there are also growing East German cities (Rink *et al.*, 2012; Bartholomae and Nam, 2014a): for example, large cities like Dresden and Leipzig have been able to successfully manage the structural transformation, whereas some medium-sized cities such as Jena and Rostock, offer attractive jobs in modern industries and producer services, and provide high-quality education and research facilities, have achieved recently favorable economic performances as well (see also Hospers, 2014). In this context, Cottbus, Halle¹ and Schwerin have attempted to fasten their post-industrial transformation process and emerge as modern industrial cities, while better exploiting their former manufacturing strength and know-hows – unfortunately such efforts appear to have remained in vain until today.

Weimar’s urban recovery strategy has been rather different. Largely based on its long historical paths with ample cultural heritage and artistic tradition, Weimar has decided to develop itself as a kind of ‘consumer city’ equipped with high amenities (Glaeser and Gottlieb, 2006; Glaeser *et al.*, 2001) in the eastern part of Germany. Its well-defined, intensive cultural development strategies in combination with a number of urban regeneration and renewal programs have significantly contributed to its recent demographic and economic growth. Nowadays the city enjoys several brandings like a ‘population magnet’, a ‘residence city’, a ‘cultural and museum city’, a ‘touristic attraction’ and a ‘university city’. Most importantly, Weimar has demonstrated that the urban resurgence can be achieved as a consumer city, although modern industries and business services are rather weakly represented in the city.

¹ Halle currently wishes to attract basic and applied research activities for future technologies such as life science, new materials, solar energy, etc. (City of Halle, 2010).

Apart from the investigation of the city-specific resurgence policy measures followed by the systematic analyses of empirical facts which highlight the success story of Weimar, this study additionally aims at exploring several reasons why the city should more seriously consider an optimal mixture of consumption- and production-oriented urban development strategies in the future. As most rapidly growing German cities have already witnessed, particularly in the context of urban competition (Bartholomae *et al.*, 2016), the enhancement of innovation, creativity and productivity - three traditional engines of urban economic growth - can be more easily achieved by the concentration and intact connectivity of ample number of high-tech industries and producer services within the city area (see also Glaeser, 2008; Turok and Mykhnenko, 2008; Florida, 2014). Such production-oriented strategies would also be necessary in Weimar not only to rectify the weakness of the city's sectoral structure and also the negative impacts caused by the ageing problems, but also to create a more balanced and diversified urban economy which can better guarantee the future stability. Eventually the production- and the consumption-oriented urban developments (and also resurgences) are interrelated. Agglomeration generates higher income (and also consumption) for innovation- and creativity-based occupations (such as artists, engineers, financial executives and IT experts, etc.), while the high cultural amenities of a city play an important role, when these young creative entrepreneurs select the locations for start-ups and/or residential purposes.

The agenda of the study is as follows. Section 2 provides some basic theoretical backgrounds explaining major characteristics and differences of urban recovery strategies, and it also demonstrates the ways how German public urban rehabilitation programs have recently been coordinated and applied for the purpose of stopping the urban shrinkage in the eastern part of Germany. Based on official demographic and economic data, the third section primarily examines Weimar's success in resurgence as a consumer city, while some of the city's critical sectoral imbalances and anticipated challenges caused by the serious mismatch in the inhabitants' age structure and migration trends are additionally elaborated in the context of a comparison with other selected East German cities. The final section summarizes the major findings of the study in a systematic way and delivers several policy recommendations which appear to be necessary to better guarantee Weimar's sustainable economic development and also stability in the long run.

2 Urban Resurgence Strategies

In response to the challenge of urban shrinkage, policymakers have options to adopt either an 'active' growth-oriented or a 'rather passive' shrinkage-oriented approach (see also Wiechmann and Pallagst, 2012; Bartholomae *et al.*, 2016). Compared to the fact that most American cities generally tend to prefer the former type of strategies such as growth management and smart economic growth, shrinking cities in Europe have more frequently adopted the latter policy option in recent years (Lin, 2014). This is particularly true, if we consider the recent East German experiences, where urban shrinkage has recently been most serious in Europe.

Those who favor the growth-oriented strategy emphasize the traditional role of cities as the major drivers of innovation, creativity, and productivity growth in advanced economies (see also Glaeser, 2008; Florida, 2014). In this context, Turok and Mykhnenko (2008) argue that the improved generation of agglomeration advantages (especially for firms) is urgently re-

quired to overcome the urban shrinkage, which is expected from the concentration and intact connectivity of high-tech industries and modern business-oriented services within the city area (see also Lüthi *et al.*, 2013; Yeh *et al.*, 2015). In particular those producer service firms which provide engineering, consulting and information technology services tend to locate near manufacturers (Hobor, 2013). In addition, such clusters can, not only attract the so-called ‘creative occupations’ (Shutters *et al.*, 2016; see also below), but also create a kind of ‘place identities’ for a city and the shared knowledge of place fate and common future can positively affect the urban resilience (Benner and Pastor, 2016). More importantly, they see that the innovation activities carried out by local firms enable the rapid recovery from the urban shrinkage and also guarantee not only the smooth structural reform but also the overall productivity enhancement and long-term economic growth in the cities. Innovation has recently been widely recognized as an evolutionary, systemic process resulting from various associational interactions among many actors located in a given city: a typical urban innovation system comprises horizontal and vertical relations among industrial and service firms (He and Romanos, 2016), and their contacts with local research institutions (including also universities and technology centers – see also Huggins and Prokop, 2017) as well as government promotion agencies, interest groups which provide commercial, technical and information support and the venture capital providers.

Bartholomae *et al.* (2016) take a further step forward. Considering several Ruhr cities (such as Essen and Dortmund) and East German cities like Dresden and Jena as examples, they demonstrate that urban economic growth can also be well realized in spite of declining population size, when the large-scale presence of modern industries and business services guarantees urban economic recovery. In this context, they argue that urban resurgence strategy in East Germany should not only be oriented on the syndrome of urban shrinkage (in particular the reduction of inhabitants; deterioration of city centers; vacant houses and infrastructure overcapacity, etc.) but more strongly and effectively tackle the root of the problem, namely the post-industrial transformation failure. Furthermore, the prevailing less-competitive industrial structure has also caused innovation activities to remain extremely weak in these cities (Berlemann and Jahn, 2013). Consequently, more ‘proactive’ industrial (structural) policy appears to be urgently required in cities like Cottbus, Halle, Schwerin, etc. to combat the urban shrinkage in terms of creating a competitive manufacturing sector (equipped with new high-tech firms) and fostering growth interdependence with modern local business services.

In addition to the aforementioned ‘production’-oriented strategies, Glaeser and Gottlieb (2006) and Glaeser *et al.* (2001) emphasize the importance of urban density in facilitating consumption. In this context, they introduce an additional policy option for combating the urban shrinkages and stimulating the urban economies by strengthening the role of ‘consumer city’ with high amenities (Clark, 2007; Clark *et al.*, 2002),² because “the concentration of major entertainment venues, convention centres, museums, opera, art galleries or specialised centres of education and health offer unique benefits to consumers [e.g. by providing wide

² In addition to the rich variety of services and types of consumer goods that a consumer city provides, the following factors appear to shape its amenity: (a) aesthetics and physical settings (e.g. weather), (b) good public services (schools, hospitals, low crime), and (c) easy and speedy mobility in the city area – see also Glaeser *et al.* (2001); Meier and Rehdanz (2017).

varieties of shopping opportunities, restaurants, hotels, etc.], with spin-offs for growth through business and domestic tourism and talent attraction” (Turok and Mykhnenko, 2008, p. 56). Consumer cities can also be further classified into the so-called ‘art and culture cities’, ‘museum cities’, ‘fun cities’, ‘university cities’, ‘sports and leisure cities’, etc., which also promote urban branding and authenticity (Strom, 2008; Hobor, 2013; Ulldemolins, 2014). The reasons for the anticipated increases in number of consumer cities in the future seem to be rather simple: “as human beings continue to get richer, quality of life will become increasingly critical in determining the attractiveness of particular areas. After all, choosing a pleasant place to live is among the most natural ways to spend one’s money” (Glaeser *et al.*, 2001, p. 28). In the context of an ageing society, older adults’ well-being and their residential relocation decision will continuously gain importance especially for the consumer cities, which is, in addition to the housing prices, largely shaped by the residential environment including good quality residential buildings, good accessibility to leisure, medical and financial facilities, etc. (Chapela, 2012; Liu *et al.*, 2017).

Yet these production- as well as consumption-oriented urban growth and resurgence strategies are interrelated to a larger extent (see also Rausch and Negrey, 2006). The focus on firms rather than people in the context of the ‘production-oriented’ agglomeration externalities has been challenged by Florida (2014) arguing not only that agglomeration enhances earnings in R&D-, innovation- and creativity-based occupations such as artists, engineers, financial executives and information technology workers in the cities (see also Basset, 2017; Gabe and Abel, 2011), but also that urban amenities significantly attract these ‘creative’ people to cities who are professionally talented and technologically well-educated and in addition tolerant of social diversity (see also Vanderleeuw and Sides, 2016). Empirical analyses such as Wenting *et al.* (2011) and van der Waal (2013) suggest that advanced producer services more strongly settle in cities that are rich in cultural amenities, and that ‘creative class’-entrepreneurs (including also designers) consider urban amenities more important than agglomeration economies for their location decision (see also the so-called ‘post-materialist’ thesis by Camobreco and Barnello, 2003).³

In contrast, Hospers (2014) argues that shrinking cities should accept the shrinkage as the ‘irreversible degrowth’ (Schindler, 2016), ignoring those aforementioned production- and consumption-oriented resurgence policy measures, and consequently it is wiser to just do their best to improve quality of life for the remaining urban residents. A large number of East German shrinking cities appear to have been adopting such a passive policy: instead of fastening the transformation of urban economic structure and exploiting the opportunities for attracting qualified immigrants as well as enhancing productivity and growth, they have primarily attempted to stop the negative demographic trends, to overcome the ageing problems caused by shrinkage and, at the same time, searched for appropriate ways for maintaining their population size (Bartholomae *et al.*, 2016). For this reason, most public promotion schemes in the

³ Regarding urban labor migration and its determinants in Germany, Buch *et al.* (2014) highlight the importance of amenities such as cultural infrastructure and matching externalities in urban labor markets that are linked to city size.

former GDR have solely focused on the creation of quality-of-life cities in terms of regeneration, redevelopment and revitalization of city cores, aimed at solving vacant housing problems, making historical centers more attractive and urban neighborhoods greener, more compact and sustainable (Krautzberger, 2001; Herfert, 2002; Bullinger, 2002; Glock and Häußermann, 2004; Lötscher, 2005). The economic consequences of such a passive policy for those shrinking cities in the eastern part of Germany is clear: they remained less successful in attracting not only modern high-tech industries but also creative classes, modern business and producer services, whereas their ambitions, prerequisites and potentials to become a consumer city appear to have recently been rather limited in comparison to the case of Weimar. Table 1 summarizes federal promotion schemes for urban reconstruction and associated subsidies, whereas Table 2 demonstrates the ways in which the public urban rehabilitation programmes applied to the shrinking cities in eastern Germany are coordinated and financially promoted by the different tiers of government.

Table 1. Federal subsidies for rebuilding and improving cities in Germany

Project title	Major aims	Total subsidies 2009-'12
Social City (<i>Soziale Stadt</i>)	Stop 'downward spiral' in disadvantaged neighborhoods; improve living conditions in cities under consideration of unemployment rate, education facilities and other infrastructure deficits, etc.	€268 million
Urban Reconstruction as an Adaption to Demographic and Structural Change (<i>Stadtumbau für die Anpassung an den demographischen und strukturellen Wandel – Stadtumbau Ost / Stadtumbau West</i>)	Improve quality of life and work in East and West German cities and municipalities of which measures consist of revitalization of inner-city areas and preservation of old buildings; removal of vacant houses for other purposes, etc. in shrinking cities	East: €381 million West: €328 million
Preservation of Centrally Located Monuments in Eastern Germany (<i>Städtebaulicher Denkmalschutz für den Erhalt historischer Stadtkerne und Stadtquartiers in Ost</i>)	Preserve historical city centers and improve general conditions for monuments	East: €280 million West: €119 million
Active Inner-City Development (<i>Aktive Stadt- und Ortsteilzentren für die Innenentwicklung</i>)	Enhance economic and cultural functions of cities and city centers which guarantees better quality of life and work	€312 million
Urban Regeneration and Development Measures (<i>Städtebauliche Sanierungs- und Entwicklungsmaßnahmen</i>)	Repair old buildings and their surroundings; regenerate urban areas and neighborhood centers	East: €13 million West: €13 million

Source: Bartholomae and Nam (2014a).

Table 2. Classification of urban reconstruction programs for shrinking cities in Brandenburg (East Germany) according to different tiers of government: Cottbus as an example

	EU	German federal government	State Brandenburg	Municipalities in Brandenburg
Program title or name	Cohesion Funds ‘Cohesion Regions’ (2007-2013)	Urban Reconstruction as an Adaption to Demographic and Structural Change (<i>Stadtumbau für die Anpassung an den demographischen und strukturellen Wandel – Stadtumbau Ost</i>)	Future in Urban Districts (<i>Zukunft im Stadtteil – ZIS</i>), 2000-2006	Network for Each Other and Together (<i>Netzwerk Füreinander-Miteinander</i>)
Objectives	Economic and social cohesion: rectifying structural imbalances in less-developed EU regions	Improve quality of life and work in East and West German cities and municipalities of which measures consist of revitalization of inner-city areas and preservation of old buildings, as well as removal of vacant houses for other purposes, etc. in shrinking cities	Preventing further decline and degradation of ‘problem districts’ in cities in Brandenburg	Improved networking among actors in the city district
Eligible regions and areas	Inter alia: all of East Germany	East Germany	16 urban district in Brandenburg	Sachsendorf-Madlow district in Cottbus
Strategic approach	Structural and regional development	Integrated urban development	City district management, encouraging participation of local population and interest groups	Networking, facilitating communication and cooperation among different actors

Source: Bartholomae und Nam (2014a).

In sum, such urban regeneration strategies aimed at population-downsizing prevention in East German cities like Halle, Cottbus and Schwerin appear to have been less effective to overcome the serious shrinkage – a fact that puzzled these cities about the ways how to achieve urban recovery at all. In this context it should also be borne in mind that these cities with an industrial tradition have also been playing an important role as central places: for example, Halle is presently not only the fifth largest city in the eastern part of Germany but also the largest city in Saxony-Anhalt, whereas Schwerin is the state capital of Mecklenburg-Western Pomerania. Therefore, it is not desirable at all that these cities further shrink and eventually experience the so-called urban death (Eisinger, 2014).

3 Weimar's Recent Emergence as a Consumer City

3.1. Major Urban Development Strategies

Even though Weimar is only the fourth biggest city in Thuringia measured in terms of population size,⁴ it is the state's cultural center. Due to its connection with the famous writers Schiller, Goethe and Herder ('Weimar classicism'), and with composers Liszt, Bach and Hummel as well as the Bauhaus movement, Weimar benefits from a rich cultural heritage and has gained international recognition by being awarded the title 'Cultural Capital of Europe'. Furthermore, some places related to the Weimar classicism and the Bauhaus movement have been designated as UNESCO World Heritage, emphasizing once more Weimar's importance among Germany's cultural centers. The strong link among historical, cultural, artistic and architectural development has played a major role in Weimar's urban policy since the beginning of the 1990s. The city defines itself as 'a place of symbols, memories and learning', which leads the so-called 'soft' location factors to emerge as the main concern in urban planning. In order to enhance the city's popularity as a residence city and to attract both, inhabitants and tourists, culture has consequently become an important factor in Weimar's urban renewal strategy. Shortly after Germany's reunification in 1990, Weimar has been included in the urban promotion program of the federal government (see also tables 1 and 2). The first urban development plan from 1994 determined eight areas (e.g. old town, Gauforum, Leibnizallee, etc.) of the city to be prioritized, aiming especially at the rejuvenation of the architectural and cultural heritage, the better integration of buildings in the cityscape, the better accessibility of large housing estates, the development of recreational and natural areas and the deconstruction/renaturation of unused areas. Between 1990 and 2010 more than €211 million were spent for the restoration of the city center and Weimar managed to improve the attractiveness of the city center as a residential location, achieving a population increase of 13% between 2001 and 2009 (Stadtverwaltung Weimar, 2011). In order to influence the negative population development outside the city center some districts of Weimar such as Weimar West and Schöndorf-Waldstadt have also been included in the program 'Social City', aiming at the improvement of living conditions and infrastructure, which led to a stable number of inhabitants since 2007 (Stadtverwaltung Weimar, 2011). Furthermore, a renaturation of areas which did not fit to the desired cityscape has been continuously pursued. Table 3 summarizes some important urban policy activities of Weimar over the years since 1990.

Repeatedly, the primary aim of Weimar's urban planning activities has been the conservation of culture and nature which, in turn, practically allowed the location of 'non-disruptive' industrial activities.⁵ As a consequence, the urban structural change has recently been strongly affected by the city's efforts in the cultural and artistic fields that, in turn, have led to an emergence of a service-oriented economy, mainly encompassing education, public sector, tourism, craftsmanship (especially SMEs) and retail activities – the fact which clearly corresponds to

⁴ In year 2015, Erfurt (210,118 inhabitants), Jena (109,527 inhabitants), and Gera (96,011 inhabitants) are larger than Weimar (64,131 inhabitants) – see Statistics Office of Thuringia.

⁵ In the former GDR era, Weimar had had a large watch industry with around 2,000 employees which had to be closed down after the reunification. At present, two medium-sized industrial firms are located in Weimar: one is active in the field of pharmaceutical products, while the other concentrates on the construction machinery production.

the consumer city's major characteristics and functions (see also below). Nevertheless, the city has also been well aware of the fact that future urban growth will be significantly shaped by the ample presence of modern industries, while the establishment of producer services within the city should be continuously promoted (Stadt Weimar, 2002). In this context, Weimar has intended to facilitate the formation of a creative urban environment for artists, young entrepreneurs, scientists and freelance professionals, while managing to attract many startup activities, reaching a top position amongst Thuringian cities (Roland Berger Strategy Consultants, 2011).

Table 3. Selected urban development programs in Weimar

Year	Program	Promotion purpose and/or areas
1990	Model City	City rejuvenation
1993	Weimar – Cultural Capital of Europe	Improvement of reputation
1999		
1996, 1998	UNESCO World Heritage (Bauhaus and classic Weimar)	Preservation of heritage
2000, 2007	Social City	Urban development
2004	Impulse-Region Erfurt-Weimar-Jena	Culture and tourism, economy, infrastructure
2004, 2009	Our City Flourishes (<i>Unsere Stadt blüht auf</i>)	Sustainable landscaping
2005, 2009	Schiller year	Culture and tourism
2007	LEADER Weimarer Land	Development of rural areas in the region
2011	Weimar 2030	Urban development
2014	Regional Development Program Thuringia 2025	Regional development
2016	LEADER Regional Development Strategy 2014-2020	Economy and tourism

Source: Authors' compilation based on various city documents.

Weimar has also had success in attracting public agencies as Thuringian Administration Office, the Thuringian Administrative Court and the Thuringian Association of Statutory Health Insurance Physicians (Stadtverwaltung Weimar, 2011). Furthermore, the two universities, the Bauhaus University and the Franz Liszt University of Music, were able to expand and to take over locations in the city center and to become the biggest employers in Weimar – the fact which enabled it to emerge as a 'university city'. The Bauhaus university carries out some intensive R&D activities in the fields of IT technology and media (Thüringer Ministerium für Wirtschaft, Wissenschaft und Digitale Gesellschaft, 2002).

Intensive efforts have also been made to market the city as a tourist destination and to constantly improve and expand the portfolio of touristic offers. Even though the tourism industry is annually generating gross value added amounting to about €80 million (GMA – Gesellschaft für Markt- und Absatzforschung, 2011), some intensive tourism policy efforts appear to be necessary to increase not only the number of tourists in the low season but also their stay

duration in general. An appropriate strategy to achieve this goal would be the enhancement of the city's reputation as an international conference location and a large congress center (see also Landesentwicklungsgesellschaft Thüringen mbH, 2005).

Due to restricted (but nevertheless underused) industrial sites, various inter-municipal cooperations have been pursued in order to compensate the missing spaces and, at the same time, to avoid the disruption of the cityscape. The cooperation between the city of Weimar and the neighboring Weimar County was intended to facilitate common economic development strategies by combining Weimar's infrastructural and educational strength with the County's potential for industrial development and tourism (Landesentwicklungsgesellschaft Thüringen mbH, 2005).⁶ In 2004 Weimar also joined a cooperation project with Erfurt and Jena ('Impulse-Region Erfurt-Weimar-Jena') in order to generate agglomeration benefits, to create synergy effects and to save resources via common planning activities and other types of administrative cooperation (Stadtverwaltung Weimar, 2005). Although the initial concern of this cooperation seems to be the coordination of cultural and tourism activities as well as common regional marketing – in particular from the Weimar's point of view, other cooperation areas such as transportation infrastructure, economic development and urban spatial planning have recently emerged as the additional big issues in the context of the global and European competition for location quality (see also Fachhochschule Erfurt, 2007). Foremost intensive cooperation efforts have been made to establish a technology triangle region Erfurt-Jena-Weimar – an agglomeration enclave which creates positive externalities contributing to the region's scientific development, research and innovation activities as well as commercialization of high-tech products (see Landesentwicklungsgesellschaft Thüringen mbH, 2005).

3.2. Some demographic and economic facts on Weimar's Development

3.2.1. Weimar – A population magnet

In eastern Germany, Weimar is commonly characterized as a city of 'population magnet' (see also Bartholomae *et al.* (2016)). A 'population magnet' is characterized by decreasing real GDP and increasing population, *i.e.* more people (and hence potential production factors) produce less. This seems rather unusual as expectation would suggest either that an economically growing city attracts a larger population and a shrinking city repels people, or that a demographically growing city which provides more potential production factors boosts economic development rather than reduces it. However, as figure 1 shows, Weimar experienced this contradiction for some time. The dashed lines in this figure show the polynomial trend line of degree 2 for real GDP as well as population. As can be seen, in the period from 1995 to 2007, real GDP decreased, while population increased. Thereafter population gradually decreased, whereas the real GDP increased, which in turn shows typical characteristics of lean and smartly growing cities.

⁶ The Weimar County (40,367 inhabitants in 2015 in the area of 804 km²) still has traditional economic and industrial structures with a strong concentration on agriculture, food, textile, ceramics and basic metal production (see also Landesentwicklungsgesellschaft Thüringen mbH, 2005).

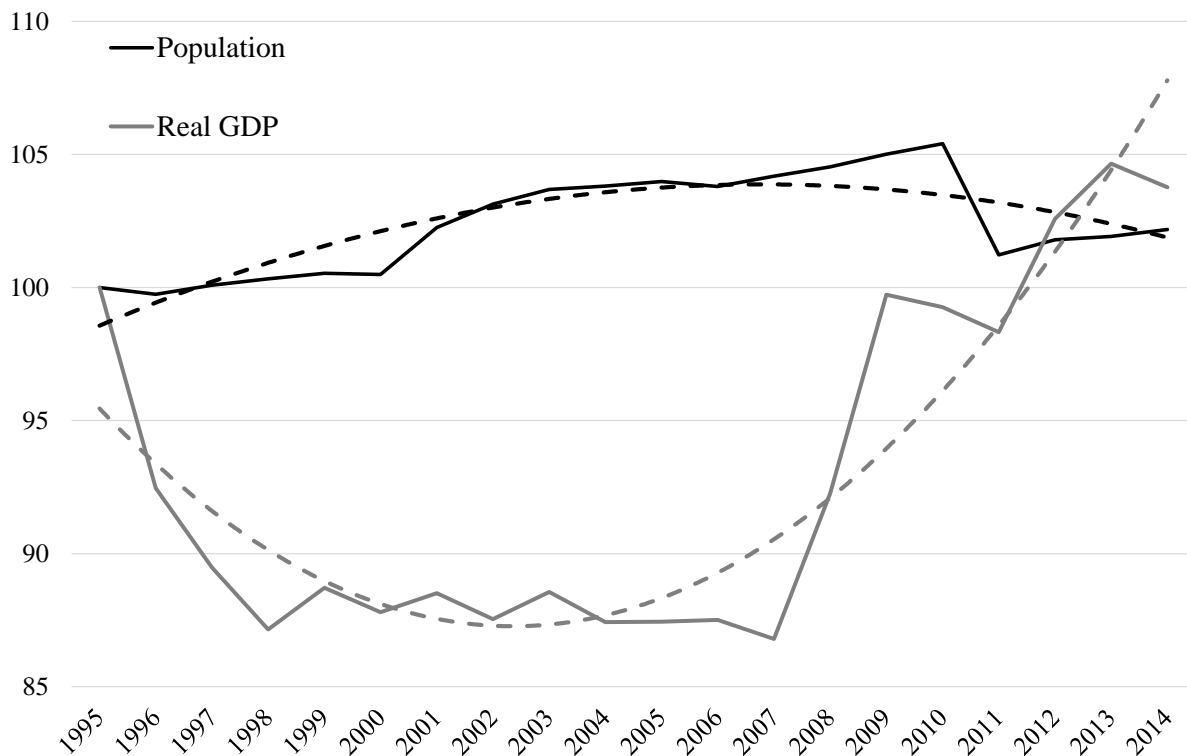


Figure 1. Development of real GDP (prices of 2010) and population of Weimar

Source: Statistics Office of the Länder and Statistics Office of Thuringia.

In the period 2011 to 2015, Weimar's population increased by ca. 2% (from 62,886 to 64,131 inhabitants). This development outperforms Thuringia's overall population change, which decreased in that period by 0.5%, and it closely matches Germany's population growth of 2.3%. Although Weimar is – expressed in terms of population – the fourth biggest city of Thuringia, it ranks third with respect to population growth rate (behind the state capital Erfurt and Jena).⁷ However, a closer look at the age structure of Weimar's citizens reveals a less promising trend – namely that the population growth was mostly driven by age groups which are not engaged in production activities: while the age cohort 0 to 19 (from 10,157 to 11,463 inhabitants) and the age cohort 65+ increased (from 13,508 to 14,142 inhabitants), the productive age cohort 20 to 64 decreased in the same period of time (from 39,221 to 38,526 inhabitants). This fact is also well reflected in the change of dependency ratios: the aged dependency ratio, defined as the share of people aged 65 and older to people aged 20 to 64, increased from 2011 to 2015 from 34.4% to 36.7%, whereas the young dependency ratio, defined as the share of people younger than 20 to people aged 20 to 64, increased from 25.9% to 29.8%. Despite the larger increase in young dependency ratio, average age increased slightly from 43.6% to 44.0%, revealing an aging process of Weimar's society.

⁷ From 2011 to 2015, Erfurt's population increased from 201,952 to 210,118 inhabitants or 4%, while Jena experienced a population increase of ca. 3% (from 106,428 to 109,527 inhabitants).



Figure 2. Age structure of Erfurt, Jena, and Weimar in 2015

Source: Own calculations based on data from Statistics Office of the Länder.

Figure 2 compares the age structure in 2015 of Jena (modern industrial city in Thuringia), Erfurt (Thuringia's state capital and administration center), and Weimar. Erfurt's and Weimar's age structure is quite similar, while Jena has a higher share of productive younger people: almost 38% of Jena's population is in the age cohort 18 to 40 but the corresponding figures for Weimar and Erfurt amount to only about 30%. In contrast, people aged 50 years and older account for 43% of population in both Weimar and Erfurt, whereas they represent only ca. 38% of Jena's total population.

As table 4 demonstrates, Weimar's overall population for 2035 is forecasted to decrease by 4.8%, when compared to that of 2015 (*i.e.* from 64,131 in 2015 to 61,076 inhabitants in 2035). At the same time, population will get even older on average in this city. Looking at the dependency ratios of Weimar the trend continues as well: the young dependency ratio will increase further to ca. 35% in 2035; and the aged dependency ratio will drastically increase to ca. 53%. The situation for Erfurt and Jena seems to become more favorable in 2035: compared to Weimar: firstly both cities will experience at least a minor population growth compared to 2015 — 0.5% and 0.2%, respectively; and secondly they will have a higher share of people aged between 20 and 64 years and a lower share of old people. Thus, both cities are likely to remain more productive in the future, compared to Weimar's prospects.

Table 4. Predicted population size and its age distribution in 2035

Age cohort	Weimar		Erfurt		Jena	
	No. of inhabitants	Share	No. of inhabitants	Share	No. of inhabitants	Share
0 to 19 years	11,300	18.5%	43,950	19.5%	21,490	19.2%
20 to 64 years	32,460	53.1%	124,996	55.4%	65,624	58.6%
65+ years	17,316	28.4%	56,806	25.2%	24,866	22.2%
Total	61,076		225,752		111,980	

Source: Own calculation based on Statistics Office of Thuringia.

One of the most important reasons for the aforementioned demographic trends and the changes in age structure is migration as table 5 shows. Young people aged between 25 and 30 years leave Weimar, while very young and old people move into the city. This indirectly indicates that Weimar is an attractive place for families and retired people but less appropriate for dynamic and innovative working age groups. Especially, the immigration of 18-25 year old people is mainly driven by the local universities, the Bauhaus University which is specialized in arts and technical fields and the Franz Liszt University of Music – confirming Weimar’s role as a ‘university city’.⁸ Yet this migration has only a temporal character, as the students are very likely to leave the city after graduating. The net-migration figures also confirm this demographic development from 2011 to 2015: while the total net migration of people younger than 25 years amounted to 2,247 and that of people older than 65 years reached 388, there was a negative net migration of people in age cohort 25 to 65 amounting to -1,073, the number which includes also those graduates of the local universities who move to other cities with more attractive local labor market.

Table 5. Net in-migration flows of Weimar, 2000 to 2005

Net in-migration	2000	2005	2010	2015	Total 2011-'15
younger than 18 years	-13	-38	-3	172	5
18 to 25 years	169	389	374	510	2,242
25 to 30 years	-46	-181	-58	-75	-756
30 to 50 years	-122	-108	-89	96	-547
50 to 65 years	33	41	41	71	230
65 years and older	63	72	26	96	388

Source: Statistics Office of Thuringia and own calculations.

⁸ On average, around 4,000 students attend the Bauhaus University, while the corresponding number reaches approximately 800 for the Franz Liszt University of Music.

3.2.2 Economic Development

As pointed out in figure 1, Weimar’s real GDP firstly decreased since 1995 but then started to recover from 2009. Figure 3 considers the development of real GDP after the German reunification in 1991 and compares it to the development of selected Thuringian cities – Erfurt, Jena, Gera and Suhl. The most successful city of this group is Jena, which is clearly a ‘growing city’ measured in both population change and in real GDP development (see also Bartholomae *et al.*, 2016). In the considered period 1991 to 2014, Weimar performed second best, followed by Erfurt. Gera showed almost no significant real growth, while Suhl’s economy decreased – in that period Suhl’s population also decreased by more than 30% showing the characteristics of a typical ‘shrinking city’.

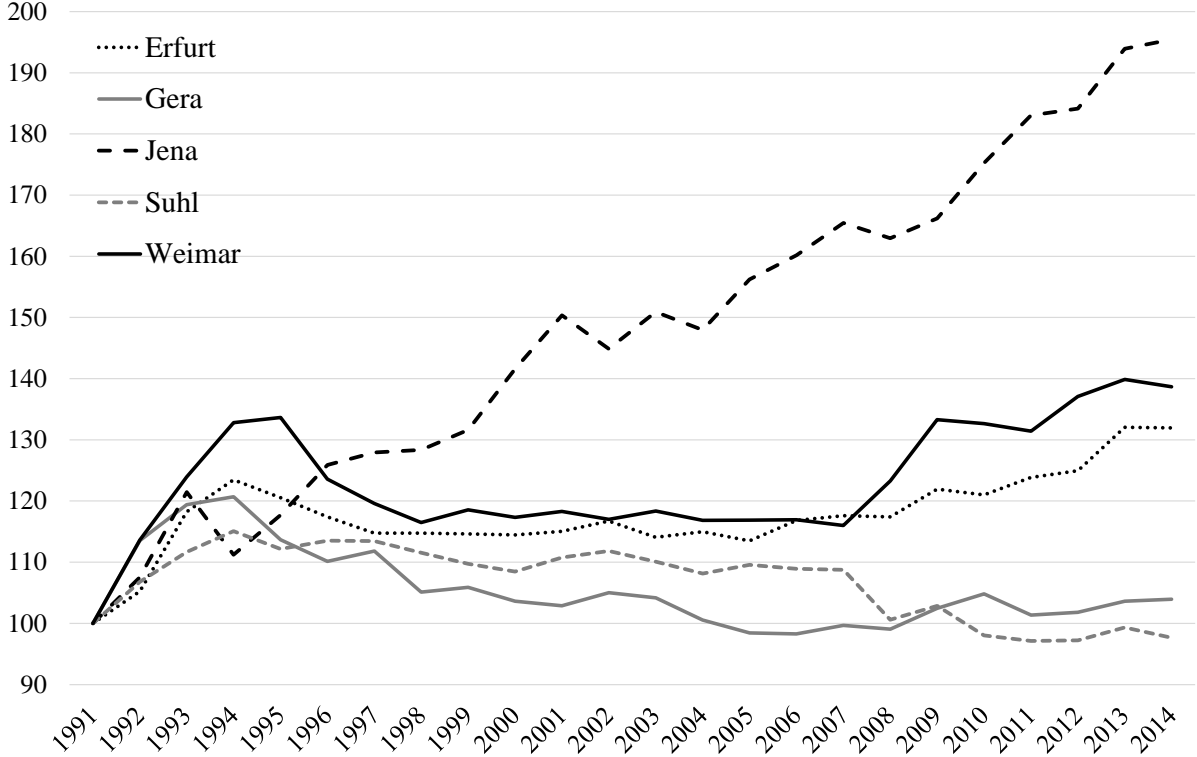


Figure 3. Development of real GDP (prices of 2010) of selected Thuringian cities

Source: Own calculations based on data from Statistics Office of Thuringia

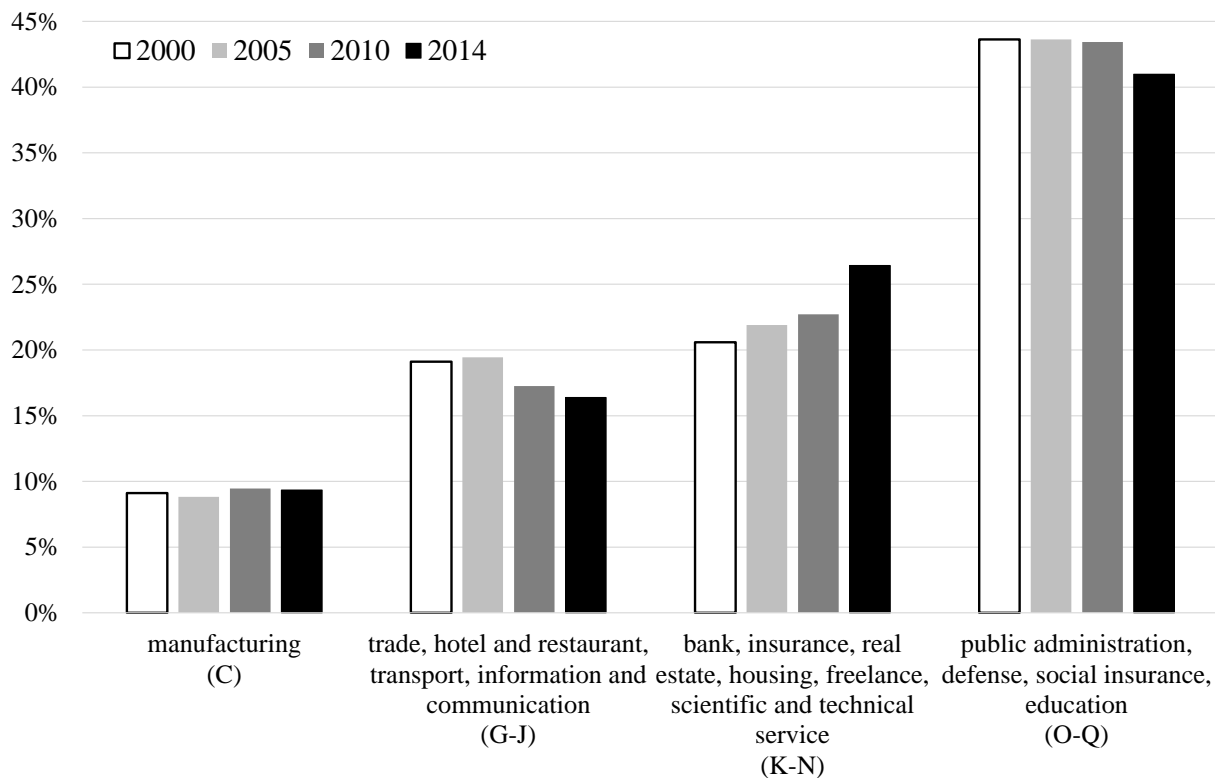


Figure 4. Development of economic structure (share of real GVA, prices of 2010)

Source: Own calculations based on data from Statistics Office of Thuringia

Figure 4 reveals the development of different sectors' contribution to real GVA in Weimar. While manufacturing (C) remains quite constant, a decrease in hotels and restaurants and information and communication (G-J) as well as in public administration (O-Q) prevails. In particular, the recent decline of GVA share of hospitality services (e.g. hotels and restaurants) raises some doubts whether a steady success of Weimar as a 'consumer city' will be further guaranteed in the future. On the other hand, GVA generated by modern business services such as banking, insurance and real estate freelance, scientific and technical services (K-N) have gradually increased – this is the only economic sector in Weimar showing a significant growth in terms of GVA and therefore with a promising potential for future development. In the investigated years between 2008 and 2014 Weimar's average GVA per employee was highest in this modern service sector (see also table 6).

Repeatedly, Weimar, Jena and Erfurt have not only diverging dynamics of economic developments but also different specializations. Measured in terms of the share of employees subject to social insurance contribution, figure 5 compares employment structure of Weimar in 2016 with that of Jena and Erfurt. Again Weimar as a consumer city represents the highest share of those employees in entertainment and recreation sector (R-U), as well as in area of hospitality services. This also indicates Weimar's strength in tourism sector.⁹ With respect to

⁹ In 2016, the overnight stays reached 715,437 in Weimar – since 2001 this indicator has steadily increased annually by 4.2% on average. In the same period of time, Erfurt experienced an average increase of 4.7% per year and Jena only by 0.8%. Considering overnight stays per inhabitant, Weimar's figure for 2015 with 10.9 is quite impressive compared to that of Erfurt (3.9) or Jena (3.0). Also average occupancy in Weimar grew from 37.7% in 2000 to 46.2% in 2015 (during this period, overall number of beds increased from 3,621 to

the ‘information and communication’ industry (J), Weimar has a share of 2.1% – the lowest share compared to 3.7% and 5.5% for Jena and Erfurt, respectively. In contrast, the rapidly growing city Jena has the highest employment share in manufacturing (C) and the highest employment share of modern business services including banking, insurance and real estate freelance, scientific and technical services (K-N) as well as IT services (J). Although Erfurt is the state capital and has also a university, Weimar employs a higher share of people in the public and education sector (O-Q). The Bauhaus University has increased its staff by more than 50% to 1,747 in the period of from 2009 to 2015: the total number of employees at the Bauhaus University and the Franz Liszt University of Music alone accounts for ca. 31% of employment in this sector, compared to 3% in Erfurt – the fact which once again confirms Weimar as the ‘university city’.

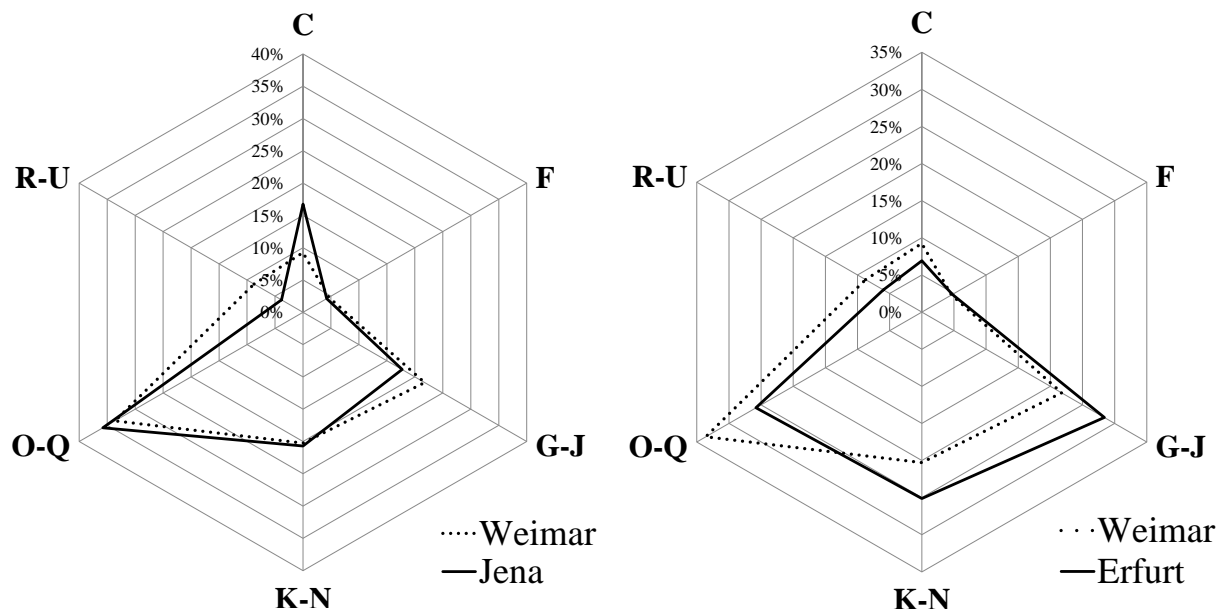
Table 6. Sectoral classification of average share of real GVA (prices of 2010) in the period of 2008 to 2014

	C	F	G-J	K-N	O-Q
Weimar					
Average real GVA	9.0%	4.6%	17.6%	23.8%	42.5%
Average real GVA per employee	€68,009	€59,798	€1,401	€80,253	€78,585
Annual change in average productivity	+0.2%	+3.0%	-0.5%	+1.1%	+1.1%
Jena					
Average real GVA	22.6%	3.6%	12.3%	24.3%	34.4%
Average real GVA per employee	€75,896	€48,896	€44,370	€77,891	€60,216
Annual change in average productivity	+0.5%	+0.6%	+0.7%	+1.3%	-0.4%
Erfurt					
Average real GVA	7.3%	5.2%	23.5%	23.7%	35.1%
Average real GVA per employee	€4,483	€8,272	€4,613	€8,325	€1,816
Annual change in average productivity	+0.0%	+1.0%	+1.1%	+0.7%	+1.2%

Note: C = manufacturing; F = construction; G-J = trade, hotel and restaurant, transport, information and communication; K-N = bank, insurance, real estate, housing, freelance, scientific and technical services; and O-Q = public administration, defense, social insurance, education; the aggregation of the economic sectors reflects data availability.

Source: Own calculations based on data from Statistics Office of the Länder and Statistics Office of Thuringia.

4,155). The majority of tourists who visit Weimar are Germans (over 85%) and their average stay-duration amounts to 1.9 days.



Note: C = manufacturing; F = construction; G-J = trade, hotel and restaurant, transport, information and communication; K-N = bank, insurance, real estate, housing, freelance, scientific and technical services; O-Q = public administration, defense, social insurance, education; and R-U = arts, entertainment, recreation, personal services, exterritorial organizations

Figure 5. Comparison of employment structures in Weimar, Jena, and Erfurt (2016)

Source: Own calculations based on data from Statistics Office of Thuringia

4. Conclusion and Policy Recommendations

There are various types of urban development in the eastern part of Germany after the reunification, of which the characteristics sometimes overlap. They include among others, for example: (a) rapidly growing ‘modern industrial cities’ equipped with producer service spin-offs (see Dresden, Jena, etc.); (2) a few successful ‘consumer cities’ like Weimar endowed with favorable amenities such as rich historical heritages, cultural attractions and comfortable residential quality; (3) the ‘shrinking cities’ which failed to achieve the timely and smooth post-industrial transformation and still suffering from the decline of GDP and the number of inhabitants at the same time (such as Suhl, Halle, Cottbus and Schwerin).

Weimar has generally been acknowledged as a ‘population magnet’ in eastern Germany, in particular for those relatively well-fortuned retirees. Between 1995 and 2007, the city experienced an increase in population size with decreasing real GDP, which in turn questions the strict conventional urban development parallelism between demographic and economic growth (see also Bartholomae *et al.*, 2016; Florida, 2013); thereafter it more strongly demonstrates the characteristics of a lean or smartly growing city with growing real GDP combined with the opposite trend of population size (see figure 1). In this context, Weimar suggests that urban recovery is also possible as a ‘consumer city’ without a large-scale presence of modern industries and business services.

Weimar has recently been enjoying an international reputation as a well-established consumer city in Germany, which at the same time carries, apart from a pleasant residential location, other sub-brandings such as a cultural and museum city, touristic attraction with strong enter-

tainment and recreation activities, and a university city. The city's employment structure clearly confirms these characteristics and specializations (see also figure 5). Behind this success there have also been wise political decisions and strategy implementations related to the city's recovery. Exploiting its comparative advantages resulted from the long historical paths with ample cultural heritage (particularly related to the Weimar classicism and the Bauhaus movement), the city has ideally combined its specific, targeted cultural development plan (see table 3) and the Germany-wide urban regeneration and modernization programs since the beginning of the 1990s (see table 1 and 2) which has created remarkable synergy effects for the city's resurgence as a consumer city.

Weimar's economic success should be more boosted and also must remain sustainable in the long run. Apart from safeguarding the city's current strength as a consumer city equipped with some new service activities as an international congress center, a better balanced and more diversified urban economic structure appear to be necessary in order to achieve this goal and also make the city's economy more immune against the crisis and the sudden down-turn. In particular, implementation of some additional 'production-oriented' urban development strategies should be more seriously considered in Weimar to improve innovation, creativity and productivity, which can ideally be realized from the concentration and intact connectivity of high-tech industries and modern business-oriented services (including engineering, consulting and information technology services) within the city area. There are several reasons for recommending such an optimal mixture of production- and consumption-oriented urban development strategies. A comparison of Weimar's real GDP development with that of Jena – a rapidly growing, modern industrial city in Thuringia – shows the continuously widening economic disparities between these two cities (see figure 3), which, in turn, emphasizes the fact that a stronger concentration on modern industrial sector and producer services appears to significantly matter for urban recovery and long-term growth (see figure 5 and also Bartholomae *et al.*, 2016). Furthermore, Weimar has also long been attempting to stimulate its economic growth in terms of attracting high-tech industries and supporting the start-ups of business services in the city (Stadt Weimar, 2002). Yet this effort has remained less successful in Weimar, as a relatively low employment share currently prevails for both manufacturing and business services including banking, insurance, real estate, freelance and scientific, technical as well as the IT services (see the comparison with Jena and Erfurt in figure 5). In this context the cooperation project for creating a technology triangle region Erfurt-Jena-Weimar has been increasingly gaining importance for developing and coordinating the region-specific R&D and innovation activities among these three cities, from which Weimar also hopes some extra agglomeration spill-overs.

Agglomeration increases earnings (and also consumption expenditures) of R&D-, innovation- and creativity-based occupations such as artists, engineers, financial executives and IT experts in the cities, whereas the high urban amenities significantly attract young and dynamic, creative people with strong entrepreneurship into the cities. As already indicated above in terms of the city's relative weak producer and other modern business service sector, such a desired 'creative and productive' population structure has recently been lacking in Weimar. The city's recent expansion in number of inhabitants was mainly triggered by the increases in those age groups which are not engaged in production activities, namely by the age cohort 0 to 19 and the retirees over 65. Despite the growing young-dependency ratio prevailed in recent years, a

more rapid ageing process is anticipated in Weimar, since the city's productive age cohort 20 to 64 will continue to shrink even faster (see table 4). In this context, it should be noted that the on-going emigration trend of dynamic and well-qualified workforces between 25 and 30 years has also largely been caused by the difficulties in finding a suitable job in the city. All these less-promising demographic developments can also eventually create some adverse effects on the city's fiscal base in the future, which are led by increased public expenditures for local health care infrastructure and systems combined with reduced tax income.

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