Historical trajectories of currently shrinking Portuguese cities: A typology of urban shrinkage

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Abstract

Cities develop according to different patterns, undergoing population growth during some periods and decline (shrinkage) during others. Theories attempting to understand these behaviours include: 1) shrinkage is a natural process in the life cycle of a city, alternating with periods of growth, or 2) shrinkage is an extreme event that places cities into a continuous decline process with no return to population growth. We use retrospective data over a period of 130 years to study 25 Portuguese cities currently facing population decline, and show that both theories coexist in time and space. Five types of shrinking city are revealed: “Persistent Early Shrinkage” due to exodus from the rural periphery, “Metropolitan Shrinkage” due to the challenges of urban sprawl, “Recent Shrinkage” in de-industrialisation hotspots, “Cyclic Shrinkage” occurring in political transformation cores, and “Mild Shrinkage” due to life-style disamenity. As diversity of city population trajectories appears to be the norm in both Portugal and other Western European countries, the incorporation of this range into the management of urban transitions is recommended in order to reinforce city resilience.

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1. Introduction

Population decline in cities has been reported throughout history (Beauregard, 2009; Oswalt & Rieniets, 2006). Urban development has complex stages of growth, stagnation, and decline. The dynamics of growth and shrinkage are well described in the urban life-cycle theory (van den Berg, Kaassen, Rossi, & Vijverberg, 1982), in which periods of population boom alternating with population decline are interpreted as a natural cycle; however, more recent observations have questioned this view (Champion, 2001; Metzger, 2000). The emergence of the concept of shrinkage and the hypothesis of a continuous (no-return) process of decline associated with drivers such as economic transformations, demographic changes, suburbanization, and political and environmental transformations have brought about a new way of looking at the phenomenon of urban population loss.

The two theoretical branches of urban development, namely, urban life cycle and continuous decline, are often regarded separately, with most of the relevant literature supporting one or the other (e.g. Friedrichs, 1993; Mykhnenko & Turok, 2008). The urban life cycle can be explained with resilience theory (Holling, 1973) and the product-/life-cycle model (Levitt, 1965), where long-established cities eventually become less popular, although resilience allows some of them to self-organize in response to sudden changes, which have become more unpredictable under globalization. Continuous decline can be understood in terms of the post-Keynesian regional growth theory, which supports the argument that disparities between territories in per capita income are permanent and self-perpetuating and can be reinforced by certain events as explained by cumulative causation mechanisms (Alexiadis, 2013). Nevertheless, a combination of the two approaches (life cycle and continuous decline) might prove productive for explaining population migration flows, given the flexibility that would be introduced into the analysis (Haase, Bernt, Grohmann, Mykhnenko, & Rink, 2013; Haase, Rink, Grossmann, Bernt, & Mykhnenko, 2014).

In the present work, we empirically demonstrate that cities develop according to different patterns of transition between growth and decline. The study tracks population figures during 130 years in 25 shrinking Portuguese cities. Here, as in Beauregard (2009) and Turok and Mykhnenko (2007), depopulation is viewed as an indicator of urban decline. This paper presents a historical perspective of shrinkage by examining demographic, economic, political, and social drivers of the phenomenon. The identification of different patterns of urban evolution adds insights to the phenomenon of shrinkage in Portugal, as well as to the overall discussion regarding urban theories used to explain population decline.
2. Literature review

The way in which cities evolve, showing periods of population increase followed by periods of inhabitant decline, has received attention from scholars since the early works of urban planners Rust (1975); Berry (1977), and van den Berg et al. (1982). This cyclic process has been given different designations, including decline, decay, abandonment, deurbanization, urban crisis, and demographic change (Haase et al., 2014). However, only after the 1980s did the term ‘shrinkage’ begin to appear in the literature, most probably because this type of transformation had by that stage reached more countries and cities (Oswalt & Rieniets, 2006; Turok & Mykhnenko, 2007). Beauregard (2009) referred to shrinking cities as pertaining only to those U.S. cities that had lost population since the 1980s, with cities that had undergone reductions in inhabitants during the periods 1820–1920 and 1950–1980 being defined as aberrant and declining cities, respectively. In Europe, urban decline has been reported in the Anglo-Saxon literature since the end of WWII and urban shrinkage has been introduced more recently (since the late 1980s) by German scholars (Hoekveld, 2014).

An initial examination of urban population evolution leads to the conclusion that episodes of growth and decline have been part of the life cycle of the city. According to this view, European urban transformation in the past two centuries followed such a pattern, showing a sequence of urbanization, suburbanization, and deurbanization (van den Berg et al., 1982; Buzar et al., 2007). Facing city shrinkage, local governments developed and implemented policies aimed at attracting back the people who had previously left cities for the suburbs or other towns. Nevertheless, some other studies have reported population decline as a continuous process rather than a cyclical one (Metzger, 2000). Champion (2001) argued that the development of Western Europe since the 1970s had created a variety of life-course trajectories of urban development.

Life-cycle and continuous-decline theories are usually approached separately, meaning that empirical observations have led to supporting one or the other. The fact that the theories evolved in different periods and within their own disciplinary perspectives probably explains this. However, as pointed out by Haase et al. (2013), the two views can coexist. In fact, a bridge between the two approaches would add flexibility and an integrative analysis of population decline, because historical trajectories portray plural shrinkage realities rather than invariant processes (Haase et al., 2014).

Studies of how the populations of cities evolve cover a range of durations, with shrinkage being observed over both long and short periods of time. Beauregard (2009) studied the large cities of the U.S. over two periods, 1820–1920 and 1950–2000, and found that cities lost inhabitants over both long and short time frames. Mykhnenko and Turok (2008) examined city evolution between 1960 and 2005 for Eastern European countries, and found a medium-term decline (during the last 15 years) as the predominant trajectory, followed by a recent decline (during the last 5 years). Turok and Mykhnenko (2007) analysed a set of European countries for the same time span, and found that the shrinkage of cities in Western Europe is less prevalent than that in Eastern Europe. However, those authors identified population decline in 22% of the Western European sample cities and 13% of these registered long-term decline (lasting 25 years).

The phenomenon of shrinkage has been studied using various sets of countries (e.g. Rieniets, 2005, for Western European countries; Mykhnenko & Turok, 2008, for Eastern European cities; Turok & Mykhnenko, 2007, for both Western and Eastern European cities; Großmann, Haase, Rink, & Steinführer, 2008, for several Poland and Czech Republic cities; and Beauregard, 2009, for the United States). Besides searching for the pattern of urban shrinkage, those studies also investigated the underlying causes and suggested diversified typologies, proposing a continuing and intense debate about how to best understand the phenomenon (Haase et al., 2013; Hoekveld, 2014).

The main types of shrinkage identified in Western Europe are those relating to deindustrialization, suburbanization, comparative disadvantages due to globalization, political and environmental transformations, and demographic changes (Haase et al., 2014; Oswalt & Rieniets, 2006). Wu, Zhang, Chu, and Chu (2013) rearranged the typologies around three concepts: “shrinkage is imposed”, which includes political, economic, and environmental crises; “shrinkage due to comparative disadvantages”, which relates to differences between places in economic opportunities, lifestyles, and/or climatic conditions; and “shrinkage due to societal/global changes”, which includes fertility decline, ageing, resource depletion, and climate change. In many cases, there are over-lapping reasons for the loss of population (Cortese, Haase, Grossman, & Ticha, 2014; Couch, Karefa, Nuissl, & Rink, 2005).

Dururing the 1950s, industrialisation caused a flow of population from urban hinterlands into city centres in northern Europe (Cheshire, 1995). The decline in population after deindustrialisation in Europe was a process that first affected the northern countries, after the 1970s, and subsequently reaching countries in southern Europe.

Changes in the economic profiles of cities promoted new preferences of city residents who, supported by the availability and accessibility of transportation options, moved out of city cores, leading to urban sprawl and suburbanization (Clark, 1989; Couch et al., 2005). In Europe, these processes impacted first the northern countries (in the 1950s) as a result of the greater wealth of the inhabitants of these countries, and then gradually spread into southern countries (Cheshire, 1970).

Globalization has affected cities and countries unevenly (Martinez-Fernandez, Audirac, Fol, & Cunningham-Sabot, 2012; Oswalt, 2015), with smaller cities and those not included in international networks being the most affected (Cunningham-Sabot & Fol, 2007; Elzerman & Bonjte, 2015). The neoliberal economic trend that emerged from the post-Fordist period has challenged the capacity of former industrialized cities to retain inhabitants. Globalization has also brought a new role to suburbs, with some of them emerging as new development poles, at the expense of increasingly empty city centres (Audirac, Cunningham-Sabot, Fol, & Moraes, 2012; Martinez-Fernandez et al., 2012). As such, deindustrialization and suburbanization have affected mainly larger cities, but more recent economic transformations have caused population loss and economic declines across a broader spectrum of cities.

Political and environmental drivers have also been used to explain population loss (Großmann et al., 2008; Oswalt & Rieniets, 2006). The fall of the Berlin Wall had a very substantial impact on the cities of the former East Germany, and epidemics as well as environmental shocks have been identified as causes of population decline (Cheshire & Magrini, 2006; Vale & Campanella, 2005). Further, demographic changes that emerged from reductions in fertility rate have also promoted a decrease in the number of inhabitants living in cities (Klingholtz, 2009).

Table 1 proposes a shrinking city typology that summarizes the international reports on city shrinkage referred to above. The main shrinkage types reflect societal and global changes and comparative advantages (Wu et al., 2013). The scalar dimension of the different causes of shrinkage, city size, and the location of shrinking cities should also be taken into consideration (Geys, Heinemann, & Kalb, 2007). Furthermore, when categorizing shrinking cities, the time span of the process should be considered. According to Turok and Mykhnenko (2007), a separation between episodic and continuous shrinkage should be taken into account to describe the historical dimension and to separate long-term trends from short-term ‘events’. The causes identified for each type of shrinkage overlap to a large extent those described by Oswalt and Rieniets (2006), aggregating causes such as low fertility rates, changes in economic profile, legal constraints due to changes in political regime, and lifestyle transformations, as well as reasons related to climate, all of which emerge from demographic, economic, political, social, and environmental drivers.
Up to the 1990s, the phenomenon of urban decline was not even mentioned in the Portuguese literature when a long-term analytical perspective was adopted, as it was considered essentially irrelevant or merely a one-time event (Nunes, 1989; Silva, 1997; Soares, 1998). It was even stated that Portugal, contrary to what was already occurring in other European cities, would “probably never” go through this phenomenon (Gaspar & Jensen-Butler, 1992, p. 461). In contrast, although without referring explicitly to the concept of urban decline, Reher (1994) claimed that some Portuguese cities would likely “follow and inclusively accentuate the stagnation and decay that was already found between 1981 and 1991” (p. 22). In a more recent study, also using a long-term perspective, Moreira, Rodrigues, and Henriques (2009) reported some cases of contemporary urban decline for the period 1993–2004 detected through “general indices of demographic, economic and social well-being” (p. 102). The closest reference to “urban decline” in studies of Portuguese cities was presented by Soares (1998) in his analysis of urban system development. By examining the evolution of population between 1981 and 1991, he hypothesised that Lisbon, Oporto, and their respective metropolitan areas may have already been undergoing “urban decline” (shrinkage), although considered that this was a “premature hypothesis, requiring further research” (p. 149). It should be noted that with the exception of the investigations of Reher (1994) and Soares (1998), the various studies of population change in Portugal have been based on municipality- or even district-level data and not on city-level data, and hence suffer from the limitations that derive from aggregating mainly rural inhabitants with urban populations.

By using as a reference the time span of shrinkage crossed with its drivers, and trying to overcome the methodological shortcomings of previous studies of the evolution of the Portuguese urban population, a historical series of census data at the level of the parish when a profound demographic or economic crisis, or a structural crisis when a new heavy industry was introduced. In Portugal, this was stated that Portugal, contrary to what was already occurring in other European cities, would “probably never” go through this phenomenon (Gaspar & Jensen-Butler, 1992, p. 461). In contrast, although without referring explicitly to the concept of urban decline, Reher (1994) claimed that some Portuguese cities would likely “follow and inclusively accentuate the stagnation and decay that was already found between 1981 and 1991” (p. 22). In a more recent study, also using a long-term perspective, Moreira, Rodrigues, and Henriques (2009) reported some cases of contemporary urban decline for the period 1993–2004 detected through “general indices of demographic, economic and social well-being” (p. 102). The closest reference to “urban decline” in studies of Portuguese cities was presented by Soares (1998) in his analysis of urban system development. By examining the evolution of population between 1981 and 1991, he hypothesised that Lisbon, Oporto, and their respective metropolitan areas may have already been undergoing “urban decline” (shrinkage), although considered that this was a “premature hypothesis, requiring further research” (p. 149). It should be noted that with the exception of the investigations of Reher (1994) and Soares (1998), the various studies of population change in Portugal have been based on municipality- or even district-level data and not on city-level data, and hence suffer from the limitations that derive from aggregating mainly rural inhabitants with urban populations.

3. Methodology

There are several proposed definitions of shrinking cities (e.g. Beer, 1993; Pallagst et al., 2009). For the present work, an adaptation of the definition proposed by the COST Action (CIRÉ) — Cities Regrowing Smaller (COST, 2012), was used. A shrinking city is defined here as an urban area with more than 3000 residents in 1991 and which underwent a population decline for at least 10 years in the period 1991–2011. These cities have undergone a cyclic decline or a recent, medium-term, or long-term decline and present symptoms of a structural crisis as a result of economic, political, or social transformations.

The life-cycle process, as described above, generates a cyclic decline in population, and contrasts with an episodic decline, which is related to a single event. The definition of recent, medium-term, and long-term decline used in the present study is similar to that of Turok and Mykhnenko (2007), but since a wider temporal range is considered here, the terms correspond, respectively, to population decline since the 1990s, the 1980s, and the 1940s/1950s/1960s. A city is considered under a “structural crisis” when a profound demographic or economic transformation occurs, leading to a shift in the city’s basis for development in order to recover.

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people; (2) a small set of about forty medium-sized cities, mostly between 20,000 and 150,000 inhabitants, corresponding to satellite cities of the two metropolitan areas and also to several district capitals, overall accounting for around 1.8 million inhabitants; and (3) about 200 small urban centres, mostly with fewer than 10,000 inhabitants, which form a denser complementary network in the centre and north of the country, containing about 1.7 million inhabitants (Ferrão & Marques, 2003, pp. 11–13).

By examining the population evolution of the 25 shrinking cities, they were categorized into five types, presented in Figs. 2 to 6, respectively. This categorization differentiated the cities according to location and to population trajectory. The trajectories show some cities as being more resilient to shrinkage than others, probably explained by a combination of factors, although identifying which particular factors were involved lies beyond the scope of the present study. After the cities had been categorized, absolute and relative population changes for the 25 cities over the period 1991–2011 were calculated, and are reported according to typology in Table 4; the locations of these cities are shown in Fig. 7, coded by city type. Table 4 indicates that all cities declined in the number of inhabitants over that period, in accordance with the definition of shrinking city described in the methodology.

The cities grouped in type 1, “Persistent Early Shrinkage: Exodus from rural periphery” (classified in Table 1 as TS2, L2, S3, T4, D4, and C4), are characterized predominantly by slow and long-duration changes, under population growth recorded between 1878 and 1950/1960 and population loss thereafter due to a movement out of agricultural activities (Fig. 2). Cities affected by persistent early shrinkage are capitals of hinterland municipalities, with the exception of Alcácer do Sal, and appear to have been unable to resist the economic and population changes that emerged after World War II. These cities are located in areas traditionally focused on the agricultural sector and were most likely affected by the “transfer of industrial jobs from the interior to the coast” (Mata, 2008, p. 178) that occurred during the first half of the twentieth century. Those cities and municipalities evolved in a path of divergence compared with the coastal cities, in accordance with the predictions of post-Keynesian regional growth theory.

The way in which the population in shrinking Portuguese cities evolved (Fig. 1) was influenced mostly by the population trajectories...
of the cities classified in type 2. “Metropolitan Shrinkage: Urban sprawl challenges” (classified in Table 1 as TS2, L1, S1, T3, D2, and C2) (Fig. 3). In fact, if Lisbon, Oporto, Almada, and Amadora are removed from the data set, the rest of the cities show a path of much slower growth, especially in the first half of the twentieth century. Three cities were affected by suburbanization from the 1980s, namely, Lisbon, Oporto, and Almada, and in the case of Amadora from the 1990s. The use of an urbanization ratio \( Q \)\(^2\) (Table 2) allows an in-depth analysis to be made of the population trajectory of all 25 shrinking cities, type-2 cities, and the remaining shrinking cities. A ratio value of > 1 implies that the city’s population is increasing more quickly than the national population. A ratio value of [0, 1] means that the national population is increasing more quickly than or equal to (= 1) that of the analysed set of cities. A ratio equal to 0 implies a constant population in the selected cities. Negative values represent population decline in the cities compared with the evolution of the Portuguese population (de Vries, 1990).

During the first 40 years (1878–1920), there was an acceleration in the process of urbanization in Metropolitan Shrinkage cities (Table 2). The process of urbanization decreased in intensity in the following period starting in 1920. After the end of WWII, cities included in this type recovered slightly; however, the out-migration that took place during the 1960s generated profound changes, including the loss of the economic and social dynamics of those cities. The decline in the number of inhabitants in Metropolitan Shrinkage cities from the 1980s, registering a greater rate of reduction up to 2001 and subsequently slowing, is the main explanation for the observed overall decline in the population of the 25 shrinking cities.

The two most important cities of Portugal, Lisbon and Oporto, showed rapid growth until the 1920s, which was later reinforced by the simultaneous growth of the Metropolitan Area of Lisbon after World War II, as reflected in the population trajectories of Amadora and Almada (Fig. 3). The continuous population growth observed until

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\( Q = \frac{(U_2 - U_1)}{(P_2 - P_1)}/(U_1/P_1) \), where \( U_2 \) and \( U_1 \) are the number of inhabitants in the last and first dates of each column range in the selected cities, respectively, and \( P_2 \) and \( P_1 \) are the number of inhabitants in Portugal in the last and first dates of each column range, respectively.

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the 1960s in both Lisbon and Oporto slowed down because of the out-
migration to Europe that affected the entire country, as well as because 
of suburbanization and the subsequent growth of peripheral cities. The 
change in population between the 1960s and the 1980s in Lisbon and
Oporto is somewhat artifi-
cial, as a stabilization or a decrease in the 
trajectory of population was observed until that time, thus postponing 
the beginning of the shrinkage process in these two cities by about 
two decades. After 1981, Lisbon and Oporto began to lose inhabitants,
as shown by the high negative values for the urbanization ratio 
(Table 2). In addition to the factors already mentioned, the impact of 
high prices of real estate and degradation of housing conditions are 
the factors that help explain the trend of population loss in more recent 
years, a feature that is common to several European metropolitan 
areas (Abrantes, Pimentel, & Tenedório, 2010, p. 72).

Cities such as Almada, Amadora, Barreiro, Espinho, Fiaes, and Vila 
Franca de Xira benefited from suburbanization as recipients of residents 
(1960–1980), allowing some of these places to be formally classified as 
“cities” after the 1960s. However, from the 1980s, Almada and Amadora 
started to experience the same phenomenon that had earlier been the 
cause of their growth, namely, suburbanization. It should be noted 
that the population peak registered in the 1970s in Almada and Amado-
ra was a result of in-migration emerging from the decolonization of 
Portugal’s overseas territories, with the political circumstances for 
such migration having been generated by the establishment of a 
democratic regime (after the Carnation Revolution, a coup in April 
1974) and by the return of some of the previous emigrants.

Although the economic and social transformations produced by the 
transfer of industrial jobs from the hinterland to coastal areas penalized 
Persistent Early Shrinkage cities (Fig. 2), this process was beneficial for 
type-2 and type-3 cities (Figs. 3 and 4). All cities included in types 2
and 3, with the exception of Seia, are located in the so-called Atlantic 
industrial corridor, which benefited from the “positive impact of the 
joint forces between railways and ports” (Mata, 2008, p. 178).

In type-3 cities, “Recent Shrinkage: De-industrialisation hotspots” 
(TS2, L1, S2, T2, D4, and C4 in Table 1), the identified shrinkage after 
1991 was a result of a lack of economic diversification, as argued by 
Friedrichs (1993). With respect to this city type, Seia is an exception 
because the city faced a slight decline between 1940 and 1960 related 
to a crisis in the textile industry (Carvalho, 2006), the city’s main 
economic driver, and has shrunk since 2001. In the cases of Barreiro,
Espinho, and Fães, rapid growth in the 1950s led to the birth of the metropolitan areas of Lisbon and Oporto and included the economic development induced by rapid industrialization, especially in Barreiro with its chemical industry. Nevertheless, it was the same rapid expansion based on a poorly diversified economy that led to the subsequent population decline. The reduction in the quality of life between 1993 and 2004 (Moreira et al., 2009) may have contributed to the recent/current shrinkage of these three cities categorized as de-industrialization hotspots. The process in Vila Nova de Santo André was even more transformative. Until the 1970s, this city was a small fishing village, which became quickly transformed by the opening of the port and industrial complex of Sines and the subsequent influx of people attracted by the new employment opportunities (Dias & Alves, 2010).

Cities of types 4 and 5 are located in contrasting geographic settings, thus requiring different policy approaches, which justify their separate analysis. Those cities present slight declines in population in the later period of the analysis (i.e. 2001–2011). The cities of type 4, “Cyclic Shrinkage: Political transformation cores” (TS1, L2, S3, T1, D3, and C1 in Table 1) (Fig. 5), are inland cities and are located predominantly in the central part of the country. These cities have population trajectories bearing some similarities to those of Persistent Early Shrinkage cities. Cyclic Shrinkage cities also present a pattern of alternating growth and shrinkage, although in the case of Persistent Early Shrinkage cities, the growth alternates with stagnation and in Cyclic Shrinkage cities there are alternations between growth and shrinkage. Moreover, in Cyclic Shrinkage cities the decline occurred only after the 1980s, whereas Persistent Early Shrinkage cities showed decline at least from the 1960s. These results are presented in Table 3, which compares the rates of population evolution in Persistent Early Shrinkage and Cyclic Shrinkage cities. The fluctuations registered in the cities with cyclic shrinkage were due mainly to out-migration influenced by the colonial war (1961–1974), the poor living conditions, and political persecution during the dictatorship, which was intensified from the 1960s with the radicalization of actions of those opposing the regime. Out-migrants moved mostly into Europe, which affected Gouveia, São Pedro do Sul, and Santa Comba Dão. During the 1960s, these movements into Europe were accompanied by the internal migration of inhabitants from cities included in the Cyclic Shrinkage category to coastal cities, mainly involving inhabitants of Alentejo (a region that includes the cities of Portalegre and Elvas), and predominantly to the metropolitan area of Lisbon; these inhabitants were exiting a region that was based on an agricultural economy to seek employment in “industrial activities” (Senra, 2011, pp. 1685–1686). During the 1970s, Cyclic Shrinkage cities recovered population as a result of the political transformation of Portugal from dictatorship to democracy, which brought about the return of those living in the former Portuguese colonies. After the 1980s, given the lack of job opportunities and the lower quality of life offered by those cities compared with coastal cities, many residents moved into coastal cities or even migrated to other countries in search of better economic and social conditions; however, with the exception of Santa Comba Dão, where city and municipality geographically coincide, the decline was almost imperceptible. In Gouveia, São Pedro do Sul, Portalegre, and Elvas, the associated municipalities experienced an accentuated population decline (−14.8% for the period 1981–2011), which has not yet reached the cities because inhabitants from rural areas of the municipalities have first moved into cities, thus delaying city shrinkage.

Table 4: Population change in shrinking Portuguese cities during the last 20 years. Source: INE (2012).

**Type of shrinking city** | **Change in population 1991–2011 (%)** | **Change in population 1991–2011 (%)** |
<table>
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<tbody>
<tr>
<td>Persistent early shrinkage:</td>
<td></td>
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</tr>
<tr>
<td>Exodus from rural periphery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sabugal</td>
<td>−300</td>
<td>−9.9</td>
</tr>
<tr>
<td>Serpa</td>
<td>−174</td>
<td>−2.7</td>
</tr>
<tr>
<td>Almada</td>
<td>−10,956</td>
<td>−10.9</td>
</tr>
<tr>
<td>Metropolitan shrinkage:</td>
<td></td>
<td></td>
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<tr>
<td>Urban sprawl challenges:</td>
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<tr>
<td>Lisbon</td>
<td>−115,661</td>
<td>−17.4</td>
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<tr>
<td>Oporto</td>
<td>−64,881</td>
<td>−21.5</td>
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<tr>
<td>Barreiro</td>
<td>−10,172</td>
<td>−21.2</td>
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<tr>
<td>Recent shrinkage:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Espinho</td>
<td>−2726</td>
<td>−9.2</td>
</tr>
<tr>
<td>Fiães</td>
<td>−851</td>
<td>−9.6</td>
</tr>
<tr>
<td>hotspots</td>
<td></td>
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</tr>
<tr>
<td>Sete</td>
<td>−123</td>
<td>−1.9</td>
</tr>
<tr>
<td>V. Nova de Sto. André</td>
<td>−104</td>
<td>−1.0</td>
</tr>
<tr>
<td>Elvas</td>
<td>−207</td>
<td>−1.2</td>
</tr>
<tr>
<td>Gouveia</td>
<td>−465</td>
<td>−11.8</td>
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<tr>
<td>Portalegre</td>
<td>−454</td>
<td>−2.8</td>
</tr>
<tr>
<td>Sta Comba Dão</td>
<td>−612</td>
<td>−5.0</td>
</tr>
<tr>
<td>S. Pedro do Sul</td>
<td>−93</td>
<td>−2.5</td>
</tr>
<tr>
<td>Peniche</td>
<td>−555</td>
<td>−3.6</td>
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<tr>
<td>Mild shrinkage: Life-style disamenity:</td>
<td></td>
<td></td>
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<tr>
<td>Peso da Régua</td>
<td>−318</td>
<td>−3.1</td>
</tr>
<tr>
<td>Tomar</td>
<td>−427</td>
<td>−2.3</td>
</tr>
<tr>
<td>Torres Novas</td>
<td>−656</td>
<td>−3.9</td>
</tr>
<tr>
<td>V. Franca de Xira</td>
<td>−290</td>
<td>−1.6</td>
</tr>
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to 2004 (Moreira et al., 2009). This may explain the stagnation that those cities have undergone in the last 30 years. Moreover, all these cities are secondary cities that have grown as satellites of other cities—Peso da Régua for Vila Real, Torres Novas for Santarém, Tomar for Leiria, Peniche for Caldas da Rainha, and Vila Franca de Xira for Lisbon—all of which have exhausted their capacity for attracting inhabitants, either because of a possible saturation in the phenomenon of suburbanization, or because new products and associated appealing jobs tend to be generated in growing environments such as metropolitan areas, in accordance with the product-life-cycle theory.

5. Conclusions

The population trajectories of Portuguese cities from 1870 to 2011 showed mostly slow growth, interrupted in some instances by periods of stagnation or even decline. Three major transformations explain the...
loss of inhabitants. The first period of population loss, during and after the 1960s, was due to economic transformations that affected inland cities (cities categorized as type ‘Persistent Early Shrinkage: Exodus from rural periphery’), specifically, the attraction of industrial jobs in coastal cities. The second period of population loss, during and after the 1980s, was associated with the emergence of suburbanization (cities categorized as type ‘Metropolitan Shrinkage: Urban sprawl challenges’). The third, during and after the 1990s, occurred as an outcome of profound transformations in industrial cities (cities categorized as type ‘Recent Shrinkage: De-industrialisation hotspots’). Cities of these three types experienced events that represented a turning point in the path of population evolution, from which the cities were unable to recover, indicating a low level of resilience. Therefore, further research should focus on identifying the characteristics that can reinforce the resilience of such cities. Such an approach implies that governments need to learn how to cope with and manage change so that ways of orienting these cities towards more desirable directions can be identified.

However, other cities have shown a more persistent pattern of growth and decline in their populations. Cyclical shrinkage is evident in cities where political transformations brought about a loss of inhabitants between the 1960s and the 1970s with recovery in the 1980s, but although such cities are currently in decline, most have not yet reached the population minima of the 1970s. Mild Shrinkage cities, resulting from life-style disamenity, presented irregular paths of population growth until the 1980s, when since have had small declines but no particularly substantial changes in the number of inhabitants.

Population records over the last 130 years for currently (19...)

References

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