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# Urban Shrinkage as a Catalyst of a Transition, Revolving around Definitions

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Abstract: For decades, urban shrinkage has remained a serious challenge, especially in post-socialist countries. Substantially, it is recognizable as a temporary population loss; this encourages the undertaking of a systematic review of the phenomenon—has there been any change in the urban shrinkage connotation in the past years? Empirical research examines the mechanisms that were disclosed in the literature during the first two decades of the 21st century. This paper outlines the core aspects of shrinkage in the economic, social, and spatial dimensions. The paper questions whether the phenomenon is a catalyst to a new development trajectory of cities, collecting a review of the terms attached to shrinkage itself. The analysis is based on a meta-analysis of the literature; it covers the papers and outputs of research projects that were focused on shrinkage from 2000 to 2020. The review leads to conceptual models based on the perpetual mechanism of the phenomenon.

Keywords: urban shrinkage; urban decline; shrinking city; urban blight

#### 1. Introduction

The aim of the research was to investigate the general rules and laws of shrinking cities re-development. It explores the phase of a fall as the transition to a more livable and compact city. The theoretical investigation was based on desk research, a revision of shrinkage definitions, which lead to the main factors of the process. The review attempted to create a shrinking city image interwoven with the definitions of the processes that attend shrinkage and transition themselves. The idea for the research stemmed from the desire to identify the core phenomena (terms) associated with shrinking cities. The paper answers the question of whether shrinking cities can grow again or, rather, develop in a new and peculiar way. In other words, it ponders whether shrinkage represents a city in transition.

Fall and growth are the primal and natural forces that follow the development of cities. Why do researchers seek for a new term for the decline, urban decay, and erosion of the city? To simplify a change, a transition: could it be called a shrinkage? A peculiar process of shrinkage is occurring during a period of stable global growth, both economic and social. For the first time in Europe since the industrial era, a depopulation process is being observed. Regarding the 21st century, it is an era of demographic changes [1], a long period where the process occurs in an unremitting period of urban development since the Great Wars. Furthermore, for the first time, the breakdown is not being caused by a rapid and external factor, such as an armed conflict or a blight [1]. It is worth admitting that the present form of shrinkage questions the permanent growth paradigm of cities. It initiates a new form of development, a non-growth-oriented development.

"Shrinking cities—a problematic term" [2] (p. 12), is defined as an ephemeral phenomenon, a depopulation process, and has been recalled in the literature as the urban decline, decay, and erosion of a city. Misleading terms are rooted in the issue of shrinkage itself, where the terms define it from various perspectives. The term describes only one of the symptoms, where shrinkage is seen as a population loss and the subsequent result [2]. Shrinkage itself is a matrix of processes overlapping, interpenetrating each other [3–5]. The main problem for defining the process is the breaking point, a trigger that causes "a vicious



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Sustainability **2022**, 14, 13203 2 of 12

circle of shrinkage". "There is no single model or archetype of the <<shrinking city>>. The features of urban shrinkage are interwoven with the social, cultural, political and economic conditions and history of a given country or region" [6] (pp. 95–96). Additional confusion is brought about by the contradiction within shrinkage regarding diminishment and decrease. On the other hand, there is a growth; there are more vacant spaces to develop, where it is not infrequently an urban sprawl of a shrinking city and growth of a metropolitan region [2,7].

The roots of the phenomenon come from the deindustrialization process [8,9], which was described at first as the urban decline of the US cities in the Rust Belt region [10,11] and the Ruhr Region in the Western Germany [12]. The globalization of trade and competitiveness of new Asian economics since the 1950s brought structural crisis in the industrial regions that were established during the 18th century, especially monofunctional ones based on coal mines and steelworks [8,13–15]. The process of deindustrialization in the cities has overlapped with suburbanization [14,16,17], boosting the perforation of the city in both the economic and housing dimensions. In that particular case, the transition represents a change of economic policy and restructuring of industry. J. Jacobs [18] emphasized that monofunctionality would lead to a fall in the future. The theory of "path dependence" tends to formulate the same insights [19], and took shrinkage into consideration [20].

All things considered, the European and American approaches have created two terms standing for shrinkage. "Schrumpfende stadt", of German origin, is based on the investigations of H. Häußermann and W. Siebel [12,21], and is known as a permanent way of shrinking city erosion (schrumpfungsprozess). On the other hand, the American term "decline" refers to a phase of a fall in city development [10,22]. Both urban decline and shrinkage mean a structural crisis of the city during an interaction of depopulation and economic downturn. In the case of "schrumpfende stadt", The difference is described by the duration of the crisis and its irreversibility [8], as H. Häußermann and W. Siebel [12] originally named a model of a city fall. Urban decline in the case of the US definition seems to be a rather pejorative process, strengthened by a variety of pathologies affecting the urban environment. The spatial dimension of urban decline extends J. Q. Wilson and G. L. Kelling's "Broken windows theory" [23] to a citywide context, spreading from separate places, neighborhoods, and districts to an entire city organism. The phenomenon of urban decline represents social and physical disorder spreading all over the city [24,25], and it turns to "urban blight" when it obeys a significant part of the city, with a visible perforation of the urban tissue. There is often an undertaking of the struggle of urban blights in the US due to the unprecedented scale of the phenomenon in the Rust Belt cities [26–28]. A physical worsening in the condition of buildings is the so-called "urban decay", which is a result of an underutilization of the properties and an increase in the presence of derelicts [29,30] (p. 4).

Understanding the origins of shrinkage leads to a quantitative definition of a shrinking city. One of the first ones was established by the Shrinking Cities International Research Network (SCIRN) as "a densely populated urban area with a minimum population of 10,000 residents that has faced population losses in large parts for more than two years and is undergoing economic transformations with some symptoms of a structural crisis" [31] (p. 432). Further research carried out by T. Stryjakiewicz [32] in a project titled "Cities Regrowing Smaller" developed the SCIRN definition by adding quantitative indicators. The depopulation period was extended to a minimum of 5 years, with more than 0.15% of population loss during each year. Apart from a quantitative delimitation, which should be placed in a regional context, the shrinking city was considered as "an urban area—a city, part of a city, an entire metropolitan area or a town—that has experienced population loss, economic downturn, employment decline and social problems as symptoms of a structural crisis" [4] (p. 214). The phenomenon occurs across the globe; however, there is "no single model or archetype of shrinking city" [33] (p. 95). In the following chapter directions of shrinkage have been investigated including the scope on cities' transition: economic, social as well as spatial dimensions.

Sustainability **2022**, 14, 13203 3 of 12

#### 2. Materials and Methods

The term "urban shrinkage" is used in the literature in various contexts and under various names. The examination of the presence of shrinkage in scientific discourse was based on the analysis of keywords and parts of papers' titles related to shrinkage used by researchers. The following mainstream topics discussed by scientists, starting with "shrinking city"; "urban shrinkage"; "urban decline"; "urban decay", and "urban blight". The proliferation of terminology is supported by a unique variation of phenomenon trajectories, effects, and local specifics. However, the shrinkage is linked to an array of processes which are reflected by the keywords.

Theoretical research is based on the triangulation of various elaborations on urban shrinkage. Desk research was leading via scientific papers, books, and other publications that were referring to the phenomenon. Outputs of research projects conveyed in the period 2000-2020, delivering national data and context of specific shrinking cities, were included in the revision. Simultaneously, blind spots uncovered, and the main phenomena associated with urban shrinkage were highlighted. The first step of literature review was based on the open access tool, Science Direct, to define urban shrinkage research range and scope. Subsequently, an in-depth revision of research projects documentation was made with Google Scholar browser, to gain its perspective on phenomenon, supplemented by city case studies. The analysis of Google Scholar provided meta-data form the following research projects: "Shrinking Cities", "The Shrinking Cities International Research Network", and "Shrink Smart".

A review of the Science Direct tool showed a sample of 1415 papers published in the period of time lasting from January 2000 to January 2020, with the keywords mentioned above. Further analysis of scientific discourse shows that most of the research on shrinkage was conducted frequently after 2005. It might be referred to the appearance of a worldwide elaboration "Atlas of shrinking cities" [34] and publications based on international research under the project "Shrinking cities" [2,35]. The latter publications were an echo of such research projects as "The Shrinking Cities International Research Network" [36], "Shrinking Smart—the Governance of shrinkage" [17], and "Cities Regrowing Smaller—Fostering Knowledge on Regeneration Strategies in Shrinking Cities across Europe" [32]. The keywords, which are directly related to shrinkage ("shrinking city" or "urban shrinkage") appeared in the discourse, mainly after 2005, gaining 96% of the published papers and scientific elaborations in the database. An investigation of Scopus revealed that keywords such as "shrinking city" and "shrinking cities" are more explored by the researchers in the US (34%), Germany (22%), and Great Britain (9%). These are three countries that gained a vast share of the tags. However, "urban shrinkage" was tagged more often in Germany (32%) than in the US (11%) and Great Britain (10%). Processes such as "urban decline", "urban decay", and "urban blight" were taken into consideration widely in the US (38% "decline", 31% "decay", and 51% "blight"), and Great Britain (18%, 12%, and 3% respectively). Such a distribution of keywords among the English-speaking world and Germany might be rooted in the formerly mentioned origins of "decline" and "shrinkage" (schrumpfungsprozess). Moreover, decline, decay, and blight were discussed pre-2005 with reference to the fall of the Rust Belt region in the US, especially in terms of spreading "urban blight".

#### 3. Shaping Transition in Shrinking Cities

What does "transition" mean in terms of shrinkage? It is a process of economic, social, and spatial reshaping of a city. S. Fol and E. Cunningham-Sabot explain the process as "the final phase of the evolution of cities or as a stage in a process of cyclical transformation" [37] (p. 674). Such approach invokes the inquiry into the limits of the shrinking city's resilience. Is the crisis permanent or rather reversible [8,33]? At first glance, shrinkage would be seen as an erosion of a city, a long-term process of decline [12]. However, the first signs of regrowth could be seen in shrunken cities [38], such as Leipzig in Germany [38,39] or Liverpool in the United Kingdom [40].

Sustainability **2022**, 14, 13203 4 of 12

The researchers are following "rightsizing" [41,42] and "downsizing" [29,41] terms, simply making the city more functional and fit for the needs of a smaller, shrunken population [28,43]. As a result, a matrix of overlapping processes is present [4], with a variation of backgrounds. For the purpose of the research, the three following aspects of shrinking cities' transition were examined: (a) economy and political system, (b) social change and depopulation, and (c) urban tissue and spatial development. It is worth admitting that the depopulation is being more explored by researchers, which is not the only dimension.

### 3.1. Economy and Political System

The economic transition in the Eastern Bloc, which appeared in the 1990s, has invoked a process of unsustainable growth. An artificial trend of permanent growth in socialist cities slammed into the real market demand in terms of a given capitalist order. The economic breakdown, called "boom of decline", "shock therapy" or "reunification boom" [44,45], refers to a combination of deindustrialization and restructuring of national economy in the period of system transformation in Eastern Europe in the years 1989 and 1991. Approximately  $\frac{3}{4}$  of the local industry in Leipzig, Federal Republic of Germany, was closed down during that period. That was the fate of one-company towns, monofunctional areas [39,44]. In particular, the cities under growth-oriented socialist urbanization of industrial order [46] shared the side effects of political changes with a phase of economic turn-down. Likewise, the process was observed in a more linear, prolonging shape, more related to the "erosion" of the economic base [47]. The US Rust Belt represents a long-term eroding process of an industrial region that began in the late 1950's [11,15]. The share of industrial production in the US, in the nominal value of GDP, fell by 11.5 percentage points in the period of 1959-1999, reaching the level of 16.1% of GDP in 1999. The vast number of jobs in the industrial production sector fell by 25% in 1947–1972 [11]. The Ruhr Region in Western Germany would be considered the most affected by the decline of its coal mining-based industry [12]. The global process of transition from fordist to post-fordist models of production has a rather gradual origin in the Western world than a rapid and sudden one in the post-socialist countries, so-called "shock therapy" [44].

The symptoms of a crisis do not have to be interpreted as a potential decline, but rather as a driving force that leads to a shift, new opportunities, and growth. A strong institutional framework would allow, in this context, for further development of the city and overcome urban problems of the city [20,22]. The issues which are less discussed in the literature are governance and city management. It is an awareness of the political class combined with management skills in tailoring and implementing an urban policy, that goes beyond the paradigm of growth. C. Le Duff [48] proposed inefficiency in governance and difficulty in adapting to new conditions as some of the reasons why Detroit's urban decline is extending. Moreover, the influence of the business class to local government seems to take advantage of the responsibility for the economic crisis and its effects. J. Friedrichs [49] claimed that such local alliances helped cities in economic decline to struggle with a crisis with the support of federal funds and subsidies. In the Soviet Bloc such connections had an official dimension, a linkage between a centrally planned economy and the main ruling party that supported inefficient industries. A prolonged process of shrinkage is unable to sustain an artificial equilibrium, and it is generating greater costs. In condition of transition to post-fordist economy, local government could be excused by the mechanism of so-called "shock therapy" [44], by the multidimensionality of urban shrinkage that appeared in the relatively stable, growth-oriented times, and requirement of quick response through adaptation to a new situation. In contrast to the US, the federal government of Germany created, in the turn of 1990s and 2000s, a framework for cities in decline. The program of city restructuring, Stadtumbau-Ost, affected cities of new eastern lands located in the former German Democratic Republic, and it has been preceded by a phase of presuppositions' pilotage [50,51]. The German experience demonstrates the way of tailoring urban policies, proposing a shift in the phenomenon perception and an innovative approach to urban policies that turns from counteracting to urban shrinkage management. According to

Sustainability **2022**, 14, 13203 5 of 12

D. Rink [5], there is a gradational process, that carves urban policy up against a new phenomenon. It starts with non-acceptance, a struggle to reverse the process, and finally attempts to adapt to a new circumstances (see Section 4).

# 3.2. Social Change and Depopulation

As a result of "the second demographic transition" [52], the cities are facing a problem with population recovery. Low fertility rate and aging of the European society are constantly accelerating depopulation. Cities have been exposed to multi-layered drivers that are related to circular theories of development, e.g., the ones by L. van den Berg's et al. [53], and P. Nijkamp's [54]. Young families are moving to the suburbs, leaving higher burden demographic rate in the central cities. Both effects, out-migration and depopulation, are increasing the permanent loss of inhabitants in cities called shrinking ones. Many parts of the world are experiencing population loss as well as sluggish economic dynamics [55]. The question which still remains unanswered is whether slow growth, much slower than the national average, could be considered as a shrinkage condition.

Europe extensive research "Cities Regrowing Smaller" [32] indicated a list of cities shrinking in the period of 1990–2010 with the population of more than 5000 citizens, and divided in 3 types. Out of 7035 European towns there were 3563 shrinking ones in total. The first category included 498 long-term shrinking cities with ongoing depopulation which would last in four of the five-year intervals between 1990 and 2010. The population loss is characterized by an overdraw exceeding at least 0.15% yearly. The second type included 917 cities that experienced temporary shrinkage during a period of stabilization or even a brief period of growth. The last type holds 2148 episodically shrinking cities characterized by at least 1 out of every 4 five-year periods with a population loss, more than 0,15% per year [31]. Only in the former German Democratic Republic (GDR) did birth rates fall sharply in a short period of time, dropping by 25% during the system transformation, reflecting the uncertainty of living conditions in the post-socialist eastern German cities [45].

#### 3.3. Urban Tissue and Spatial Development

Is there an artificial, or rather a real shrinkage [56]? The suburbanization process as a form of urbanization could be one of the shrinkage triggers, creating the doughnut effect, which causes hollowing out of the inner city [41,57]. In this case, the regional scope of shrinkage would be undertaken. The investigation should examine whether an apparent population loss in the central city is not the suburbanization effect but a real shrinkage which affects the city in its functional region [56]. Apart from the housing dimension, suburbanization also refers to the industrial development, so-called "industrial suburbanization". The process appears as a side effect of high ground rent, when development of industrial land use has more profitable alternatives, both environmental and economic one. A peculiar characteristic of the industrial suburbanization is that demographic growth follows the relocation of entrepreneurs, mainly to peri-urban areas, outside of the central city [58]. It gathers new settlers and small businesses over the new suburbanized workplace. This spatial decentralization of economic development is observed as an additional trigger for further suburbanization processes [59]. A threat to the shrinking cities is that the tax residence, corporate tax, and income tax of newcomers are gained by outer municipalities. This remarkable mechanism occurred in Detroit, and it was one of the urban decline drivers [60]. In general, an outward expansion of urbanization occurs in the context of urban decline in the central city. Further development is consuming new lands, as well as the suburbs and outer ring of the central city. S. Siedentop and S. Fina introduced the term "shrinkage sprawl", which embraces "urban sprawl beyond growth" [7] (p. 91). In the Central and Eastern European countries, "shrinkage sprawl" appeared in the period of transition, although it was a separate process that overlapped socio-economic changes. Both in the eastern Germany and the ex-eastern bloc countries in the 1990s, the rise of a mass suburbanization was observed. The liberalization of urban planning regimes aided the oversupply of low-cost building land on rural sides and encouraged greenfield investSustainability **2022**, 14, 13203 6 of 12

ments. Moreover, there was a growing competition between suburban municipalities to acquire new dwellers in period of omnipresent population loss. Apart from the bothersome decline of the central city and a diminished demand for housing due to the depopulation process, shrinkage sprawl is ongoing outside of the city [7,20,61].

Socialist city development has been oriented to economic and industrial growth as well as underdevelopment of infrastructure and housing stock [62]. The socialist model caused inequalities in urban and social development, and as a result the outflow of citizens was a natural process in the 1990s. It was an expression of a need for a quality habitat and a need for freedom of choice in the free housing market. Moreover, the inhabitants of the new monofunctional dwellings, created for the needs of industrialized socialist cities, have no roots in the city besides their workplace-oriented identity. After the downfall of the communism, the suburbs started to be seen as an alternative, quality habitat and a part of a new lifestyle. The vacancy rate increased in the blocks of flats, leaving 1 million empty flats in the former GDR [62]. In contrast to the desolation of prefabricated blocks of flats in the former GDR, known as "plattenbau," the decaying process in the United States had been supplemented with a social pathology and deterioration. Stratification of adverse processes was defined as an "urban blight" [63,64]. G. Breger [65] beholds urban blight as a tangible effect of a structural crisis of a city, functional and/or social depreciation. According to the report by Keep America Beautiful [24] on blight, the term was formerly understood as an economic problem. However, today it refers to physical space and visible effects of the city crisis, such as graffiti, prostitution, housing vacancy, and dereliction. Furthermore, there is untidiness of space and an atrophy of local communities. Blighted properties and neighborhoods are meant to be dangerous places, slums or ghettos.

A shift in the planning system is being considered as a side effect of the city's transition. Hitherto, the planning system has supported regulation of development, and anticipation of growth. The decline leaves behind the costs of city maintenance and a sprawling development. D. Popper and F. Popper [66] postulated that reorganization of space, housing, and infrastructure would be implemented as a "smart decline". The changes that appear in shrinking cities indicate a revision of the growth-oriented urban planning approach, a transition which leads to "planning for less—fewer people, fewer buildings, fewer land uses" [66] (p. 23).

### 4. Policy Responses

A policy response, if there is any, reflects an awareness of the urban shrinkage process, its perception, and finally, a political will. These are the main forces which shape, or rather manage, the process of shrinkage. G. Hospers [67] identified four types of policy responses on urban shrinkage, starting with trivializing, countering, accepting and utilizing urban shrinkage. Apart from Germany and the United States, which conveyed direct policies and programs, the analysis of urban policy discourses reveals a mainstream approach of trivializing or rather ignoring shrinkage. Marginalization or a downplay of shrinkage is common, both in the post-socialist countries and in the so-called western world. Poland, Romania, Russia, Croatia, France, and Spain are listed as examples of the trivializing policy approach [67,68]. A lack of policy response does not reflect the absence of the topic in academic debate or bottom-up initiatives, especially in post-socialist countries. In Poland and Romania, urban shrinkage as a discrete topic of research appeared at the end of the 2000s with the outputs of Europe-wide research "Shrinking Smart—the Governance of shrinkage" [17]. Former publications in these countries were oriented to a comprehensive aftermath of system transformation in 1990s, both deindustrialization and depopulation [69-71]. Urban shrinkage includes references to the urban crisis, city transformation, and functional region. In Poland, the main scope encompassed the Silesia, heavy industry, and coal mining regions [72], in Romania the case study of shrinking Timisoara [73]. The depopulation process as one of the dimensions of urban shrinkage is widely elaborated in European research projects, "Cities Regrowing Smaller—Fostering Knowledge on Regeneration Strategies in Shrinking Cities across Europe" (CIRES) [19], Sustainability **2022**, 14, 13203 7 of 12

both in Romania [74] and Poland [75]. The elaboration, which gathered theoretical background on national research on shrinkage, was "Shrinking cities in Romania" by I. Paun Constantinescu [76], and an overview of bottom-up interventions in Romanian shrinking cities [77]. This research made a walkthrough of the national context of the shrinkage, and it went beyond existing study outputs and theory [9,78–80]. Meanwhile, in Poland international research bolstered the theoretical background, it was complementing native case studies [81–83]. It is worth admitting that in the opposition to Germany [45], an academic debate in Romania and Poland has overhauled the political one. The research provided an overview of urban shrinkage, and ready-to-use solutions for policymakers.

There are several groups of instruments that support the management of urban shrinkage. Shrink-Smart project workgroup [84] and S. Döringer [85] research on European and Japanese responses to urban shrinkage imply common features. These ones include social cohesion, financial instruments supporting economic development, renovation of the city, and rehabilitation of housing resources, financial support of local governments, planning, and land management [17,85]. Further research on instruments' typologies based on P. Oswald [35], D. Rink [17], T. Stryjakiewicz [19], and I. Paun Constantinescu [77] led to the validation of the presented typologies. In general, one-direction policy responses, in the manner of revitalization no longer handle the multidimensional transition of cities. The shrinking ones seek restructuring programs, and such citywide programs can be implemented only with the support of external funds. The examination of the US cities in decline performed by K. Bradbury, A. Downs, and K. Small [10] has shown, that those cities were addicted to financial support from the federal budget, reaching 40% of the city's yearly revenues.

#### 5. Vicious Circle of Urban Shrinkage

The adaptation process for new challenges in this term stands for a city transition, a phase of seeking a new way of development. It is a period of exploring and testing new approaches or ideas, and it is a time of resilience after a short period of breakdown. Development cannot be considered as growth anymore, a surplus of a relative value, but rather as the effect of transition to a new reality, a pass from loss-making to stabilizing development. Urban blight as the last phase of transition should be faced with already prepared policy for managing a shrinkage process. "No-one fits all" [6], there is not just one pattern, course or the dynamics of transition, not just one archetype of shrinking city, nor one particular action and policy for shrinkage management. It is worth recalling S. Oosterlynck and S. Gonzalez's thought—"don't waste a crisis" [86] (p. 1079), in other words—play with the shrinkage [87].

In the post-socialist Europe, the urban shrinkage appeared suddenly and simultaneously with such processes as suburbanization, deindustrialization, and mass out-migration from many massive urbanized cities under socialism. Socio-economic processes, formerly observed in the western world, happened with a time lag in the Eastern Bloc, e.g., a delayed second demographic transition. That was a unique and obscure interplay of causes and consequences which were driving the urban shrinkage in the 1990s. Nonetheless, the main cause of the contraction was so-called "shock therapy" and a peculiar system transition from a planned economy to a market economy.

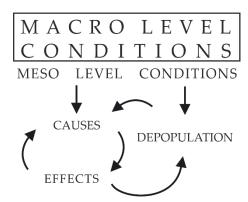
There is only an ambiguous difference between urban decline and shrinkage. The urban decline refers to a deep structural crisis rooted on the erosion of the economic base that demands a long-term restructuring. In the case of the US cities, in the Rust Belt region, it has lasted since turn of the 1950s and 1960s. There are no legible signs of development stabilization (e.g., Detroit, see [88]), but a change in the dynamics of the process could be seen. In the German shrinking cities, regrowth could be observed (e.g., in Leipzig, see [46]) as the effect of direct urban policy and restructuring programs despite the latter response, which was shaped in the late 1990s. Over 30 years' experience in theorization of urban shrinkage, since the first publications of H. Häußermann and W. Siebel in Germany and

Sustainability **2022**, 14, 13203 8 of 12

K. Bradbury, A. Downs, and K. Small in the US, disposes that the reversibility of shrinkage and decline is still enigmatic.

The analysis of shrinking cities definitions indicates that depopulation is a mandatory condition of shrinkage. It is the most visible and dangerous indicator of long-term development. The first signs of the end of the transition would be considered when the depopulation rate equals zero. Shrinkage is not synonymous with depopulation, it enhances a crisis with economic and spatial points of development. Population loss is a precondition and it is more relevant due to its side effects on municipal tax income, the presence of a labor force, and population recovering potential.

Urban shrinkage is often based on a series of overlapping vicious circles (Figure 1). A shrinking city loses more than inhabitants; all of its components are clearly breached, starting with labor market (unemployment), investments, quality of life, space, and housing (urban blight). Urban shrinkage takes place in the conditions of common and global progress, which is understood as growth. It affects cities in countries that are at various stages of development.



**Figure 1.** Urban shrinkage conceptual models, based on vicious circle mechanism. Conceptual diagram of the urban shrinkage process' impact on a city. Source: Adapted from [89] (p. 61).

It should be emphasized that the shrinkage affects both cities and their functional areas, which are marked by a multidimensional structural crisis. Those changes undermine the current development paths of cities affected by urban shrinkage, which are mainly based on continuous development, understood as growth. The cumulative nature of effects and causes is crucial, and it is resulting in a reversal circulation of development over time. Depopulation is an obligatory manifestation of changes, stimulated by processes on meso and macro levels. Although the term "urban shrinkage" refers directly to the city, it is essential to grasp the dynamics of a change in a city that is part of its functional area and a settlement network itself. The scale the phenomenon's perception will imply the direction of development drift, which takes two forms: the "real" shrinkage of the city along with the functional area, or the "apparent" of the city itself.

## 6. Conclusions

Urban development passes through peculiar cyclic waves of fall and growth. There is an interweaving of concentration and decentralization of development. Natural disasters, economic breakdowns, and political turn-downs are constantly accompanying cities. Shrinkage, a process which shapes a transition of cities in crisis, is relatively new. It appeared in the mid-20th century, within a demographic crisis in developed countries, and it is bound by economic erosion and perforation of urban tissue. It is a remarkable process leading to the decline of a city and blight, or otherwise a new way of further progress. There is a duality of shrinkage and a downfall that is showing an opportunity for a smart progress rooted in crisis.

Path dependence causes the crisis of shrinking cities and forces them to close in order to precipitate change, evoking the concept of sunk cost invested in previous development

Sustainability **2022**, 14, 13203 9 of 12

paths. A perpetual desire to sustain growth despite symptoms of a structural crisis, which is rooted in the continuous, linear growth observed since the industrial revolution. That "growth paradigm" in particular was observed to be sustained in countries of the Eastern Bloc until the fall of the Iron Curtain. Socialist urbanization maintained high growth dynamics while developed countries experienced deindustrialization and globalization since the 1950s. In the Eastern Bloc countries, those phenomena occurred suddenly during the decade of the transition, triggering a "shock therapy" or a "boom of transformation". It was a form of deconcentration, unlike the socialist overurbanization.

In particular, urban shrinkage affects industrial and monofunctional cities. It manifests in the erosion of leading paths of a city's development. An instance of Liverpool shows a gradual transition from a port city to a leisure time and tourism industry. In that case, the process started slowly in the early 1980s, lasting 30 years. Cities with a diverse economic base and a wealth of metropolitan facilities are more likely to be resilient during a crisis. Leipzig, apart from a certain period of decline caused by the "boom of transition", is regaining its vitality. The synergy of top-down renewal programs and bottom-up initiatives is boosting period of city remission. However, still an urban shrinkage appears rather as a pushback of urban policies in many Easter European countries, preventing form the elaboration of top down approach know form Germany or Great Britain.

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#### References

- 1. Rieniets, T. Global Shrinkage. In *Shrinking Cities—Volume 1: International Research*; Oswalt, P., Ed.; Hatje Cantz: Ostfildern, Germany, 2005; pp. 20–34.
- 2. Oswalt, P. (Ed.) Shrinking Cities—Volume 1: International Research; Hatje Cantz: Ostfildern, Germany, 2005.
- 3. Steinführer, A.; Haase, A. Demographic change as future challenge for cities in East Central Europe. *Geogr. Ann. B* **2007**, *89*, 95–110. [CrossRef]
- 4. Martinez-Fernandez, C.; Audirac, I.; Fol, S.; Cunningham-Sabot, E. Shrinking Cities: Urban Challenges of Globalization. *Int. J. Urban Reg. Res.* **2012**, *36*, 213–225. [CrossRef] [PubMed]
- 5. Rink, D.; Couch, C.; Haase, A.; Krzysztofik, R.; Nadolu, R.; Rumpel, P. The governance of urban shrinkage in cities of post-socialist Europe: Policies, strategies and actors. *Urban Res. Pract.* **2014**, *7*, 258–277. [CrossRef]
- 6. Haase, A.; Bernt, M.; Großmann, K.; Mykhnenko, V.; Rink, D. Varieties of shrinkage in European cities. *Eur. Urban Reg. Stud.* **2013**, 23, 86–102. [CrossRef]
- 7. Siedentop, S.; Fina, S. Urban Sprawl beyond Growth: The effect of demographic change on infrastructure costs. *Flux* **2010**, *79–80*, 90–100. [CrossRef]
- 8. Cieśla, A. Shrinking city–term to be veryfied? *Eur. XXI* **2009**, *19*, 45–56. [CrossRef]
- 9. Popescu, C. Deindustrialization and urban shrinkage in Romania. What lessons for the spatial policy? *Transylv. Rev. Adm. Sci.* **2014**, 42, 181–202.
- 10. Bradbury, K.L.; Downs, A.; Small, K.A. *Urban Decline and the Future of American Cities*; The Brooking Institution: Washington, DC, USA, 1982.
- 11. Crandall, R. *The Migration of U.S. Manufacturing and Its Impact on the Buffalo Metropolitan Area*; Federal Reserve Bank of New York, Buffalo Branch: Buffalo, NY, USA, 2002.
- 12. Häußermann, H.; Siebel, W. Die schrumpfende Stadt und Stadtsoziologie. Soziologische Stadtforsch. 1988, 29, 78–94.
- 13. Warf, B. Rustbelt. In *Encyclopedia of Human Geography*; Warf, B., Ed.; SAGE Publications Inc.: Thousand Oaks, CA, USA, 2006; pp. 418–419.
- 14. Nuissl, H.; Rink, D.; Couch, C.; Karecha, J. Decline and sprawl: An evolving type of urban development-Observed in Liverpool and Leipzig. In *Urban Sprawl in Europe: Landscapes, Land-Use, Change & Policy*; Couch, C., Leontidou, L., Petschel-Held, G., Eds.; Blackwell Publishing: Oxford, UK, 2007; pp. 136–161.

Sustainability **2022**, 14, 13203

15. Morrill, R. Shrinking cities: The United States. In *Shrinking Cities: A Global Perspective*; Richardson, H., Woon Nam, C., Eds.; Routledge: London, UK, 2014; pp. 78–94.

- 16. Reckien, D.; Martinez-Fernandez, C. Why do cities shrink? Eur. Plan. Stud. 2011, 19, 1375–1397. [CrossRef]
- 17. Rink, D.; Couch, C.; Grossmann, K.; Cocks, M. From Long-Term Shrinkage to Re-Growth? The Urban Development Trajectories of Liverpool and Leipzig. *Built Environ.* **2012**, *38*, 162–178. [CrossRef]
- 18. Jacobs, J. The Death and Life of Great American Cities; Random House: New York, NY, USA, 1961.
- 19. Stryjakiewicz, T. (Ed.) Kurczenie się miast w Europie Środkowo-Wschodniej (Urban Shrinkage in East-Central Europe); Bogucki Wydawnictwo Naukowe: Poznań, Poland, 2014.
- 20. Jaroszewska, E. Kurczenie się (shrinkage) Starych Miast Przemysłowych i Przeciwdziałanie Jego Negatywnym Skutkom; Instytut Rozwoju Miast i Regionów & UAM: Poznań-Kraków-Warszawa, Poland, 2019.
- 21. Glock, B.; Häußermann, H. New Trends in Urban Development and Public Policy in eastern Germany: Dealing with the Vacant Housing Problem at the Local Level. *Int. J. Urban Reg. Res.* **2004**, *28*, 919–929. [CrossRef]
- 22. Beauregard, R. Voices of Decline: The Postwar Fate of Us Cities; Routledge: London, UK, 1993.
- 23. Wilson, J.Q.; Kelling, G.L. Broken Windows: The Police and Neighborhood Safety. Atl. Mon. 1982, 249, 29–38.
- 24. Keep America Beautiful. *Charting the Multiple Meanings of Blight: A National Literature Review on Addressing the Community Impacts of Blighted Properties*; Vacant Property Research Network: Stamford, CT, USA, 2015.
- Haase, A.; Rink, D.; Grossmann, K. Shrinking cities in post-socialist Europe: What can we learn from their analysis for theory building today? Geogr. Ann. Ser. B 2016, 98, 305–319.
- 26. Hortas-Rico, M. Sprawl, blight and the role of urban containment policies: Evidence form U.S. cities. *J. Reg. Sci.* **2015**, *55*, 298–323. [CrossRef]
- 27. Audirac, I. Shrinking cities: An unfit term for American urban policy? Cities 2018, 75, 12–19. [CrossRef]
- 28. Thompson, E.; de Beurs, K. Tracking the removal of buildings in rust belt cities with open-source geospatial data. *Int. J. Appl. Earth Obs. Geoinf.* **2018**, 73, 471–481. [CrossRef]
- 29. Rybczynski, W.; Linneman, P. How to save our shrinking cities. Public Interest 1999, 135, 30–44.
- 30. Lang, T. *Insights in the British Debate about Urban Decline and Urban Regeneration*; Working Paper, Erkner, Leibniz-Institute for Regional Development and Structural Planning: Erkner, Germany, 2005.
- 31. Wiechmann, T. Errors Expected—Aligning Urban Strategy with Demographic Uncertainty in Shrinking Cities. *Int. Plan. Stud.* **2008**, *13*, 431–446. [CrossRef]
- 32. Stryjakiewicz, T.; Jaroszewska, E.; Marcińczak, S.; Ogrodowczyk, A.; Rumpel, P.; Siwek, T.; Slach, O. Wpółczesny kontekst i podstawy teoretyczno-metodologiczne analizy procesu kurczenia się miast. In *Urban Shrinkage in East-Central Europe*; Stryjakiewicz, T., Ed.; Bogucki Wydawnictwo Naukowe: Poznań, Poland, 2014; pp. 9–14.
- 33. Haase, A.; Nelle, A.; Mallach, A. Representing urban shrinkage—The importance of discourse as a frame for understanding conditions and policy. *Cities* **2017**, *69*, 95–101. [CrossRef]
- 34. Oswalt, P.; Rieniets, T. (Eds.) Atlas of Shrinking Cities; Hatje Cantz: Ostfildern, Germany, 2006.
- 35. Oswalt, P. (Ed.) Shrinking Cities—Volume 2: Interventions; Hatje Cantz: Ostfildern, Germany, 2006.
- 36. Pallagst, K.; Aber, J.; Audirac, I.; Cunningham-Sabot, E.; Fol, S.; Martinez-Fernandez, C.; Moraes, S.; Mulligan, H.; Vargas-Hernandez, J.; Wiechmann, T.; et al. (Eds.) *The Future of Shrinking Cities—Problems, Patterns and Strategies of Urban Transformation in a Global Context. Center for Global Metropolitan Studies*; Institute of Urban and Regional Development, and the Shrinking Cities International Research Network: Berkeley, CA, USA, 2009.
- 37. Fol, S.; Cunningham-Sabot, E. Urban decline and shrinking cities. Ann. De Géographie 2010, 4, 359–383. [CrossRef]
- 38. Rink, D.; Haase, A.; Brent, M.; Arndt, T.; Ludwig, J. *Urban Shrinkage in Leipzig, Germany*; UFZ-Report, Helmholtz-Centre for Environmental Research: Leipzig, Germany, 2011.
- 39. Rink, D.; Haase, A.; Bernt, M.; Arndt, T.; Ludwig, J. Urban Shrinkage in Leipzig and Halle, the Leipzig-Halle Urban Region, Germany; Shrink Smart: 2010. Available online: https://www.ufz.de/export/data/400/39014\_WP2\_report\_Leipzig\_Halle\_kompr.pdf (accessed on 10 February 2022).
- 40. Couch, C.; Cocks, M. Urban Shrinkage in Liverpool, United Kingdom; Shrink Smart: 2010. Available online: https://www.ufz.de/export/data/400/39015\_WP2\_report\_Liverpool.pdf (accessed on 11 February 2022).
- 41. Hollander, J.; Pallagst, K.; Schwartz, T.; Popper, F. Planning shrinking cities. Prog. Plan. 2009, 72, 223–232.
- 42. Bontje, M.; Musterd, S. Understanding shrinkage in European regions. Built Environ. 2012, 38, 153–161. [CrossRef]
- 43. Jarczewski, W.; Sroka, B. Kurczenie się polskich miast a rewitalizacja. In *Rewitalizacja. Raport o Stanie Polskich Miast*; Jarczewski, W., Kułaczkowska, A., Eds.; Instytut Rozwoju Miast i Regionów: Warszawa-Kraków, Poland, 2019; pp. 95–104.
- 44. Bontje, M. Facing the challenge of shrinking cities in East Germany: The case of Leipzig. GeoJournal 2004, 61, 13–21. [CrossRef]
- 45. Nelle, A.; Grossmann, K.; Hasse, D.; Kabisch, S.; Rink, D.; Wolff, M. Urban shrinkage in Germany: An entangled web of conditions, debates and policies. *Cities* **2017**, *69*, 116–123. [CrossRef]
- 46. Kovacs, Z. Cities from state-socialism to global capitalism: An introduction. GeoJournal 1999, 49, 1–6. [CrossRef]
- 47. Hannemann, C. Schrumpfende Städte in Ostdeutschland-Ursache und Folgeneiner Stadtentwicklung ohne Wirtschaftswachstum. *Aus Polit. Und Zeitgesch.* **2003**, *20*, 16–24.
- 48. Le Duff, C. Detroit: An American Autopsy; Penguin Books: London, UK, 2014.
- 49. Friedrichs, J. A theory of urban decline: Economy, Demography and Political Elites. Urban Stud. 1993, 30, 907–917. [CrossRef]

Sustainability **2022**, 14, 13203 11 of 12

50. Röding, A.; Veith, K. Dokumentation zum Bundeswettbewerb Stadtumbau Ost. *BVBW Berlin*. 2003. Available online: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/ministerien/bmvbs/sonderveroeffentlichungen/2005undaelter/DL\_DokumentationBundeswettbewerbSuO.pdf?\_\_blob=publicationFile&v=1 (accessed on 14 March 2022).

- 51. Redlich, W. Zintegrowana Koncepcja Rozwoju Miasta (INSEK) dla Frankfurtu nad Odrą. In *Wybrane Problemy Rozwoju i Rewitalizacji Miast: Aspekty Poznawcze i Praktyczne*; Parysek, J.J., Tölle, A., Eds.; Biuletyn Instytutu Geografii Społeczno-Ekonomicznej i Gospodarki Przestrzennej Uniwersytetu im. A. Mickiewicza w Poznaniu Seria: Rozwój Regionalny i Polityka Regionalna nr 5: Poznań, Poland, 2008; pp. 132–138.
- 52. van de Kaa, D. Europe's Second Demographic Transition. Popul. Bull. 1987, 42, 1.
- 53. van den Berg, L.; Drewett, R.; Klaassen, L.; Rossi, A.; Vijverberg, C. Study of Growth and Decline; Pergamon Press: Oxford, UK, 1982.
- 54. Nijkamp, P.; Wissen, L.J.G.; Rima, A. *A Household Life Cycle Model for the Housing Market*; Serie Research Memoranda, Amsterdam: Faculty of Economics and Business Administration, Vrije Universiteit Amsterdam: Amsterdam, Netherlands, 1988.
- 55. Haller, C. Plädoyer für klare Begrifflichkeiten im Stadtumbauprozess. Städte Im Umbruch 2004, 1, 47–51.
- 56. Kantor-Pietraga, I.; Krzysztofik, R.; Runge, J.; Spórna, T. Problemy zarządzania miastem kurczącym się na przykładzie Bytomia. In *Społeczna Odpowiedzialność w Procesach Zarządzania Funkcjonalnymi Obszarami Miejskimi*; Markowski, T., Stawasz, D., Eds.; Biuletyn KPZK PAN: Warszawa, Poland, 2014; Volume 253, pp. 162–175.
- 57. Oswalt, P. (Ed.) Introduction. In *Shrinking Cities—Volume 1: International Research*; Hatje Cantz: Ostfildern, Germany, 2005; pp. 12–17.
- 58. Hwang, S.S.; Murdock, S.H. Toward an Integrated Ecological-Sociological Theory of Suburbanization. *Contin. Sociol. Hum. Ecol.* **1998**, *13*, 269–282.
- 59. Bryant, C.; Russwurm, L.H.; McLellan, A.G. *The City's Countryside Land and Its Management in the Rural-Urban Fringe*; Longman Inc.: New York, NY, USA, 1982.
- 60. Sugrue, T.J. *The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit*; Princeton University Press: Princeton, NJ, USA, 1998.
- 61. Nuissl, H.; Rink, D. The 'production' of urban sprawl in eastern Germany as a phenomenon of post-socialist transformation. *Cities* **2005**, 22, 123–134. [CrossRef]
- 62. Pfeiffer, U.; Simons, H.; Porsch, L. Wohnungswirtschaftlicher Strukturwandel in den Neuen Bundesländern; Fraunhofer IRB Verlag: Stuttgart, Germany, 2001.
- 63. Brueckner, J.; Helsley, R. Sprawl and blight. J. Urban Econ. 2011, 69, 205–213. [CrossRef]
- 64. Weaver, R.C. Re-framing the urban blight problem with trans-disciplinary insights from ecological economics. *Ecol. Econ.* **2013**, 90, 168–176. [CrossRef]
- 65. Breger, G. The concept and causes of urban blight. Land Econ. 1967, 43, 369–376. [CrossRef]
- 66. Popper, D.; Popper, F. Small can be beautiful: Coming to terms with decline. *Planning* **2002**, *68*, 20–23.
- 67. Hospers, G.J. Policy Responses to Urban Shrinkage: From Growth Thinking to Civic Engagement. *Eur. Plan. Stud.* **2014**, 22, 1507–1523. [CrossRef]
- 68. Turok, I.; Mykhnenko, V. The trajectories of European cities 1960–2005. Cities 2007, 24, 165–182. [CrossRef]
- 69. Dachin, A.; Burcea, F. Structural changes and productivity in the crisis period in Romania. *Theor. Appl. Econ.* **2013**, *6*, 139–148.
- 70. Kantor-Pietraga, I. *Systematyka Procesu Depopulacji Miast na Obszarze Polski od XIX do XXI Wieku*; Wydawnictwo Uniwersytetu Śląskiego: Katowice, Poland, 2014.
- 71. Śleszyński, P. Delimitacja miast Średnhich Tracących Funkcje Społeczno-Gospodarcze Opracowana dla Potrzeb Strategii na Rzecz Odpowiedzialnego Rozwoju; Instytut Geografii i Przestrzennego Zagospodarowania PAN: Warszawa, Poland, 2016.
- 72. Krzysztofik, R.; Runge, J. Urban Shrinkage in Bytom and Sosnowiec, the Katowice Conurbation, Poland; Shrink Smart: 2010. Available online: https://www.ufz.de/export/data/400/39017\_WP2\_report\_Sosnowiec\_Bytom\_kompr.pdf (accessed on 19 January 2022).
- 73. Nadolu, B.; Dinca, M.; Luches, D. Urban Shrinkage in Timisoara, Romania; Shrink Smart: 2010. Available online: https://www.ufz.de/export/data/400/39018\_WP2\_20report\_20Timisoara13639.pdf (accessed on 18 January 2022).
- 74. Paun Constantinescu, I. Rumunia. In *Kurczenie się Miast w Postsocjalistycznych Krajach Europy Środkowo-Wschodniej i Południowo-Wschodniej;* Stryjakiewicz, T., Ed.; Bogucki Wydawnictwo Naukowe: Poznań, Poland, 2014; p. 32.
- 75. Jaroszewska, E. In Search of a New Approach for Urban Policies Under Shrinkage Tendencies in Poland. *J. Spat. Organ. Dyn.* **2014**, *2*, 276–283.
- 76. Paun Constantinescu, I. (Ed.) Shrinking Cities in Romania, Vol 1: Research; DOM Publishers: Berlin, Germany, 2019.
- 77. Paun Constantinescu, I. (Ed.) Shrinking Cities in Romania, Vol 2: Interventions; DOM Publishers: Berlin, Germany, 2019.
- 78. Stan, A.; Pata, I. (Eds.) *Urban Makers: Explorations, Tactics, and Actions into Braila, Romania*; Ion Mincu University of Architecture and Urban Planning: Bucharest, Romania; Bergen School of Architecture: Bergen, Norway, 2016.
- 79. Spreafico, A.; Stefanescu, C. (Eds.) *This Place Is Pretty Good: Spatial Engagement with Braila Latency*; Bergen School of Architecture: Bergen, Norway, 2016.
- 80. Banica, A.; Istrate, M.; Muntele, I. Challenges for the Resilience Capacity of Romanian Shrinking Cities. *Sustainability* **2017**, *9*, 2289. [CrossRef]

Sustainability **2022**, 14, 13203 12 of 12

81. Harańczyk, A. (Ed.) Przejawy i konsekwencje depopulacji miast. In *Uwarunkowania i Konsekwencje Procesu Kurczenia się Miast w Polsce*; CeDeWu: Warszawa, Poland, 2015; pp. 41–80.

- 82. Musiał-Malago, M. Wybrane aspekty kurczenia się miast w Polsce. Studia Miej. 2018, 29, 61–75. [CrossRef]
- 83. Jaroszewska, E. Urban shrinkage and regeneration of an old industrial city: The case of Wałbrzych in Poland. *Quaest. Geogr.* **2019**, 38, 75–90. [CrossRef]
- 84. Rink, D.; Rumpel, P.; Slach, O.; Cortese, C.; Violante, A.; Bini, P.C.; Haase, A.; Mykhnenko, V.; Nadolu, B.; Couch, C.; et al. Governance of Shrinkage—Lessons Learnt from Analysis for Urban Planning and Policy; Shrink Smart; 2012. Available online: https://www.ufz.de/export/data/400/39011\_WP7\_D13\_14\_15\_FINAL\_2.pdf (accessed on 12 March 2022).
- 85. Döringer, S.; Uchiyama, Y.; Penker, M.; Kohsaka, R. A meta-analysis of shrinking cities in Europe and Japan. Towards an integrative research agenda. *Eur. Plan. Stud.* **2019**, *28*, 1693–1712. [CrossRef]
- 86. Oosterlynck, S.; Gonzalez, S. "Don't Waste a Crisis": Opening up the City Yet Again for Neoliberal Experimentation. *Int. J. Urban Reg. Res.* **2013**, *37*, 1075–1082. [CrossRef]
- 87. von Borries, F. To play with shrinking–and shrink playfully? In *Shrinking Cities, Vol. 2: Interventions*; Oswalt, P., Ed.; Hatje Cantz: Ostfildern, Germany, 2006; pp. 622–627.
- 88. Hartt, M. The Prevalence of Prosperous Shrinking Cities. Ann. Am. Assoc. Geogr. 2019, 109, 1651–1670. [CrossRef]
- 89. Sroka, B. Dychotomia Procesu Urbanizacji, Czyli Rozlewanie Miast Kurczących się w Kontekście Systemu Planowania Przestrzennego; Instytut Rozwoju Miast i Regionów: Kraków-Warszawa, Poland, 2021.