

DEINDUSTRIALIZATION AND URBAN SHRINKAGE IN ROMANIA. WHAT LESSONS FOR THE SPATIAL POLICY?

Abstract

After remodeling the economies of the Western world all along the 1980s, deindustrialization abruptly hit the former socialist countries in the early 1990s. Deindustrialization with destructuring meant the disintegration of the economic structure and industrial cities, and regions entered a downsizing spiral of population loss after the breakdown of traditional industries, out-migration and suburbanization. Post-socialist Europe forms a new 'pole of shrinkage'. Set within the regional context, deindustrialization and urban shrinkage show a solid cause-effect relationship in the Romanian case. The industrial change of cities creates a pattern of uneven growth which stays at the core of understanding the emerging urban shrinkage. The paper finds out that 122 out of 260 towns had an above average Location Quotient (LQ) of industrial employment in 1992 and about 5 million urban dwellers were under the threat of forthcoming deindustrialization. Towns of all demographic sizes were above average industrialized but mostly were medium-small and medium-big towns. They lost more than one quarter of the 1992 population number, significantly higher than in towns with below average LQ of industrial employment. At a large extent, the mix of urban, regional and industrial policies failed to reduce the social costs of deindustrialization. The policy response of spatial strategies, while avoiding the 'one size fits all' perspective, should be focused on place-based approach and should be built on economic diversification, complementarity and cooperation within the specific territorial context of small and medium-sized towns.

Keywords: Romania, deindustrialization, social costs of deindustrialization, shrinking cities, spatial policy.

Claudia POPESCU

Claudia POPESCU

Professor, Department of Tourism and Geography, Faculty of Commerce, Academy of Economic Studies, Bucharest, Romania

Researcher, Institute of Geography, Romanian Academy, Bucharest, Romania

Tel.: 0040-213-191.900/378; 0040-213-135.990

E-mail: cldpopescu@yahoo.com



1. Introduction

Starting with the 1970s, deindustrialization, in many ways the most potent political-economic neologism of the 1980s (Doussard *et al.*, 2009), has swept across advanced industrial economies and has initiated a new cycle of economic transformation (Abu-Lughod, 1999). In their classical book on 'Deindustrialization of America' Bluestone and Harrison (1982) analyzed the causes and social consequences of capital mobility and dis-investment behavior. Trying to explain the plant closings, community abandonment and the dismantling of basic industry, they built on the contradiction between the requirements of economic growth and the damage that appeared to have to be done to restructure the national industrial base. The onset of deindustrialization represented for many old industrial cities and regions the lowest point of what had been a dominant mode of urban-economic development and the beginning of a painful shift toward a new pattern of unequal and unstable growth (Doussard *et al.*, 2009).

Plant closures, rationalization of production and industrial job loss came to label the international process of deindustrialization. Reviewing the definitions of deindustrialization, Healey and Ilbery (1990) include a progressive deterioration of manufacturing trade (Singh, 1977) or the failure of a country or region to secure a rate of growth of output and net exports sufficient to achieve full employment (Rhodes, 1986). But, perhaps the simplest definition is an absolute decline in industrial employment (Thirwall, 1982). The main features of the 'anatomy of job loss' (Massey and Meegan, 1982) are not in dispute, but their explanation has 'provoked one of the widest-ranging and most interesting debates in economic geography' (Massey, 1988). There are two main interpretations of the spatial shifts in manufacturing employment: one emphasizes the different characteristics of areas focusing on location factors (Dicken and Lloyd, 1990; Martin and Rowthorne, 1986; Chapman and Walker, 1975; Scott and Storper, 1986; Hayter, 2000; Keeble, 1976), and the other stresses the need to set the location factors within the wider context of the restructuring of industry (Massey, 1988; Fothergill and Gudgin, 1985). Understanding deindustrialization leads to distinct approaches, either behavioral focused on the processes creating spatial variations in economic activity based on motives, values, perceptions, preferences and opinions, or structuralist attempting to relate the changing geography of economic activity to the underlying structure of society and to economic and social relations (Healey and Ilbery, 1990). Either way, deindustrialization was seen as the cause of emerging urban and regional deprivation. 'Boomtown versus busttown' (Bluestone and Harrison, 1982) seemed to be a particular spatial outcome of the process at work. As a 'creative destruction' (Bluestone and Harrison, 1982), deindustrialization was significantly altering the economic and social fabric of cities, favoring some and damaging others. For long, urban growth has evolved at a rapid pace, mainly driven by the demographic impact of industrialization. Within the context of deindustrialization, cities of the industrial age have experienced economic crises, massive job losses and out-migration, hence shrinking cities.

After remodeling the economies of the Western world all along the 1980s, deindustrialization abruptly hit the former socialist countries in early 1990s. In his 'The

Great Transformation of Central Eastern Europe: Success and Disappointment', Kornai (2006) explains that, in the way from centrally-planned to market-oriented economy, the structure of production had to be reorganized since the old production lines ceased to exist and new ones did not take their place immediately due to the absence of regulation in the midst of institutional transformation. Placed within the context of 'transition', deindustrialization in former communist economies gained additional significance. Recent literature refers to transition as a process of 'disorganization' having effects on economies analogous to natural disasters (de Mel *et al.*, 2010): labor and capital are damaged, demand shifts, and many trading relationships are destroyed either temporarily or permanently. Following this assumption, transition is a shock generating a disruption of previous production links, a fall in investment, and capital depreciation due to the absence of replacement investment (Roland and Verdier, 1999). Disorganization is largely explained by the way centralized economies used to work. Under central planning many firms relied on a single supplier for critical inputs. Therefore, under incomplete contracts or asymmetric information, bargaining inefficiently broke down, and because chains of production linked many specialized producers output declined sharply (Blanchard and Kremer, 1997). Transition as a whole has been a 'stop and go' process, though several patterns of transition already existed in Central and Eastern Europe, the peculiarities of socialism in Romania led the country to take a path of its own (Maniu *et al.*, 2001). The transition to the market economy and trade reorientation, as a consequence of COMECON dissolution, have resulted in a structural change in Central and Eastern European countries, mainly industrial restructuring and labor reallocation across sectors and regions. In the 1990s, many transition countries have experienced considerable decline in output and employment (Trăistaru and Wolff, 2002). Deindustrialization has expanded to former communist countries since early 1990s, causing a period of socio-economic dislocation, materialized in plant closings and rising unemployment rate. After 1990, deindustrialization was tantamount to a redefinition of former socialist economies, and East Europeans started to decry the overemphasis of the now-defunct communist governments on heavy industry (Knox and Agnew, 1998, p. 326).

Deindustrialization with destructuring meant the disintegration of the economic structure (Koritz, 1991), and industrial cities and regions entered a downsizing spiral of population loss after the breakdown of traditional industries, out-migration and suburbanization. Post-socialist Europe forms a new 'pole of shrinkage' with three out of four cities with more than 200,000 inhabitants showing population losses (Mykhnenko and Turok, 2007). The authors summarize that: 'The absolute and relative position of cities has deteriorated sharply since the fall of state socialism. Shrinkage rather than growth or recovery has become the dominant trajectory' (Mykhnenko and Turok, 2007, p. 2). Furthermore, overall decline in birth rates to below-mortality rates and ageing population contributed to reinforcing urban shrinkage.

Set within the regional context, deindustrialization and urban shrinkage show a solid cause-effect relationship in the Romanian case. Slow mass privatization and late

restructuring of economy generated successive waves of deindustrialization along the 1990s. The loss of industrial jobs numbered 1.3 million, and cities of all sizes suffered from agglomeration diseconomies. Geographic outcomes were those of in situ survival or closure and rationalization. Spatial shifting of industries to less constraining environments was not a real choice while the new firm creation was delayed by economic and cultural barriers stemming from 'socialist times'. Even in the plants chosen for survival, the application of new technologies or the reshaping of working practices brought about changes hard to cope with. The number of state-owned enterprises reduced to less than half with rising unemployment and poverty rates, urban decay and community abandonment straining the chances of urban recovery.

The paper is aiming to discuss the role of deindustrialization in generating national-wide socio-economic dislocation. The change of industry along the way from the centrally-planned to market-oriented economy, while redefining the spatial patterns of growth and decline, has combined with emergent forms of social and economic inequality. The paper begins by reviewing the industrial legacy of the second half of the 20th century, drawing attention to the shifting dynamics of growth and the over-emphasis of industry as the "path to modernization". It follows then a closer examination of the successive rounds of disinvestment and the deep implications over deindustrialization and economic cycles since the early 1990s. Industrial change of cities creates a pattern of uneven growth which stays at the core of understanding the emerging urban shrinkage. Finally, the paper attempts to assess the policy response to consequences of job loss and urban decline.

2. Industrialization-biased urbanization in socialist times

Centrally-planned industrialization characterized urban development in Romania after the Second World War. The socialist ideology had a strong urban bias and urbanization was considered a value *per se*. Secondary activities and especially heavy manufacturing industry were given priority over primary as well as tertiary activities (Ronnås, 1982). After joining COMECON, industrial development relied on heavy industry (metallurgy, machine building, and chemical products) that became a dogma for economic and political independence and, thus, benefited from massive investments. Location models outlined in the years 1950s-1960s were influenced by the prevalence of heavy industry which required proximity to sources of raw materials and the achievement of regional specialization, following the example of the Soviet territorial production complexes and of the 'Kolossovsky energy resources cycles' (Hamilton, 1970). The objectives of industrial policy targeted the even distribution of industry for the purpose of efficient use of resources and mitigation of the inter-regional imbalances and urban-rural differences in standard of living (Turnock, 1986). 'Forceful industrialization' led to the rapid increase in non-farm employment, while collectivization and mechanization of agriculture facilitated the transfer of labor from the primary to secondary and tertiary sectors (Ronnås, 1982). Sectoral planning dominated over regional planning, and urban places tended to be apprehended as mere

points of concentration of manufacturing activities (Kansky, 1976). Romania's industrial leap, especially in the second half of the 20th century, is suggested by the shift from the obsessively applied label of an 'essentially agrarian country' to the inclusion in the world league of manufacturers in the late 1980s (Popescu, 2000). UNIDO Industrial Development Report 1988-1989 ranked Romania on the 20th position with an added value of 26.81 billion U.S. \$ in 1986, accounting for 0.6% of the world industrial production and with an average annual growth of 4.8% in 1980-1987 (Dicken, 1992, p. 22). The mention is even more valuable as the list included 25 countries accounting for 93% of the world's industrial production. Anecdotal history of economics and geopolitics of the Cold War with regard to Romania, mentions President Jimmy Carter bid to list Romanian industry (estimated in 1978 to 147 billion dollars) on the New York Stock Exchange, and thus, to introduce Romania in the global market economy (Watts, 2010; Talpeș, 2009).

2.1. Industrialization and urban hierarchy

Industrialization has advanced through the urban hierarchy along a gradual scale. The early stage of regional polarization unfolding between 1945 and 1968 pointed to the diminishing of regional imbalances. To this end big investments were earmarked to the regional seats: Iași, Constanța, Baia Mare and Craiova were among the targets of industrialization displaying a variety of new industrial sectors. The building of heavy industry complemented by the electrification program was the main objective of the 1951-1955 five-year plan. Thus, in the metallurgical sector, beside the extension of Hunedoara and Reșița plants, new ones were being commissioned in Galați, Roman, Cluj-Napoca, Târgu Jiu and Buzău; the chemical sector witnessed the building of new combine works at Onești, Săvinești, Năvodari, Govora, Făgăraș, Târgu Mureș and Turnu Măgurele; while machine building benefited by the cut in Czechoslovakian imports and the creation of new plants in Bârlad, Alexandria, Ștei and Vatra Dornei. Textiles and food industry were used to rebalance the labor market of big cities using largely female labor and contributed to the emergence of new industrial towns: Marghita, Beclean, Botoșani, Focșani, and Tecuci. A fundamental change of industrial development targets came with the 1960-1966 six-year plan which provided for fewer raw material imports, hence a new strategy based on many folded industrialization as a component of the economic autarchy concept (Popescu, 1995). But the implementation was delayed by the new administrative-territorial division of 1968. Industrial diffusion, which came afterwards, had in view the principles of multilateral industrial development and spatial uniformity. In fact, industrial development has been designed and controlled so as to ensure spatial uniformity ('continuous improvement of territorial distribution of production forces'); economic uniformity ('removal of economic disparities between regions and between villages and cities'); and social uniformity (social homogeneity in which the role of industry as a human activity increased') (Rausser, 1977, p. 16). The new territorial outlines better reveal the industrial discrepancies between counties. Two sub-stages can be distinguished:

one lasting until 1975, governed by the principle of industrial-territorial balance with emphasis on the new county seats. The idea of creating county-based industrial systems led the investments being earmarked to the less developed county seats. Highest growth rates were recorded by Zalău, Bistrița, Botoșani, Vaslui, Miercurea Ciuc, Alexandria and Slobozia. The machine building branched out, creating electronic and electrotechnical (București, Iași, Timișoara, Curtea de Argeș) and machine tool industries (Blaj, Târgoviște and Gheorgheni); likewise, the chemical sector developed plastics and synthetic rubber sectors. As a result, the economy of the new county-seats expanded and their population tripled or quadrupled between 1966 and 1990. Impressive growth rates in demographic terms have been registered by new county seats: Miercurea Ciuc (1035%) followed by Râmnicu Vâlcea, Slobozia, Târgu Jiu, Suceava, Deva, Slatina, Bistrița, Alba Iulia, Zalău, Sfântu Gheorghe and Vaslui (Benedek, 2006).

After 1975, the pace of economic growth slowed down and industry was extended to the bottom levels of the urban hierarchy. New industrial plants, fewer than previously, were set up in small and medium sized towns, in particular. That was meant to be strengthened and balanced when 23 new towns appeared in 1989 (Benedek, 2006). Small as well as large scale industries were set up in 'no name' locations such as Sânnicolau Mare, Câmpeni, Negrești Oaș, Beclean, Adjud, Toplița, Jibou, Strehăia, and Dorohoi. Industry stood for a precondition of urbanization more than ever. Some villages targeted for industrial fortune were scheduled to become focal points of rural progress. Presumably, the main benefit of this type of location would be the reduction of labor commuting and the consolidation of urban-rural cooperation, far more profitable than a township status itself. Small textile or machine building units became part of local rural economies that flourished around large cities: Pecica and Sântana around Arad, Țibănești, Grozești, Holboca, and Podu Iloaiei near Iași, and Lovrin, Recaș, Jebel and Gătaia in the surroundings of Timișoara.

2.2. Mass production and big enterprises

The most striking trend in industrial location after 1975, with over-reaching consequences in the long run, was to concentrate production in large units and centralize control in large companies in the urban area. The building of big enterprises, with more than 5,000 employees in the city drained important funds and side-tracked the overall urban development. In many cases the number of employees surged spectacularly: Curtea de Argeș – electrotechnical plant from 856 persons in 1975 to 5,011 in 1989; Colibași – automobile factory from 16,903 to 27,658; Botoșani – electronics factory from 975 to 5,471; Reșița – machine building plant from 1,306 to 13,186; Iași – garments factory from 1,371 to 7,650. The few new industrial plants set up after 1975 were also gigantic in size: Călărași – siderurgical combine works with 5,962 employees; Sfântu Gheorghe – machine building unit with 6,621 employees; Craiova – Olcit car plant with 5,224 employees. The vast spatial distribution of big enterprises in almost every branch and in all towns irrespective of size proves that in matters of location strategies, geographical and economic criteria were overruled by ideologi-

cal considerations. Big enterprises increased both in number and employment; there were 140 at the end of the 1980s which employed over 1.2 million persons. The average scale of industrial enterprises was over 2,000 employees with higher figures in metallurgy (4,500) or machine building (2,900). The spatial pattern of big enterprises was dispersed across the urban network: 70 towns out of 260 in 1989 hosted enterprises with over 5,000 employees. The most of them were big towns with more than 100,000 inhabitants but also half of the medium sized towns were home to at least one big enterprise. Demographic size and industrial employment of small and medium sized towns show a correlation statistically significant (0.86) between the two variables (Ianoş, 1993). Furthermore, the correlation between small and medium sized towns and SMEs is weak (0.34) which indirectly points to the dominance of this category of towns by big enterprises (Popescu, 1993). For example, only one big enterprise employs 95% of the total industrial employment in Călan and Colibaşi, 90% in Făgăraş, Oţelu Roşu, and Câmpia Turzii, 80% in Buhuşi and Jimbolia, and 75% in Ştei, Bocşa, Fieni, Năvodari and Balş, enhancing urban vulnerability to economic change.

2.3. *Inherited urban-industrial structures*

There is a strong legacy of cities as centers of production rather than centers of consumption, as cities would spearhead economic modernization with factories. As a result, 122 out of 260 towns had an above average Location Quotient (LQ)¹ of industrial employment in 1992 and 4,987,365 urban dwellers (40.24% of the total) were under the threat of forthcoming deindustrialization. Towns of all demographic sizes were industrialized above average, but mostly were medium-small and medium-big towns (Table 1). Their labor market characteristics and size propelled them into the category of industrial towns due to the propensity for sectoral diversification and large scale industry location. Small towns hosted mainly resource-based industries and given their remote position either in terms of accessibility or rank within the urban hierarchy and limited social and economic options, their potential for further industrial expansion remained low. Large urban concentrations, at their turn, display a better balance of industry and services although their function of command and control over surrounding regions relied heavily on industrial economies.

The spatial pattern of above average LQ towns shows dispersion across regions comprising older and newer industrial towns in relation with earlier or later industrialization waves (Figure 1). The center concentrates a large number of above average

1 Industry LQ is a method of quantifying how concentrated an industry is in a region compared to a larger geographic context, such as the national level. Industry LQ is calculated by comparing the industry's share of regional employment with its share of national employment. In this paper, LQ is used to determine which urban economies host the largest concentrations of industries at the beginning of the transition period as an indicator of further industrial employment decline and subsequent population loss triggered by economic restructuring.

Table 1: Location quotient of industry by demographic size of towns in 1992

Demographic Size	Total	LQ>average	Share (%)
Small (<20,000 inhab.)	151	55	36.42
Medium-small (20-50,000 inhab.)	61	42	68.85
Medium-big (50-100,000 inhab.)	23	14	60.86
Big (>100,000 inhab.)	25	11	44.00
Total	260	122	46.92

Source: Population Census 1992, National Institute of Statistics, author's own calculations

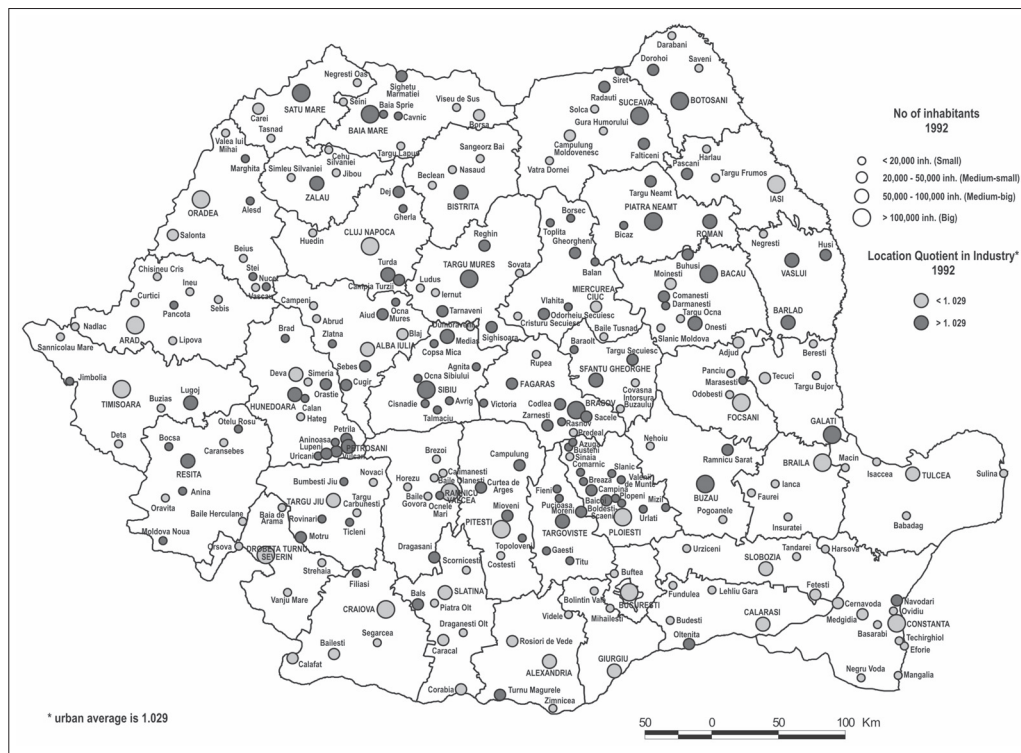


Figure 1: Location quotient of industry in 1992

Source: Population Census 1992, National Institute of Statistics, author's own calculations

LQ towns, mostly small and medium-sized, which belong to highly urbanized and industrialized regions, such as Prahova, Braşov, Sibiu, Hunedoara, Argeş and Cluj. Assigned to play the role of the industrial core during the socialist times, these regions have built on their initial advantage. Turnock noticed that ‘counties like Braşov and Prahova constitute the country’s industrial heartland and it is hard to see how such areas can ever lose their priority claim altogether’ (1986, p. 73). A second concentration lies in the northern and eastern regions. Subject to later waves of industrialization, this concentration is made up mainly of county seats of the 1968 administrative-territorial

reform. Placed in formerly underdeveloped regions, big cities played a major role in building 'county enclaves' (Groza, 1999-2000) of industrial production. Towns like Satu Mare, Baia Mare, Bistrița, Zalău, Suceava, Botoșani, Piatra Neamț, Vaslui and Buzău fall under this category. Second and third-tier industrial towns complete the regional networks of industrial production. Reviewing the spatial development in a centrally planned economy, Ronnås (1982) argued that the commitment to the poorer regions may not be sustained through difficult economic times: it has been suggested that the effort to help these areas constituted a fairly short-term program to provide a modest industrial base to relieve the problems of rural underemployment without excessive long-distance migration.

3. Post-1989 deindustrialization

Industrial cities are subject to deindustrialization. Restructuring the economy was initially accomplished by shrinking the oversized socialist industrial sector. During the 1990s, the dramatic loss of industrial employment was matched by an increase of employment in agriculture. Labor resources have moved from industry to agriculture, which is rather unusual for a European country in the process of post-communist transformation, with services employing a large stagnant share of all employed. The agricultural sector and rural areas favored by the land reform of 1991 acted as a kind of buffer, absorbing people who lost jobs in industry and were not been able to find employment in the slowly developing service sector. Manufacturing followed a path of a long-run decline in employment, while services experienced a slow growth (Reindustrializarea Romaniei, 2010). The two sectors are embroiled in a form of combined and cumulative restructuring, with profound implications both for socio-economic sustainability and for the distribution of jobs and incomes.

3.1. Deindustrialization waves and unstable economic growth of towns

An important issue affecting the structural re-balance of the urban economy is related to the delayed restructuring of state-owned enterprises (SOEs). The initial conditions of Romania were particularly difficult compared to other transition economies, and delays in restructuring and privatization during the 1990s left the country with a larger number of enterprises to be privatized or liquidated than in all other CEECs combined (World Bank, 2004). The onset of privatization of large-scale industry in early 1990s led as a rule to a reduction in the number of jobs and to an increase of unemployment. Undoubtedly, the slow progress in restructuring the large scale state-owned sector implied substantial fiscal costs and impeded the functioning of other branches of the economy, thus risking the hindering of growth potential over the medium to long term. After a short rebound, generated by strong gains in industry, the economic slowdown in the mid-1990s was strictly related to the start of the second wave of privatizations of large SOEs, which had been heavily subsidized by the government. Additionally, the 1997-1999 sharp decline in industrial employment was due to the shock policy of the mining sector. Approximately, 72,000 miners were laid off in two-month span of time (August-September 1997) and other 25,000 during 1998-

1999 (Popescu, 2000). In total, the industrial shrinkage of almost 100,000 miners has played an important role in the poverty increase, especially among population living in rural areas and small towns. Other population sub-groups were severely hit as well, mainly urban unskilled workforce. The recession of 1997-1999 was characterized by a particular deep weakening of industry which generated a dramatic reversal in rural-urban migration. In 1997 the urban out-migration, never encountered in modern history before (Benedek, 2006), triggered urban depopulation at various rates. With only minor exceptions, towns lost population and the rate was more intense in the case of medium sized towns. The town to village migration was the primary factor of demographic change, while welfare suburbanization of more developed regions (Nicolae, 2002) came as a secondary factor.

Growth in 2000-2001 was generated by the export sectors, which, on the one hand, showed that the economy was starting to exploit its competitive advantages and, on the other hand, showed the effects of internationalization of production and capital flows mainly across Europe. During the period of economic recovery it was mainly skilled workers that benefited from growth, while part of the unskilled labor force managed to find jobs in the booming services sector, leading to a slight improvement in the poverty and unemployment level. The second economic rebound started as late as 2000 and paved the way for a relatively robust economic surge up to the fall of 2008. From the early 2000 onward, Romania relaxed its FDI policies and therefore, investment flows have increased, placing Romania on the second position in 2006 among the countries of Central and Eastern Europe. The largest single beneficiary in terms of FDI stocks remains the manufacturing sector, which held more than one third of the inward investments in 2006. Besides the location of many multinational corporations (MNCs), lately the country has witnessed a high birth rate of domestic manufacturing firms which, together with the relatively stable employment and increasing shares of total exports, shows significant gains of productivity and competitiveness. Industrial production growth rate has recorded positive values all along the 2000s, culminating with a two-digit figure in 2008 (10.6%) (CIA World Factbook). A slight stratification resulting from the establishment of a middle class and the emergence of some new categories, such as entrepreneurs, was visible in the last decade.

The retrenchment of manufacturing caused the erosion of job and employment security around what was once the core of the income distribution. The services sector is more skill-intensive than manufacturing and it is associated with a bipolar growth pattern in the form of both wages and job quality. Low-paying jobs mushroomed in the 1990s due to the growing retailing sector and other services of the kind, as an easy and fast way of industrial workforce reconversion and small investments with rapid returns. In contrast, the 2000s saw the emergence of polarization trends in employment. High-paying jobs resulted from the new growing sectors and required skill and training levels that placed them beyond the reach of most workers who were displaced by job loss. The sustained economic expansion of the 2000s suggested that, either way, the benefits of growth were flowing to an increasingly narrow sector of the income

spectrum. 'Urbanization of poverty', the fact that both poverty rates and income inequalities continued to rise even in the midst of the 2000s economic recovery resulted in class segregation of formerly socially integrated urban neighborhoods. Ongoing job retrenchment in the industrial sector is centrally implicated in the continuing processes of uneven growth and wage polarization. Particularly, industrial small and medium sized towns came to be places of conflict between community and capital.

3.2. The regional pattern of industrial decline

Towns with above average LQ of industrial employment belong to different regional settings. Highly specialized regions are more vulnerable to asymmetric shocks, since industry shocks may become region-specific shocks as, for instance, in the case of former mining regions. The level of industrialization at the beginning of the transition period, in 1992, plays a significant role in explaining the different paths of evolution taken by regional economies. In stronger industrialized regional economies, the industrial loss has largely exceeded the total employment loss showing a better capacity of services to expand and absorb the workforce released by the industrial sector. A closed related factor is the large-scale urban economies that enhanced the economic potential of regions to grow. The weaker industrialized economies, on the contrary, seemed to be deprived in terms of endogenous potential to replace the industrial loss. Here, the ratio between the industrial and total employment loss is reversed and regional economies are prone to long term decline. The positive correlation between the initial level of industrialization and the path of transition is a legacy of the socialist era when the progress to economic development was almost entirely based on manufacturing growth (Popescu, 2008). The transition period added new determinants of change as the political control of the economy was gradually replaced by market forces. In other words, the role of the state as industrial owner and industrial location regulator had been substantially curtailed under the regime of liberalization and structural reforms. As a result, the state-owned industrial system had been gradually dismantled, while the emerging spatial pattern of industry was led by private investments which were demonstrably averse to lagging regions. Therefore, with the increasing dominance of private sector industrialization, industries would be more spatially concentrated in leading industrial regions. In the same time, economic restructuring had a hazardous impact upon one-company towns, thus deepening regional disparities. Either MNCs location or domestic entrepreneurship create new firms and jobs but do not generate growth of industrial employment within the context of deindustrialization. They only contribute to the slowdown of job loss.

Under these circumstances, the deindustrialization is the driving force of the post-1990 spatial pattern of industry. The loss of more than half of the 1990 industrial employment had a significant spatial impact at the national level. Data on employment at county level show a more even distribution across regions. To provide visual evidence of the degree to which industry locations are clustered over the national space, Lorenz curve and Gini Index are used. The Gini Index of industrial employment records decreasing values all along the 1990s and the 2000s (Figure 2).

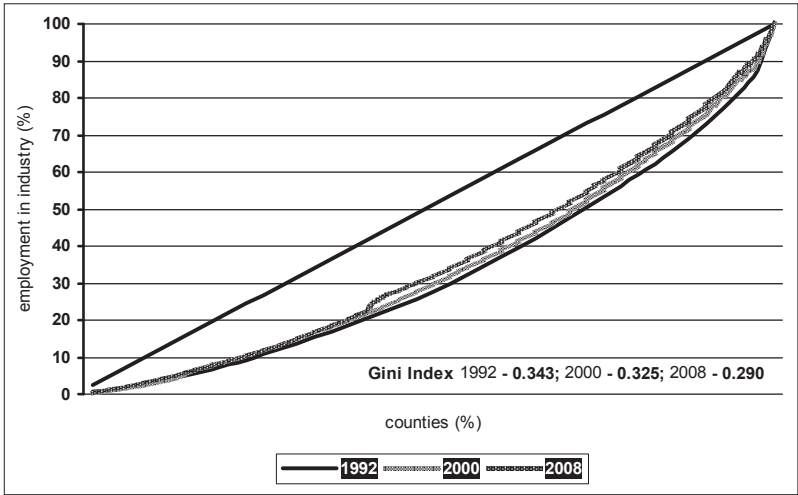


Figure 2: Gini Index and Lorenz Curve in 1992-2000-2008

Source: Population Census 1992, Statistical Yearbook 2001, 2009, National Institute of Statistics, author's own calculations

The decline of industrial employment is positively correlated with the inherited dispersed pattern of industry. Therefore, the tendency towards a more even distribution of industry is driven by two major factors: the initial level of industrialization and large-scale urban economies. The former assumption is based on the shape of the Lorenz curve significantly altered in the middle and upper side. The stable shape at the bottom of the curve shows that the least industrialized regions suffered only minor losses of industrial jobs as compared to the national average. On the contrary, the decline seems to be related to the scale of industrial activities at the beginning of the transition period whereas the regional mix of industries is almost irrelevant in explaining the deindustrialization pattern. The latter assumption is related to the role of large-scale urban economies. As industrialization has been deeply interwoven in the urban fabric during the socialist period, the highly industrialized regions of the country stood for the highly urbanized as well. The Lorenz curve shows, implicitly, the magnitude of the tertiarization process of the biggest urban centers at national level. The metropolitan economy of Bucharest plays a distinctive role. The deindustrialization of Bucharest is substantial for determining the spatial deconcentration of the Romanian industry. In the upper side of the Lorenz curve the contribution of Bucharest to the spatial pattern of industry is evidenced by the visibly flattened shape in 2008 as against 1992. The contribution of Bucharest to the total labor force in manufacturing went down from 12.64% in 1992 to 8.56% in 2008. A similar above average drop has been recorded by all higher industrialized and urbanized regions. Deindustrialization has normalized in many cases the relation between urban scale and functionality by shifting the labor force from manufacturing to services. Regions lagging behind seem to suffer from a uniform employment gap across sectors, suggesting the lack of employment opportunities and attractiveness in these regions.

Significant constraints for regional development resulted from urban deindustrialization. The most striking one refers to the decreasing socio-economic polarization of towns and cities. On one hand, the economic restructuring of big cities reduced their role over adjacent territories and regions, while small and medium sized towns, especially mono-industrial ones, severely hit by deindustrialization and cumulative social threats, suffered a loss of urban functions (Government of Romania and UNDP, 2008).

4. Shrinking cities

According to the recently released preliminary data of 2011 Census, urban population numbers by 2.8 million people less than in 1992. The onset of deindustrialization in early 1990s opened an era of deep transformations and deindustrialization itself turned to be a more socially complex, geographically diverse and politically controversial phenomenon than previously thought. The social costs of deindustrialization include the loss of jobs, homes and health care; reductions in the tax base, which in turn lead to cuts in necessary public services and undermine the cities capacity to cope with dereliction, deprivation and pollution; decaying local landscapes; family violence and depression; declines in nonprofits and cultural resources; and loss of faith in institutions such as government, business, unions, and traditional political organizations. Lost jobs in a major industry ripple through the community, affecting other businesses, and communities lose the essential resources that allow them to function. Looking at the consequences, these cities seem to develop inner-city peripheries: areas of disinvestment – whether in the form of industrial brownfields, neighborhoods in decay, or clusters of abandoned houses. The social and technical infrastructure becomes underused. Under these circumstances, deindustrialization leads to population declines, both immediately after major job losses and in subsequent years, as some displaced workers move in search for work. While such moves may or may not provide workers and their families with more secure futures, their departures undermine the effectiveness of the communities they leave behind. Especially in cities where many people work for the same company or industry, shared work contributes to the sense of belonging, and social networks in one-company or mining towns become especially strong. When people leave these areas, the loss involves more than simple numbers. When factories and blocks of flats are torn down or allowed to decay, communities are deprived of motivation and means of effective action. At the same time, the altered landscape creates a new sense of place, and living in a deteriorating environment reinforces feelings of insecurity that often accompany job loss. Further, this response affects not only displaced workers but the community as a whole and cities get ambushed into a ‘development trap’.

4.1. Population loss

Urban shrinkage is wide-spread across all the hierarchical levels of the urban network. Few small towns make an exception favored by their location close to the capital city. All the others have lost population at various rates. Towns with below average LQ of industry at the beginning of the transition period, mostly small-sized, lost

population due to locational disadvantages and lack of attractiveness for economic diversification. The agrarization of local economies was a short term solution for laid off former employment in industry which became self-employment and low revenues resulted from subsistence agriculture ended up in rising poverty. The most numerous group of shrinking cities is made up of above average LQ towns. They belong to all categories of demographic sizes, but medium small towns are prevalent (Figure 3). Population losses for most of them account for 20 to 40% of the 1992 number of inhabitants. In these towns, as in all formerly above average industrialized towns, the retrenchment of mining and/or manufacturing is associated with a 'disappearing middle' phenomenon, leading to the erosion of jobs and employment security around the former mainstream of the income distribution. Employment in services tends to be associated with a bipolar growth pattern in the form of both wages and job quality. The dismantling of basic industries seems to be particularly severe in single industry resource towns. Remote, specialized outposts comprising populations with limited social and economic options and vulnerable to the destructive forces of deindustrialization, these towns had to cope with nationally based restructuring or local resource exhaustion or both. Industry resource towns represent export-based forms of industrialization, thus, they are largely exposed and vulnerable to exogenous forces. Their viability is also intricately affected by 'resource cycles' defined as inevitable long run patterns of resource exploitation and collapse.

While industry, once the backbone of urban economy, suffered severe losses in the 1990s, the sector also contained pockets of resilience. By the end of the growth period, in 2008, the downsized but also reorganized and restructured industrial sector was rooted in towns privileged by labor market characteristics and business opportunities. Nevertheless, only few urbanization economies could pursue a strong tertiarization shift and balance their employment structures.

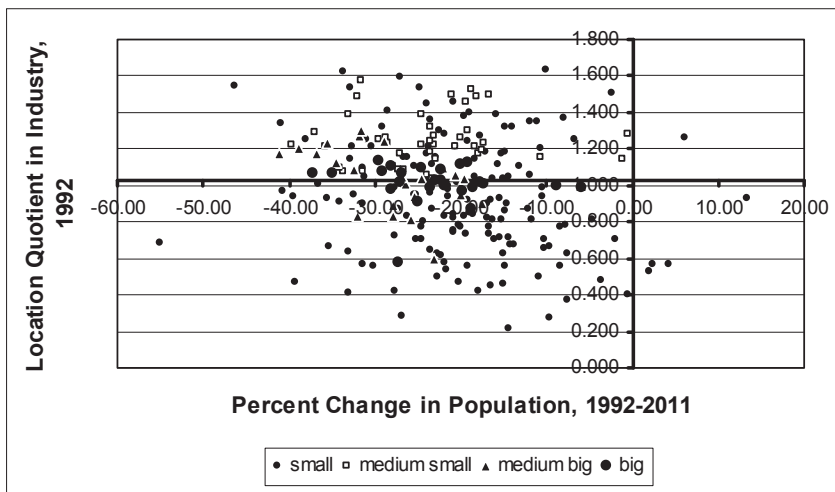


Figure 3: Location quotient of industry and percent change in population

Source: Population Census 1992, 2002, 2011, National Institute of Statistics, author's own calculations

4.2. Industrial towns

Towns with above average LQ of industrial employment in 1992 have lost 654,224 jobs during the first decade of transition. Given the high level of industrialization at the beginning of the 1990s, the drop of industrial labor force has had a direct influence on the total employment mainly engaged in industry-related sectors. Long term effects of deindustrialization are mirrored by the population loss which reached 1.3 million inhabitants from 1992 to 2011². In total, they lost more than one quarter of 1992 population number, significantly higher than in towns with below average LQ of industrial employment (Table 2).

Table 2: Location quotient of industry and percent change in population of towns by demographic size

Demographic Size	% Change of Population 1992-2011	
	LQ below average in 1992	LQ above average in 1992
Small (<20,000 inhab.)	-19.62	-21.71
Medium-small (20-50,000 inhab.)	-24.16	-25.42
Medium-big (50-100,000 inhab.)	-25.20	-30.25
Big (>100,000 inhab.)	-19.21	-27.33
Total	-20.22	-26.69

Source: Population Census 1992, 2002, 2011, National Institute of Statistics, author's own calculations

By size classes, the evolutionary paths display different contexts of demographic change. Small towns are severely damaged by the population loss. In either mining or single industry towns, ageing and out-migration reduced the population by more than one third. Especially former mining small towns were vanquished by dereliction and deprivation and 'left to die quietly' (Satmari, 2009). In towns like Bălan, Anina, Moldova Nouă, Uricani, Victoria, Agnita and Găești poverty was one step away from deindustrialization and depopulation came 'naturally' after. A quarter of medium small towns with above average LQ score population reductions of 30 to 40%. Mining towns (Motru, Lupeni, and Vulcan) as well as one-company towns (Turnu Măgurele, Făgăraș, Buhuși, Câmpulung, Balș) are critical examples for this category. Medium big towns with population losses of more than one third are first and second tier towns within the county level (Reșița, Petroșani, Roman, Onești, Bârlad, Hunedoara, Mediaș) undermined by their strong specialization in mining, metallurgy or chemical industry. Illustrative is that all of them were home to big SOEs with more than 5,000 employees in 1992 and, hence, higher social costs of deindustrialization. Big cities generally regarded as the 'winners' of transition (Benedek, 2006) followed a smoother evolutionary path unless their over-industrialization would not have prompted them into the same difficult and painful economic restructuring.

² Population data are preliminary data released by the National Institute of Statistics at www.recensamantromania.ro/wp-content/uploads/2012/08/TS2.pdf

5. Policy response

Small and medium-sized towns represent a special concern for spatial planning and development strategies at the European level. EU-based spatial policies (European Commission, European Spatial Development Perspective, 1999; European Commission, 2010) grounded on a large number of ESPON (European Observation Network for Territorial Development and Cohesion) projects build on major concepts such as polycentricity, accessibility, competitiveness, cohesion, integration, regional specialization and others alike. They argue that less dynamic towns should be addressed through a policy aimed to diversify their narrow economic base and enable them to complement each other and cooperate. Complementarity has to be expanded to all urban functions (culture, education, knowledge, and social infrastructure) in order to enhance the role of small and medium-sized towns as focal points for regional rural development and promotion of their networking. Spatial policies in Romania are convergent with the European ones starting from the same conceptual foundation and promoting economic diversification and urban regeneration of local poles (Ministry of Public Works and Housing, 2008). At a large extent, the mix of urban, regional and industrial policies failed to reduce the social costs of deindustrialization. The policy response of spatial strategies while avoiding the 'one size fits all' perspective, should be focused on place-based approach and should build on economic diversification, complementarity and cooperation within the specific territorial context of small and medium-sized towns (at the fringe of a large urban agglomeration, in a network of small and medium-sized towns or local poles in rural areas).

5.1. *Spatial policy vs. urban policy*

Urban policy is the main strand of spatial policy in Romania (ESPO and European Institute of Urban Affairs, 2011). Explicit urban policies are targeted to big cities in particular as one of the weaknesses of the recent urban evolution is the over-polarization of Bucharest with its highest FDI attraction and lowest unemployment rate (Government of Romania and UNDP, 2008). Major cities are widely acknowledged as engines of growth that will 'spill-over' into the rest of the country. Following this assumption and heading to polycentric structures within large urban regions, seven big cities have been assigned the role of 'growth poles' (Government Decision no. 998/2008) in the sense of Perroux theory. National and EU funding would be channeled towards these cities in the attempt to enforce the growing potential of city regions and to counterbalance the dominance of Bucharest (Iași, Constanța, Ploiești, Craiova, Timișoara, Cluj-Napoca, and Brașov). Functional specialization and strengthening the second tier of cities worked to develop alternative nodes of growth and to produce more even access to services across the national territory. To this aim, a number of 13 towns have been chosen to act as 'urban development poles'. They have a balanced geographical cover and lead the urban systems at the county level (Arad, Baia Mare, Bacău, Brăila, Galați, Deva, Oradea, Pitești, Râmnicu Vâlcea, Satu Mare, Sibiu, Suceava, Târgu Mureș). The urban policy is based on positive measures solely, but in order to reduce the domi-

nance of capital city, negative measures or policies of constraint might be simultaneously used aiming to discourage growth in the congested city region of Bucharest. Small and medium-sized towns have been a major concern of the regional policy due to their strong decline and loss of functions. The strategic concept of territorial development (2008) identifies industrial small and medium sized towns as 'territorial actors' playing a crucial role for the polycentric development.

5.2. Regional policy

The main objective of the regional policy is to reduce inter and intra-regional gaps in socio-economic development. The policy became more geographically sensitive with the adoption of the Less Favored Areas including both mining and manufacturing towns. This was aiming at the diversion of jobs to the assisted areas but had a relatively low impact on industry relocation in particular regions. Policy was most active in the late 1990s and primarily focused on declining industrial towns. Mostly small and medium sized towns specialized in declining industrial sectors as metallurgy, textiles, chemicals, wood processing were towns requiring priority aid (Popescu, 2006). After the 'shock' restructuring of mining, 26 less favored areas completed the list of 'hotspots' of social and economic crisis. These were identified on the basis of several criteria. First, over half of the employment would be in the mining industry; secondly, unemployment rate would be more than 25% the national average; and thirdly, poor infrastructure. A wide range of incentives were made available to firms willing to relocate or start business in assisted areas. These include: grants, loans, tax allowance, labor subsidies which together with training programs attempted to raise the local entrepreneurship and attractiveness for investments. Urban blight moved the attention of policy-making to the inner city areas and the inventory of brownfields at the national level made clear that their regeneration encumbers the achievement of a sustainable urban environment. Nevertheless, their approach is erratic and slow progress has been made so far in designing a coherent plan of action. In the same time, recognizing the role of technological change, the regional policy focused on industrial parks as ways to solve the problem of growth by attracting growing industries and firms. Industrial parks policy offers special grants for activities like administration offices, R&D laboratories and training offices that create additional employment and enhance territorial cooperation. Response to the scheme of less favored areas and industrial parks was poor and the number of jobs created by firms encouraged to locate in peripheral 'development' areas was rather low. Relation between new jobs created and regional policy cost raises the question of effectiveness, especially if regional differences in economic wealth have not been significantly reduced (Popescu *et al.*, 2003). At least partially, the answer refers to the concomitant application of positive measures to relocate in less developed areas and to enforce growing potential of city regions which undermined the effect on the poorer regions in their way to catch up with the richer ones. As such, spatial outcomes of the national policies are questionable as the inter-regional gaps show a tendency to grow. The ratio of GDP of the rich-

est (Bucharest-Ilfov) and the poorest region (Northeast) grew significantly showing that the regional policy was inappropriate to even out the development disparities and to expand growth from the core regions to the peripheries (Popescu, 2006).

5.3. Industrial policy

Fast trade liberalization in early 1990s led to the massive exit of firms from the market, not allowing technological learning and capability formation to take place. Successful catch-up in industries where international trade is considerable requires some kind of industry protection or other modes of support. Lacking protectionist measures, the industrial policies designed so far (2001 and 2005) were weak to address market failures and to kick-start growth. They basically built on the location advantages of the country missing the variation in time of these comparative advantages within the globalized economy which underscores the capability to cope with competitive pressures and market forces on medium and long term. Industrial policies express the way in which the government aimed at achieving the fast-tracking process of structural change. The 2001 industrial policy relied heavily on natural resources and in situ production infrastructure in the attempt to develop comparative advantages of the entire manufacturing sector and avoid 'selective' interventions. The policy lacked strategic schemes showing rather a random pattern (Croitoru *et al.*, 2002) which eventually supported inefficient industries and delayed the structural adjustment. Industrial structural weaknesses were amplified by policy weaknesses resulting in slow privatization, bottle-necked restructuring and unfriendly business environment. The 2005 industrial policy showed a different approach guiding the governmental interventions to selectively promote certain manufacturing sectors. 'Picking winners' to enhance competitiveness, in fact making an extended list of 'successful' industries, raised doubts on the governmental capability to identify the sectors that may have a latent comparative advantage. In both instances, public measures avoided to use the 'live and let die' principle showing a weak political will to end support to failing firms and industries, and thus contributed to persistent decline. A new industrial policy is under way to be designed and, hopefully, it will tackle with the national specificities as well as the new challenges of the international framework: the increasing globalization of the world economy and the rise of global production sharing; climate change and the technological innovation required to reduce industrial emissions; and the rise of the knowledge-based 'entrepreneurial economy' (Naudé, 2010). Given the large share of the private sector within the national industry, the forthcoming policy would stem from the dialogue between the state and the private sector aiming to identify and remove binding constraints on development.

6. Conclusions

Deindustrialization is the result of a complex set of factors including radical change of the property regime, dissolution of traditional markets, fast trade liberalization, globalization, offshoring, deregulation, downsizing and technological change that are

inherently interconnected. More than 1.5 million industrial jobs were lost in the last 20 years, and recent trend of reindustrialization does by no means imply 'job-loss recovery'. The industrial sector is still losing jobs very slowly but it gains strength to support exports and attract further investments. Industry has been following a long-run decline in employment and has triggered a combined and cumulative restructuring across economic sectors, revealed by the corresponding shrinkage of the total employment in economy. Due to deindustrialization, income inequality began to increase and cities as the major places of industrial decline turned socially polarized. Population change is an important consequence of urban conditions, especially the availability of economic opportunities. Loss of population has certainly caused wider economic and social problems for cities by changing the demand for consumer goods and services and influencing further investment decisions.

Small and medium-sized towns predominantly with a former industrial background suffer from the legacy of obsolete structures or their setbacks and from a development gap in their tertiary market sector, especially enterprise services. Structural changes, mainly the shift from manufacturing to services, caused a downturn due to the de-connection of local activities. Therefore, these towns often have weak links with each other due to the post-1989 deindustrialization which undermined the production-based economies and social fabric of local communities. Losing their production functions, many former industrial towns, mostly small and medium-sized, were choked off from the mainstream flow of labor, products, and knowledge. Competing for aids and investments, these towns would draw more benefits from networking and cooperation and would consequently make up for their lack of high level services.

Planning strategies need to address the management of shrinkage implying a specific agenda for action. First, the social costs of deindustrialization ask for a place-based development strategy and a long term vision. Second, addressing the social costs of deindustrialization and preventing further industrial losses will require a dramatic rethinking of the nature of the economy as well as the re-enforcement of urban polycentricity.

References:

1. Abu-Lughod, J.L., *New York, Chicago, Los Angeles: America's Global Cities*, Minneapolis: University of Minnesota Press, 1999.
2. Benedek, J., 'Urban Policy and Urbanisation in the Transition Romania', 2006, *Romanian Review of Regional Studies*, vol. II, no. 1, pp. 50-64.
3. Blanchard, O. and Kremer, M., 'Disorganization', 1997, *Quarterly Journal of Economics*, vol. 112, no. 4, pp. 1091-1126.
4. Bluestone, B. and Harrison, B., *The Deindustrialization of America: Plant Closings, Community Abandonment, and the Dismantling of Basic Industry*, New York: Basic Books, 1982.
5. Chapman K. and Walker, D., *Industrial Location*, Oxford: Basil Blackwell, 1975.
6. Croitoru, L., Russu, C. and Tarhoaca, C., 'Politica industrială a României din perspectiva aderării la UE: neutralitate vs. selectivitate', Impact Study for Pre-accession no. 13, Institutul European Roman [European Romanian Institute], 2002.

7. De Mel, S., McKenzie, D. and Woodruff, C., 'Enterprise Recovery Following Natural Disasters', The World Bank Policy Research Working Paper no. 5269, 2010.
8. Dicken, P. and Lloyd, P., *Location in Space: Theoretical Perspectives in Economic Geography*, 3rd edition, New York: Harper Collins Publishers, 1990.
9. Dicken, P., *Global Shift: The Internationalization of Economic Activity*, 2nd edition, London: Chapman Publishing Ltd., 1992.
10. Doussard, M., Peck, J. and Nik, T., 'After Deindustrialization: Uneven Growth and Economic Inequality in "Postindustrial" Chicago', 2009, *Economic Geography*, vol. 85, no. 2, pp. 183-207.
11. ESPON and European Institute of Urban Affairs, 'Secondary Growth Poles in Territorial Development in Europe: Performance, Policies and Prospects', 2011, [Online] available at http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/SGPTD/SGPTD-Interim-Report_28-02-2011_xrevx.pdf, accessed on October 12, 2013.
12. European Commission, 'Green Paper on Territorial Cohesion – The Way Ahead', 2010, [Online] available at http://ec.europa.eu/regional_policy/sources/docgener/panorama/pdf/mag28/mag28_en.pdf, accessed on October 15, 2013.
13. European Communities, European Spatial Development Perspective, 'Towards Balanced and Sustainable Development of the Territory of the European Union', 1999, [Online] available at http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/pdf/sum_en.pdf, accessed on October 15, 2013.
14. Fothergill, S. and Gudgin, G., 'Ideology and Methods in Industrial Location Research', in Massey, D. and Meegan, R. (eds.), *Politics and Methods: Contrasting Studies in Industrial Geography*, London: Methuen, 1985, pp. 92-115.
15. Government Decision no. 998/2008 regarding the designation of national growth poles in which to be concentrated with priority investments from European and national funding published in Official Monitor of Romania no. 641 of September 8, 2008.
16. Government of Romania and UNDP, 'Strategia Națională pentru Dezvoltarea Durabilă a României Orizonturi 2013-2020-2030' [National Sustainable Development Strategy of Romania. Horizons 2013-2020-2030], 2008, [Online] available at <http://www.insse.ro/cms/files/IDDT%202012/StategiaDD.pdf>, accessed on October 15, 2013.
17. Groza, O., 'Polarisation territoriale et organisation administrative en Roumanie. Le chaînon manquant: le niveau régional', 1999-2000, *Revue Roumaine de Géographie*, vol. 43, no. 4, pp. 19-34.
18. Hamilton, F.E.I., 'Aspects of Spatial Behavior in Planned Economies', 1970, *Papers in Regional Sciences*, vol. 25, no. 1, pp. 83-105.
19. Hayter, R., 'Single Industry Resource Towns', in Sheppard, E. and Barnes, T. (eds.), *A Companion to Economic Geography*, Oxford: Blackwell Publishing, 2000, pp. 290-308.
20. Healey, M. and Ilbery, B., *Location and Change Perspectives on Economic Geography*, Oxford University Press, 1990.
21. Ianoș, I., 'Comparative Analysis of Urban and Industrial Hierarchies of Romanian Towns in 1990', 1993, *GeoJournal*, vol. 29, no. 1, pp. 49-56.
22. Kansky, K.J., *Urbanisation under Socialism: the Case of Czechoslovakia*, New York: Praeger Publishing Inc., 1976.
23. Keeble, D.E., *Industrial Location and Planning*, London: Methen, 1976.

24. Knox, P. and Agnew, J., *The Geography of the World Economy*, 3rd edition, London: Arnold, 1998.
25. Koritz, D., 'Restructuring or Destructuring? Deindustrialization in Two Heartland Cities', 1991, *Urban Affairs Review*, vol. 26, no 4, pp. 497-511.
26. Kornai, J., 'The Great Transformation of Central Eastern Europe Success and Disappointment', 2006, *Economics of Transition*, vol. 14, no. 2, pp. 207-244.
27. Maniu, M.T., Kallai, E. and Popa, D., 'Explaining Growth. Country Report Romania (1990-2000)', 2001, [Online] available at <http://www.eldis.org/go/home&id=13693&type=Document#.U5GTyyhpexg>, accessed on October 7, 2013.
28. Martin, R. and Rowthorne, R. (eds.), *The Geography of Deindustrialization*, London: Macmillan, 1986.
29. Massey, D. and Meegan, R., *The Anatomy of Job Loss: The How, Why and Where of Employment Decline*, London: Methuen, 1982.
30. Massey, D., 'What's Happening to UK Manufacturing?', in Allen, J. and Massey, D. (eds.), *Restructuring Britain: the Economy in Question*, London: Sage Publications, 1988, pp. 45-90.
31. Ministry of Public Works and Housing, 'Conceptual strategic de dezvoltare teritorială România 2020' [Strategic Concept of Territorial Development Romania 2020], 2008, [Online] available at http://www.mdrl.ro/_documente/publicatii/2008/Brosura%20Conc_strat_dezv_teritoriala.pdf, access on October 7, 2013.
32. Mykhnenko, V. and Turok, I., 'Cities in Transition: East European Urban Trajectories 1960-2005', Working Paper no. 4, Center for Public Policy for Regions, University of Glasgow, 2007.
33. Naudé, W., 'New Challenges for Industrial Policy', Working Paper no. 2010/107, UNU-WIDER, United Nations University, 2010.
34. Nicolae, I., *Suburbanismul ca fenomen geografic în România*, București: Meronia, 2002.
35. Nordregio, 'ESPON 111 Potentials for Polycentric Development in Europe. Project Report', 2004, [Online] available at http://www.espon.eu/export/sites/default/Documents/Projects/ESPON2006Projects/ThematicProjects/Polycentricity/fr-1.1.1_revised-full.pdf, accessed online at October 11, 2013.
36. Popescu, C., 'Geographical Considerations on the Romanian Industrial Small and Medium-Sized Enterprises', 1993, *Revue Roumaine de Géographie*, vol. 37, pp. 13-21.
37. Popescu, C., 'The Spatial Evolution of the Romanian Industry during the 20th Century', 1995, *Revue Roumaine de Géographie*, vol. 39, pp. 21-30.
38. Popescu, C., *Industria României în secolul XX. Analiză geografică*, București: Oscar Print, 2000.
39. Popescu, C., 'Industrial Restructuring', in Bălțeanu, D., *Space, Society, Environment*, București: Editura Academiei Române, Institutul de Geografie, 2006, pp. 236-257.
40. Popescu, C., 'Spatial Structures of the Romanian Economy', in Kahl, T., Metzeltin, M. and Ungureanu, M.R. (eds.), *Rumanien. Raum und Bevölkerung. Geschichte und Geschichtsbilder. Kultur. Gesellschaft und Politik heute. Wirtschaft. Recht und Verfassung. Historische Regionen, Osterreichische Osthefte – Sondebund*, Wien: LIT Verlag, 2008, pp. 89-105.
41. Popescu, C., Negut, S., Roznovietchi, I., Suditu, B.A. and Vlad, L.B., *Zonele minere defavorizate din România Abordare geografică*, București: Editura ASE, 2003.

42. Rausser, V., *Repartizarea teritorială a industriei*, București: Editura Academiei Republicii Socialiste Române, 1977.
43. Rhodes, J., 'Regional Dimension of Industrial Decline', in Martin, R. and Rowthorne, B. (eds.), *The Geography of De-industrialisation*, London: Macmillan, 1986, pp. 138-168.
44. Roland, G. and Verdier, T., 'Transition and the Output Fall', 1999, *Economics of Transition*, vol. 7, no. 1, pp. 1-28.
45. Ronnås, P., 'Centrally-planned Urbanization: The Case of Romania', 1982, *Geografiska Annaler Series B, Human Geography*, vol. 64, no. 2, pp. 143-151.
46. Satmari, A., 'Anina: Poveștile orașului', in Voiculescu, S. (ed.), *The Romanian Post-socialist City: Urban Renewal and Gentrification*, Timișoara: Editura Universității de Vest, 2009, pp. 143-175.
47. Scott, A.J. and Storper, M. (eds.), *Production, Work, Territory: A Geographical Anatomy of Industrial Capitalism*, Winchester, MA: Allen and Unwin, 1986.
48. Singh, A., 'UK Industry and the World Economy: A Case of Deindustrialisation?', 1977, *Cambridge Journal of Economics*, vol. I, pp. 113-136.
49. Talpeș, I., *În umbra marelui Hidalgo*, București: Vivaldi, 2009.
50. Thirwall, A.P., 'Deindustrialisation in the United Kingdom', Issue no. 44 of *Lloyds Bank Review*, Economics Association, 1982.
51. Trăistaru, I. and Wolff, G.B., 'Regional Specialization and Employment Dynamics in Transition Countries', Center for European Integration Studies, University of Bonn, ZEI Working Paper, no. B 18, 2002.
52. Turnock, D., *The Romanian Economy in the Twentieth Century*, London: Croom Helm, 1986.
53. UNIDO, 'Industry Development Report 1988-1989'.
54. Watts, L.L., *Ferește-mă Doamne de prieteni. Războiul clandestin al blocului sovietic cu România*, București: Rao, 2010.
55. *** CIA World Factbook, 2008.
56. *** World Bank Development Report, 2004.