



**Governance of Shrinkage
Within a European Context**



Work package 2

Urban shrinkage in Bytom and Sosnowiec, the Katowice Conurbation, Poland

Research report

D4 Comparable research report

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1. EXECUTIVE SUMMARY

The Katowice Conurbation is the largest metropolitan region in Poland. In the core zone there are 16 cities, followed by another 17 in the peripheral region. It is important to underline that the Katowice Conurbation makes up the largest shrinking region in Central and Eastern Europe. The depopulation of the region has marked itself strongly in the 17% decrease of population, from 2 million 311.5 thousand in 1990 to 1 million 978.5 thousand in 2007. The fall was noticed in all cities of the Katowice Conurbation, including Katowice - the capital of the region, as well as the examined cities of Bytom and Sosnowiec. The shrinking cities of the Katowice Conurbation present the most spectacular example of socio-economic problems existing in the post-industrial area of the urban region.

Both above mentioned cities - Bytom and Sosnowiec have been analysed in the report as partially different types of urban centres in the view of city shrinkage. Medieval Bytom, with its urban space similar to H. Hoyt's *sector model of urban land use*, differs slightly when compared to Sosnowiec, which was established in the beginning of the 20th century, with its urban space explained by Harris and Ullman in *multiple nuclei theory of urban structure*. Different political histories, as well as, partially different economic functions of the cities, were consolidated after World War II into a visible spatial monolith.

Destruction of the monolith from the socio-economic point of view took place at the end of the 1980s. However, some symptoms of the upcoming demographic crisis surfaced in the 1980s and even in the 1970s. Both cities entered new paths of development after 1990, but the paths differed - in the case of Sosnowiec, it was a reaction and simultaneously positive one, and in the case of Bytom - unfortunately, it was reaction, but at the same times a negative path. Both cities, however, belong to the group of cities with a majority population outflow rather than inflow, and also belong to the group of urban centres with a negative image. It is significant to mention that in the research of *BAV Consulting*, as well as *KB Pretendent Agency*, Bytom was qualified as the most repulsive city in Poland in 2009. Unfortunately, Sosnowiec ranked high too.

The effects of city shrinkage are visible in both cities in the context of social and demographic models, economic processes or spatial changes. As far as demographic problems are concerned, issues such as the decreasing number of persons in the average flat or household, or a lower index of the number of children in the average family, shall be brought to attention. A decreasing unemployment rate has been a very positive element in recent years (around 12-16% in 2007), and is presently similar to the Polish average. The problem of demographic decrease has been brought about mainly by the economic transformation and changes in the regional economic base. In the course of the last two decades, the model of an industrial city has been transformed into a model of a service city or a service and industrial city. The inflow of new investments is concentrated on, and directed to, only several cities. Sosnowiec constitutes a good example. Bytom, on the other hand, is unfortunately outside this network.

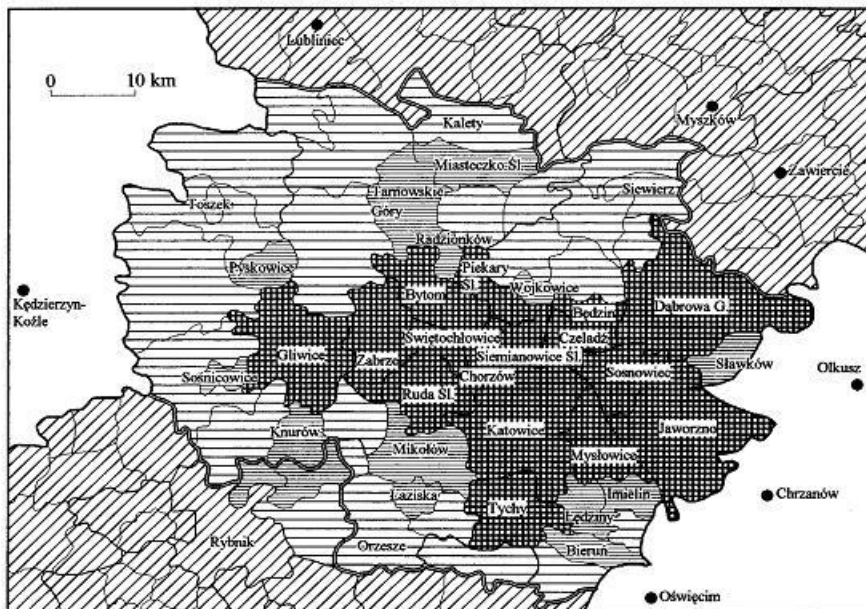
A positive element of the transformation is the fact that the technical infrastructure is in much better condition than it was 10-20 years ago, but there is still room for improvement, especially in the field of transport. A similar problem is posed in the case of housing. The problem results from the fact that the shrinking numbers of citizens increasingly use both kinds of infrastructure. The fact is the growing number of houses and flats are occupied by a plummeting number of inhabitants. It is significant to mention that the society is growing older and earn relatively less. The municipal budget may be of limited help. An additional problem, in the case of Bytom, is caused by mining damages, with reference to both housing and infrastructure. Bytom and Sosnowiec constitute two representative cities located in the post-industrial conurbation and they strongly experience all the problems determined by the shrinkage process. Both cities present similar examples of different methods of urban space improvement as well as the elimination of limits of frequently ambitious aims.

2. PATTERNS OF URBAN SHRINKAGE

2.1. Reasons and Premises

Introduction

The Katowice Conurbation is the largest urban region in Poland and one of the largest in Central and Eastern Europe. The population of the conurbation is about 3 million and in the core area, about 2 million. In the case study of the Katowice Conurbation, only the core area was examined. In order to understand the region, it is important to acknowledge that the core area consists of the municipal region of GZM “Silesia,” which stands for Gornoslasko-Zaglebiowska Metropolia “Silesia” (*in Polish*) and The Upper Silesian - Basin Region Metropolis “Silesia” (*in English*). In the core area of GZM there are 14 cities, all of which hold an administrative district (Polish- powiat) function - Bytom, Chorzow, Dabrowa Gornicza, Gliwice, Jaworzno, Katowice, Myslowice, Piekary Slaskie, Ruda Slaska, Siemianowice Slaskie, Sosnowiec, Swietochlowice, Tychy, Zabrze (fig 1); the remaining 17 cities are located in the inner and outer zone of the Katowice Conurbation. The index used for the study excluded two smaller towns of the core area of the Conurbation – Bedzin and Czeladz. Both towns are located in the non-urban¹ Bedzin administrative district (Polish- powiat). To summarize, the case study examines 14 cities -administrative districts- constituting the GZM with a thorough analysis of two cities - Bytom and Sosnowiec. In the further part of the WP2 report, the terms of the Katowice Conurbation and the core area of the Katowice Conurbation are used interchangeably with the term of the GZM region.²



Source: R. Krzysztofik and J. Runge.

- 1 It is another problem to classify these two cities – many indexes are presented jointly for the city and the rural areas of the county.
- 2 After World War II, the term of GOP (Gornoslaski Okreg Przemyslowy/Upper-Silesian Industrial Region) was introduced. It, however, refers to the industrial region, not urban region. The GOP is the subject of industrial geography studies only.

Table 1. Population of cities in the Katowice Conurbation – core area 1955-2007

Cities	1955	1960	1965	1970	1975	1980	1985	1990	1995	2001	2005	2007
Katowice	199.9	270.3	286.0	305.0	343.7	355.1	363.3	366.8	351.5	338.0	317.2	312.2
Sosnowiec	124.4	131.7	139.8	145.0	195.7	246.1	256.5	259.4	247.5	239.8	226.0	222.6
Gliwice	134.8	150.2	163.4	172.0	197.2	197.5	209.7	214.2	213.4	208.4	199.5	197.4
Zabrze	182.8	190.9	198.5	197.0	203.7	196.0	198.4	205.0	201.3	196.5	191.2	189.0
Bytom	180.7	182.6	191.0	187.5	234.4	234.3	238.9	231.2	226.8	200.2	187.9	184.8
Ruda Slaska	38.9	131.7	141.2	143.0	149.6	159.1	166.1	171.0	165.9	153.0	146.6	144.6
Tychy	26.6	49.9	63.9	71.5	135.6	166.6	183.8	191.7	133.8	130.4	131.2	129.8
Dabrowa Gorn	41.2	55.5	60.4	61.7	79.8	141.4	138.1	136.9	130.4	129.7	130.1	128.8
Chorzow	141.4	146.6	153.7	151.9	156.3	150.1	142.0	131.9	125.2	119.5	114.7	113.7
Jaworzno	31.1	53.1	60.4	63.6	74.5	89.3	95.9	99.5	98.2	97.1	96.2	95.5
Myslowice	40.3	40.2	43.5	44.7	61.7	79.8	88.2	93.8	97.8	78.7	75.2	74.9
Siemianowice Sl.	59.4	62.4	66.1	67.7	72.1	77.1	81.4	81.1	78.1	76.1	72.7	71.6
Piekary Slaskie	26.6	32.2	35.6	36.4	62.1	64.3	68.7	68.5	67.0	65.0	59.7	59.1
Swietochlowice	56.3	57.4	58.1	57.8	58.4	58.7	60.7	60.5	59.6	58.2	55.3	54.5
The GZM - region	1284.4	1554.7	1661.6	1704.8	2024.8	2215.4	2291.7	2311.5	2196.5	2090.6	2003.5	1978.5

Source: R. Krzysztofik and J. Runge by Statistical Office in Katowice.

Demographics (population development and migration)

In 2008 the GZM was populated by 2 million inhabitants. It is about 300 thousand less than in 1990 (table 1). The demographic potential of a large group of 300 thousand inhabitants may be compared to the current population of Katowice - the capital of the region. At the same time, Bytom lost 20% of inhabitants and Sosnowiec 14%. From a different point of view, the population index in Bytom is at the same level as it was in 1960, and in the case of Sosnowiec, the one of 1978. The 1978 level characterizes the whole GZM region. The continuous decrease in the population of the region and the examined cities is one of the main factors describing the process of shrinkage. What are the demographic causes of the situation?

The first issue is the territorial aspect of continuous depopulation. Whereas the typical example of the phenomenon was the city of Chorzow at the end of the 1970s, at present, all the cities of the conurbation face the same reality. Secondly, it should be emphasized that 1982 marked the end of centuries-old migration inflow. It was the end of the process that carried fundamental importance in the population growth in the GZM region. Since the beginning of the 1980s, the inter-regional factors of population change have been of great meaning.

Thirdly, one should notice the decrease in the attractiveness of the region as a place of unlimited possibilities of finding employment in the industrial sector. The economic decline and problems in the housing market especially affected the cities with populations exceeding 100 thousand. These two factors extended and enhanced the decrease phase of the demographic cycle. The demographic crisis was taken advantage of by smaller towns and rural administrative units (Polish- gmina). The nineties constituted a period when the process of suburbanization around the conurbation core emerged. The situation was especially distinct in the eastern part of

the Katowice Conurbation. The fact is that the process of *urban sprawl* has been present in the Katowice region for only 20 years. 1993 was the first year when the administrative urban districts (Polish - gmina) of the Silesian province (in the 1990s - Katowice province) noted a drop in population, while a rise in population was recorded in the rural administrative districts. Another issue is the extraordinary situation of the Katowice Conurbation, taking into consideration the classical arrangement of urbanization that is: suburbanization zone A - suburbanization zone B, etc. The analysis of a concise number in population change in the period 1977-2006 reveals the existence of three city types (see figure 2 below).

The first type is the *centre of "depopulation crater"* as an inner-conurbation, demographic structure and it includes the cities of Bytom, Chorzow, Katowice, Zabrze, Bedzin, Tychy and Ruda Slaska. Each of these cities noticed a drop of over 10 thousand inhabitants, meaning that in 2007 the population was lower than in 1977, even though in the 1980s and 1990s the number was periodically higher. The inclusion of a particular city in the crater depended on a number of factors. In the case of Bytom or Chorzow, the examined demographic development factor appeared at the end of the 18th century and in the beginning of the 19th century and consisted in the connection of steel-working and coal-mining. The area of the cities was developed relatively quickly however, on the other hand, other towns and urbanized communes surrounded Bytom and Chorzow. The 19th century marked the period when the possibilities of development of the above mentioned towns, in the range of new housing quarters, were used up. A similar phenomenon is presently observed in Chorzow and Bytom, where the level of the natural decrease in population and migration is high (including international migration). The lack of other factors that might stimulate the development of urban space leads to an unfavourable demographic situation. The position of Katowice and Bedzin in the group appears surprising, nevertheless it should be noticed that regional (provincial) centres have always been characterized by a high index of rotating migration. On the other hand, the capital of the province has been generating a high percentage of migrant employment. In the case of Bedzin, two factors contributed to the population loss; the creation of the separate town of Wojkowice from Bedzin in 1993 and also a visible natural decrease and migration decrease.

Figure. 2. "A crater" of depopulation and two demographic zones in the core of the Katowice Conurbation



It is interesting that the hierarchy of cities in the Katowice Conurbation, in the case of population decrease, is independent from the question of indigenous inhabitants. It shows that the high percentage of indigenous inhabitants should correlate with a lower population index decrease as a result of phenomena like contacts or the feeling of belonging to a local community. In the presented region, the opposite happened. For instance, the city of Katowice with 50% indigenous inhabitants, is experiencing higher than expected population loss, considering the ratio per 1000 people. The city of Myslowice is facing a similar situation, while Gliwice presents the opposite.

The second zone is referred to as the *surroundings of depopulation "crater"* (Czeladz, Gliwice, Myslowice, Piekary Slaskie, Siemianowice Slaskie, Swietochlowice). The zone, in its western part more than the eastern part, shows a relatively higher index of population decrease. Similar to the *centre of the "crater,"* no connection is shown between the index of decrease and the percentage of indigenous inhabitants. The third group of cities in the Katowice Conurbation (Dabrowa Gornicza, Jaworzno, Sosnowiec), noted a population increase in the period of 1977-2006. The increase resulted from migration inflow in the 1970s and was brought about by several factors, including the construction of the biggest steelworks in Poland - *Huta Katowice*). Despite the fact of the rejuvenation of the demographic structure in the eastern part of the Katowice Conurbation, here also, a distinct natural decrease and migration decrease may be observed. In general, the differences between the model of urbanization phases and the real changes in the population in the GZM region primarily result from the effects of the administrative and economic decisions and secondly, from the regional character of the demographic cycle.

Economic Development

The most significant factor of urban decrease in the Katowice Conurbation was the economic depression that took place in the 1990s. The changes that followed were both quantitative (the decrease in the number of factories) as well as qualitative (the collapse of some branches of industry). The region had been famous for its coal-mining, metallurgy, coking industry, engineering industry and others. The socio-economic changes of the beginning of the 1990s acted as a condition test for specific branches of industry and factories. For instance, tables: 46, 47, 48 and figures 14 and 15 in the Annex present the scale of changes in coal-mining. Presently, only 8 traditional coal-mining centres have been preserved in the GZM region out of the former 14. There is only one coal mine in 5 cities, including Bytom and Sosnowiec. The decrease in employment in the coal-mining sector in Bytom and Sosnowiec is presented in tables 47 and 48. It is important to underline that the decrease in employment was noted in the whole sector, as well as, in individual coal mines. The importance of coal-mining in the 1980s and its lesser meaning in present times is reflected in the percentage of employment in the industry in both cities. The number of employed in coal-mining in 1988 was close to 50%, in comparison with the present index of only 12%.

Coal-mining is like a litmus paper of the traditional economy in the Katowice region. A similar situation takes place in metallurgy, the coking industry and engineering industry of the older type. The clothing industry has almost totally collapsed. For example, in Sosnowiec in 1988, three large clothing factories operated there, each employing over 1000 workers. All of these have closed. There have also been some positive effects brought about by economic and social changes. The most crucial was the establishment of the Katowice Special Economic Zone with factories and other economic enterprises in Dabrowa Gornicza, Gliwice, Katowice, Siemianowice Slaskie, Sosnowiec, Tychy, Zabrze and other towns of the Silesian Province. Unfortunately, Bytom is located outside the KSEZ network.

The benefits of new investment in the case of Sosnowiec are presented in table 52. The employment in all factories of the Sosnowiec part of the KSEZ network compensates for the number of miners in one closed coal mine in the examined city. It is significant to notice that in proximity to the KSEZ investments, appear other companies in Sosnowiec, such as Haerus Electronite (with Luxembourg capital) in the Narutowicza area or Hoermann (with German capital) in the Milowice area. It is also interesting that the special KSEZ zones act as development stimulus to the quarters connected with the so called new economic development, which was pointed out in table 51. Two factors played an important role here, namely the location of the KSEZ areas and the proximity of main (national) roads in the region (with the special role of double lane roads).

This factor should be significant for the northern suburbs of the city of Bytom in the future, and is connected with the building of the A1 motorway Southern Europe to Gdansk. The future motorway will intersect with national road no. 11, in the Stroszek quarter, and should stimulate the development of the quarter, as well as the whole city. Bytom and Sosnowiec have been on two different paths of development in the last decade. Coal-mining and other branches of traditional industries collapsed first in the eastern part of the Katowice Conurbation (The Dabrowa Basin subregion), including Sosnowiec. Enormous unemployment contributed to the fact that Sosnowiec and Dabrowa Gornicza were ranked in the group of cities with a high index of socio-economic problems, determined by the phenomenon. Relatively positive conditions for coal-mining and other traditional industries in the western part of the Katowice Conurbation, as well as the policy of local and central authorities have caused that new investments be located in Gliwice and partly in Zabrze. It must have been a mistake, according to the theory of *the path dependence* by Mahoney, that Bytom was excluded in the plans of the KSEZ zone. K. Gwosdz (2004 and unpublished materials of 2008) distinguished paths of dependence for the cities of the Katowice Conurbation. A compilation of the study is presented in table 2.

In the big cities of the Katowice Conurbation, one should notice a correlation between the level of socio-economic development and new investments concentrated mainly in industrial complexes. It would be a cliché to point out that the level of social development is determined by the economic condition. The details of the relationship are noticeable in the case of larger cities of the described region.

Table 2. Paths dependence of cities in the Katowice Conurbation since XIX to the beginning of XXI'st century

		MECHANISM		
		SELF-REINFORCING	REACTIVE	OTHER
EFFECT	POSITIVE	Katowice	Gliwice, Tychy, Sosnowiec	Tarnowskie Gory, Mikolow
	NEGATIVE	Piekary Slaskie, Ruda Slaska, Swietochlowice Siemianowice Slaskie, Dabrowa Gornicza, Jaworzno	Bytom, Myslowice	Zabrze, Chorzow

Source: Gwosdz, 2004, 2008.

Settlement System

The GZM region is seen as a “grate” of the Katowice Conurbation, as a poly-centric settlement form. The Conurbation emerged at the end of the 18th century as a consequence of the first wave of the industrialization process, and also as a political factor (the border of two countries - Poland and Prussia, later Russia and Prussia). Large scale urbanization and industrialization was highlighted in the 19th and in the beginning of the 20th century. The region was created by hundreds of coal mines, coal shafts and thousands of larger and smaller industrial plants from Gliwice to Dabrowa Gornicza. Another factor was the international competition between Prussia (Germany), Russia and the Austro-Hungarian Monarchy. “The Triangle of Three Emperors” (now in Sosnowiec and in Myslowice) was not just a symbolic point on the map of Europe in those times.

The industrial and coal-mining genesis of the region determined the typical poly-centric arrangement of the urbanized settlement network. The poly-centric character of the settlement system had its specific structures, both internal and external. There were a few exceptions including the cities founded in medieval times: Bytom and Gliwice and in the 19th century, newly-founded gateway cities: Katowice and Sosnowiec. The settlement arrangement of the region consisted of about one hundred quarters (settlements) centred around 30 administrative units: larger cities, towns and urbanized communes. It was one concise and homogeneous, single-function “block” of settlements. The administrative borders between particular units were practically invisible from a geographical point of view. A new phase of development took place in the 1980s and 1990s. New socio-economic conditions lead to a crack of the block along its administrative borders. A typical form of the so called technical conurbation was transformed into a mixed type: a technical conurbation (continuation of the former settlement structure) a poly-centric agglomeration (the role of Katowice, Gliwice, Sosnowiec and Tychy) and partly also a mono-centric agglomeration (the role of Katowice).

The development of cities in the Katowice region had been based on centrifugal force until the 1990s. Since then, one may observe an increase of connections conditioned by centripetal force. The development of cities like Katowice, Gliwice or Sosnowiec demonstrates the process in the best way. In the settlement structure of the Katowice Conurbation, phenomena of interurban competition, self-government, new ways of economic development, problem development, sustainable development and development of creative urban zones and others have been initiated. The last 20 years have proved to be years of playing for the highest stake, that is for dominance in the region, at various levels, and in different sub-regions. The initial effect of the game resulted in a new sub-regional division of the region into the Katowice sub-region, the Sosnowiec sub-region, the Tychy sub-region, the Gliwice sub-region and the Bytom sub-region. The area of new statistical sub-regions includes the Katowice Conurbation as well as some outer counties.

The region is divided, and every year each interurban competition is becoming more and more noticeable, however, city authorities undertake some joint actions towards activities aiming outside the region, drawing correct conclusions that the agglomerations of Wroclaw, Krakow, Poznan or Lodz pose real competition. The two examined cities of Bytom and Sosnowiec had had different spatial and functional arrangements until World War II. The urban space of Bytom is arranged similarly to Hoyt's *sector model of urban land use*, partly modified in Lawton's and Hopkinson's models. Both modifications point out the role of industrial factors in creating urban zones, especially in the 19th and in the first half of the 20th century. The Sosnowiec urban space is typical as of the *multiple nuclei theory of urban structure* by Harris and Ullman (Daniel, Hopkinson, 1989). In this case the spatial-functional zones develop around a number of quite separate discrete nuclei depend on the size of the city.

The former arrangement of space in Bytom and Sosnowiec was modified in the post-war socialist period. The city space, with the exception of central quarters and big block-settlements (Zagorze in Sosnowiec and Stroszek/Osiedle Gen. J. Zietka in Bytom), was homogeneous and mono-functional with simultaneously overlapping industrial and residential types. A new stage of development was initiated in the 1990s. The collapse of industry and coal-mining lead to the creation of space that referred to the pre-war space, based on the above mentioned models. It is important to mention that the proximity of Katowice had its impact on the creation of the spatial and functional structure of the western quarters of Sosnowiec. A new element in the spatial and functional structure of Sosnowiec, and to a certain degree, also in Bytom, is the linear-type structure of economic activities located along main roads and in the wasteland areas (new industries, logistics centres, specialized services, education, and shopping centres). Some of these develop simultaneously with new residential quarters (Jozefow – northern Zagorze in Sosnowiec). The new areas may be explained as a *tertiary business core* in P. Hall's model (2003), at the level of development described as initial or intermediate.

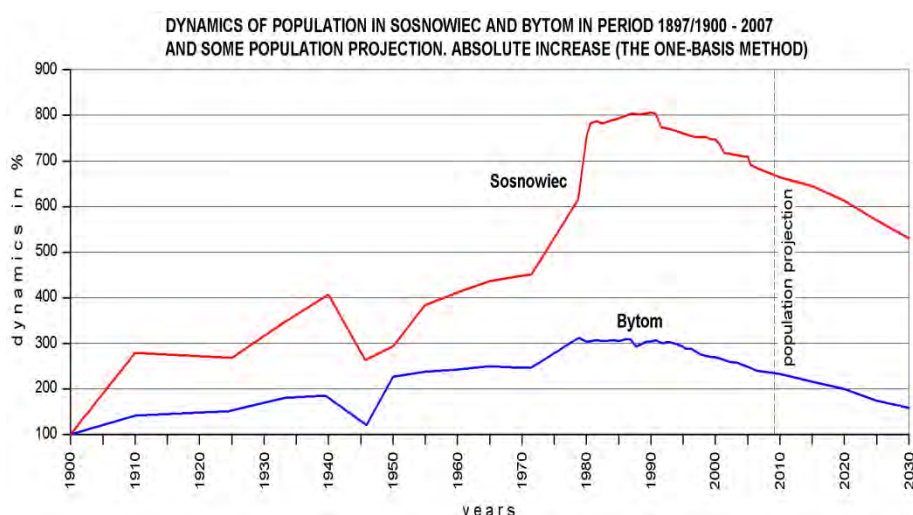
Other Factors

The issue that should be addressed in the case of the decline of urban and demographic status is the level of both central and metropolitan functions. In the national Polish and provincial hierarchy, the cities of the GZM-region present a low level of these functions. Table 53 and table 54 present the position of the sub-regional city of Gliwice as well as mezzo regional cities of Bytom and Sosnowiec. Although Gliwice is ranked very high, it belongs to the group of cities that scored fewer points or whose population is lesser. Sosnowiec and its ranking may be described in a comparable manner as far as the mezzo-regional centres are concerned. Bytom and other big cities of the GZM-region ranked surprisingly low. Bytom and Zabrze were classified with towns as much as ten times smaller, such as Klobuck or Skoczow. The reasons of the described situation have generated from a considerable density of cities and permanent limitation of its hinterlands. It is a factor of omnipresent spatial competition and weakness in creating and developing central and metropolitan functions.

2.2 Trajectories of Urban Shrinkage

Spatial-Temporal Patterns

Twenty years ago, D. Clark (1989) wrote: *“British cities are in decline. Population levels are falling, the industrial base is shrinking and the governmental and financial powers and autonomy of the city are being eroded”*. Five to ten years ago, an analogous situation happened in bigger cities of the Katowice region, as well as, all over Poland. The reasons for, and dependences of this feature, are described in the previous parts of the dissertation; this chapter presents the dynamics of the shrinkage process, both in the Katowice Conurbation and in the examined cities of Bytom and Sosnowiec. The demographic decline is shown in figure 3 below as well as in tables 13, 14, 15 and 16 in Annex. Table 3 below presents the depopulation of the inter-regional structure according to cities as basic statistical units.



Source: R. Krzysztofik and J. Runge.

In the first examined period 1897/1900-1910 a considerable population growth of about 37.9 % (28.9 thousand) in Bytom and 175.5 % (56.7 thousand) in Sosnowiec was observed. The noticeable growth of population was determined by the continued process of a sudden increase of industrialization and granting the city status of Sosnowiec. Civic rights were granted to Sosnowiec in 1902. Such an enormous growth of population has not happened again in the history of both cities. The next period that finished in the 1920s is characterized by a slow drop in the population development of Bytom and a small decrease in the case of Sosnowiec. It was obviously caused by the war period and political changes. Both cities suffered losses in population despite the fact that the front-line was remote. Sosnowiec faced an especially dramatic situation, where thousands of people left the city in the first months of the war in 1914 and only a part of them returned (table 4).

The depopulation came as a result of considerable external migrations that were not compensated for even by the decision to incorporate a few urbanized communes into Sosnowiec (1915), such as: Modrzejow, Milowice, Srodula, Debowa Gora and part of Zagorze, with a total population of approximately 10 thousand (table 4) and an area of 30.5 km². An important factor in those times was the translocation of the Polish-German border nearer Bytom and farther from Sosnowiec. In the case of Bytom, it presented a problem of economic and social hinterland losses (Bytom, at the time, was situated on a characteristic, political peninsula) as well as losses of an urban enclave (Schwartzwald – Czarny Las, presently Nowy Bytom – part of Ruda Slaska) which was incorporated into Poland after the division of Upper Silesia in the beginning of the 1920s. In the case of Sosnowiec, the shift of the border resulted in reduced employment in economic activities connected with gateway city functions at the time (border-guard, border-administration, wholesale, trade, transport, hotels and restaurants). A majority of Russians (employed in administration or in border-guard) and Germans (employed in industry) who had lived in the area until World War I, returned to the USSR (Russia) and Germany.

The inter-war period constituted a phase of population development in both described cities. Several factors of different nature played a role in this. For example, in Bytom, the first important issue was the incorporation of the strongly urbanized commune of Rozbark (Rosenberg) in 1927 and parts of Miechowice (Miechowicz) and Stolarzowice (Stollarzowicz) communes in 1928. At the time, Sosnowiec did not experience any administrative changes. In spite of the inter-war economic crisis in the world, the development of both cities can be described as quite positive. Development was noticed in coal-mining and other branches of industry, a fairly good situation was in service and trade. The percentage of population in Bytom equalled 17 % in the period of 1925-1933 and only 1.1 % in the period of 1933-1939. The total for the period of 1925-1939 reached 21.9 %. The population increased from 114.9 thousand in 1925 to 140.1 thousand in 1939. It should be emphasized that Bytom, in 1939, was the greatest (demographically) city of the Upper Silesia and the contemporary Katowice region.

World War II led to a catastrophe in population development both in Sosnowiec and in Bytom. In the period 1939-1946, Bytom lost 46.9 thousand inhabitants and Sosnowiec 51.7 thousand inhabitants. The reasons for the high depopulation in both examined cities were partly different and partly identical. The primary factor was common to both cities, and it was the ethnic aspect. The majority (no less than 60-65%) of the population in pre-war Bytom comprised of Germans. By the end of the war in 1945, most of them had left the city and emigrated westwards (to Germany). The migration waves could also be seen after 1946, until present. Another part of the population, Poles and Silesians, migrated and settled in Lower Silesia. Thousands (both Germans and Silesians) were deported by the Soviets to the USSR (Siberia).

Table 3. Dynamics of population in Bytom and Sosnowiec 1897/1900-2007 and some population projection

YEAR	BYTOM			SOSNOWIEC		
	POPULATION	DYNAMICS	DYNAMICS	POPULATION	DYNAMICS	DYNAMICS
1897S/1900B	76.2	-	100%	32.3	-	100
1910	1051	37.9%	137.9%	89.0	175.5%	275.5
1921S/1925B	114.9	9.3%	150.8%	86.5	-2.9%	267.8
1931S/1933B	138.5	20.5%	181.7%	109.0	26%	337.5
1939	140.1	0.1%	183.8%	129.6	18.9%	401.2
1946!!	93.2	-33.4%	122.3%	84.3	-34.9%	260.9
1950!!	174.0	86.7%	228.3%	96.4	14.3%	298.4
1955	180.7	3.8%	237.1%	124.4	29.0%	385.1
1960!!	182.6	0.1%	239.6%	131.7	5.9%	407.7
1965	191.0	0.4%	250.6%	139.8	6.1%	432.8
1970	187.5	-0.2%	246.1%	145.0	3.7%	448.9
1972	189.1	0.1%	248.2%	146.1	0.7%	452.3
1975!! (1978)	234.4*	23.9%	307.6%	197.9*	35.4%	612.7
1980	234.3	-0.1%	307.5%	246.1	24.4%	761.9
1981	237.8	1.5%	312.1%	251.9	2.4%	779.9
1982	238.2	0.1%	312.6%	255.9	1.6%	792.3
1983	238.1	-0.1%	312.5%	252.0	-1.5%	780.2
1984	239.2	0.1%	313.9%	255.0	1.2%	789.5
1985	238.9	-0.1%	313.5%	256.4	0.5%	793.8
1986	239.4	-0.1%	314.2%	258.1	0.7%	799.1
1987	239.8	0.1%	314.7%	259.9	0.7%	804.6
1988	227.9!!	-4.9%	299.1%	258.6	-0.5%	800.6
1989	229.8	0.1%	301.6%	259.3	-0.2%	802.8
1990	231.2	1%	303.4%	259.4	-0.1	803.1
1991	232.2	0.4%	304.7%	259.0	-0.2	801.8
1992	229.2	-1.1%	300.8%	251.3	-3.0%	778.0
1993	229.6	-0.2%	301.3%	250.4	-0.3%	775.2
1994	228.2	-0.6%	299.5%	248.9	-0.6%	770.6
1995	226.8	-0.6%	297.6%	247.5	-0.6%	766.2
1996	225.3	-0.4%	295.7%	246.3	-0.5%	762.5
1997	225.8	0.2%	296.3%	244.1	-0.9%	755.7
1998	205.6**	-8.9%	269.8%	244.1	0.0%	755.1
1999	203.8	-0.9%	267.4%	242.3	-0.7%	750.1
2000	201.9	-0.9%	264.9%	241.1	-0.5%	746.4
2001	200.2	-0.8%	262.7%	239.8	-0.5%	742.4
2002	192.6!!	-3.8%	252.7%	231.0	-3.7%	715.2
2003	191.1	-0.8%	250.8%	229.9	-0.5%	711.8
2004	189.5	-0.8%	248.7%	228.1	-0.8%	706.2

2005	187.9	-0.8%	246.5%	227.2	-0.4%	703.4
2006	186.5	-0.7%	244.7%	224.2	-1.3%	694.1
2007	184.8	-0.9%	242.5%	222.6	-0.7%	689.2
POPULATION	PROJECTION	POPULATION		PROJECTION		
2010	176.6	-4.4%	231.7%	219.0	-1.6%	678.0
2015	164.9	-6.6%	216.4%	209.2	-4.5%	647.7
2020	152.4	-7.6%	200.0%	197.8	-5.4%	612.4
2025	139.3	-8.6%	182.8%	184.6	-6.7%	571.5
2030	126.1	-9.5%	165.5%	170.3	-7.7%	527.5

*Explanations: !!-national census; *-correct of territory in plus; **-correct of territory in minus; B-Bytom, S-Sosnowiec.*

Source: R. Krzysztofik and J. Runge by Statistical Yearbook of Slaskie Voivodship, 2008; J. Ziolkowski, 1960 and A. Gawryszewski, 2005.

The ethnic factor was also noticeable in Sosnowiec. About 22 % (28.9 thousand in 1938) of population in Sosnowiec was comprised of Jews. At the end of 1943, the Nazis shot 10 thousand Jews in the Sosnowiec ghetto. Poles were deported to Germany in the years 1939-1940; the Nazis deported approximately 10 to 12 thousand Poles. Another factor that caused population changes in post-war Sosnowiec was migration to Upper Silesia, especially to Katowice. The statistics reveal that over 20 thousand inhabitants of Sosnowiec settled in the Upper-Silesian cities: Katowice, Gliwice, Bytom, Zabrze or Myslowice.

Table 4. Population of Sosnowiec in the period 1914-1916

Date	Total	Men	Women
01.01.1914	118.5	71.9	46.6
01.10.1914	51.8	24.6	27.2
01.09.1915	56.9	25.6	31.3
20.11.1916	69.9	33.4	36.5

Source: Ziolkowski, 1960, p. 204.

In the following period, 1946-1950 both cities experienced an increase in population. The population of Bytom grew from 93.2 to 174 thousand inhabitants, which was an increase of 86.7%, whereas the population of Sosnowiec rose by only 14.3 %, from 84.3 to 96.4 thousand. In the case of Bytom, it should be emphasized that the dynamic increase in the number of inhabitants depended on the fact that the index for 1946 presented the population in the medium stage of population exchange (Poles for Germans and German Silesians). The city's urban space, housing, and economic potential were prepared to inhabit about 150 thousand people within its borders. The index of the visible increase in general was close to the migration inflow.

Sosnowiec experienced a different situation. Low population increase came as the effect of a considerable migration outflow, which was balanced by a high birth rate. The next period could be characterized by unbalanced development of the migration index in Bytom; the population increased mainly due to the birth rate and administrative changes. The Bytom area expanded and incorporated new, strongly

urbanized communes of Lagiewniki, Bobrek-Karb, Chruszczow (Szombierki - since 1986) and Miechowice. Tab. 5 shows that the total increase in the case of Bytom reached only 3.8% and in Sosnowiec 29%. The high value for Sosnowiec reflected both the birth rate as well as the incorporation of new territories. The incorporation took place in 1953. Sosnowiec incorporated a very urbanized and industrialized commune of Niwka, with the settlements of: Dandowka, Bobrek, Bor and Jezor compromising the city's southernmost quarters.

If the population index is taken into account, in 1955, Bytom was the second city of the conurbation (table 13 in Annex) and Sosnowiec, the sixth and last, in the group of big cities (with a population exceeding 100 thousand inhabitants). The next two periods, 1955-1960 and 1960-1965, presented a balanced-out increase. The population of Bytom increased by 10 thousand inhabitants (1955-1965) and the population of Sosnowiec increased by 15 thousand inhabitants. Two factors contributed to the increase, namely the birth rate and migration inflow. It should be noted that the low level of population growth in Bytom in the period of 1955-1960 was conditioned by an important urban problem, that is, by a large urban crisis. The crisis was brought about by reasons of a high index of population density, a poor state of housing resources and also by mining damages.

In the 1950s, a "plan of de-agglomeration of the GOP-region" (here: the GZM-region) was prepared and later-on developed in the 1960s and 1970s. The mentioned plan of de-agglomeration was outlined, in a theoretical manner. The directions of activities introduced order and improvement as far as the depopulation of overcrowded, demolished and polluted cities and quarters were concerned. Bytom was the focus of the plan since it was the biggest city that required extensive modifications and re-urbanization. A new stage of development was seen in the 1970s. It was a time of economic and social redevelopment all over Poland, however, special conditions were provided for in the examined region due to the region's importance in the national economy, and probably the fact that the leader of the communist party, E. Gierek, was born in Sosnowiec, and emotionally attached to the Dabrowa Basin region (the eastern part of the conurbation, together with Sosnowiec).

The reforms by E. Gierek focused on four aspects of development: administrative, economic, spatial and the one examined here – the demographic one. All were present both in Bytom as well as in Sosnowiec. Administrative changes were initiated in 1973 and finished in 1975/1977. In the case of Bytom, the first administrative activities started in the neighbouring town of Radzionkow, which incorporated the commune of Sucha Gora (1973). Two years later, the town of Radzionkow, with its new borders, and also two urbanized communes of Stolarzowice and Gorniki, were incorporated into Bytom. An analogous model of administrative changes took place in Sosnowiec. At first, the mining town of Kazimierz Gorniczny incorporated the urbanized settlements of Maczki and Ostrowy Gornicze and the industrialized town of Porabka (in 1973). Two years later (in 1975), Sosnowiec incorporated the enlarged Kazimierz Gorniczny as well as two other mining towns of Klimontow and Zagorze.

All territorial changes were reflected in population indexes for Bytom and Sosnowiec (tab. 13 in Annex). In Bytom, the population increase in the period 1970-1980 reached about 25%, and it is important that over 20 % happened in the years 1973-1978. The increase of population in Sosnowiec, in the same period (1970-1980), amounted to about 68.4% and, about 35.5% in the period of 1970-1975. The latter period of increase resulted from the territorial changes described above. From the mid-1970s to the mid-1980s, Sosnowiec was a large “construction site”. New block settlements were erected in Srodula, Stary Sosnowiec, Pogon, Sielec and particularly in the so called “block-town” of Zagorze, which was already inhabited by about 40 thousand people in the beginning of the 1980s.

Block settlements in Bytom were constructed at the time in the district of Stroszek/Osiedle Gen. J. Zietka – the northern area of the city. It is a fact that the seventies was a period in the history of Bytom when the dynamics of population increase slowed down. Until the mid-1990s, the population oscillated between 230 and 240 thousand. The highest index was observed in 1987, when the population of Bytom equalled about 239.8 thousand. An interesting phenomenon in the case of Bytom, in the context of the Katowice Conurbation, was that the beginning of shrinkage process happened 10 years earlier. The cities within the Katowice Conurbation, such as Bytom, Siemianowice Slaskie, Sosnowiec and Swietochlowice were the ones where the depopulation process began the earliest. The city of Chorzow was, however, the first to experience depopulation, already in the 1970s. The five cities mentioned above have belonged to a group of centres with the highest population density, together, with a complex of unfavourable social and economic factors based on this rate.

In the following decade, the population index in Bytom reached about 225-230 thousand inhabitants. The temporary fluctuation of indexes that happened around 1988 were most likely linked to the method of population counting, based on the modified population projection of the municipal department in the previous and following years, while the rate for 1988 came from the *National Census (of Population and Dwelling Conditions)*. It can be assumed that the oscillating index for Sosnowiec at the same time was based on the same thesis. As far as the dynamics of population is concerned, the years 1997 and 2000 appeared to be the worst for Bytom in the last period. In 1997, the population suddenly approximated 200 thousand, and in 2000, this index was exceeded. The population loss in 1997 was a consequence of the fact that the town of Radzionkow separated from Bytom after twenty years. Independent from administrative changes, a considerable population decline happened within the examined cities. This unfavourable situation was brought about by both the migration index and the birth rate index.

Thereby, Bytom no longer qualified in the group of cities of GZM-region with a population exceeding 200 thousand. The same process was observed in Gliwice and Zabrze. Only two cities of the Conurbation, Katowice and Sosnowiec, have more than 200 thousand inhabitants. In the case of Sosnowiec, the dynamics of population decrease has been more evolutionary. As was mentioned above, the end of the 1980s marked the start of the period of population shrinkage. At the end of the 1990s,

some centrifugal trends were observed in Sosnowiec, too. Their effect was shown in the tendencies to separate Kazimierz Gorniczy from Sosnowiec. Finally, the quarter remained in the urban space of Sosnowiec. Both examples of separation trends in Radzionkow and Kazimierz Gorniczy came as a consequence of the socio-economic crisis of the 1990s, which especially affected big, industrial (post-industrial) cities.

Figure 4. Vacancy – housing area in the shrinking city of Bytom



Source: R. Krzysztofik and J. Runge.

In 2007, Bytom had a population of 184.8 thousand, while Sosnowiec 222.6 thousand. Every year the cities lose a few thousand inhabitants. The present index for Bytom is the same as it was in the beginning of the 1960s, and for Sosnowiec, as it was at the end of the 1970s. The decrease of population in 2007, in reference to the year when the population reached its highest level, reveals a 23% depression in Bytom and 14.4% in Sosnowiec. The population projection of the Statistical Office in Katowice for the next twenty years (table 14 in Annex) is very interesting, but at the same time, alarming. In the next two decades, the population of Bytom will shrink to the level of 126.1 thousand inhabitants, just as it was at the end of the 1920s! The data for Sosnowiec, with the projected population of 170.3 thousand in 2030, is not any better. The last time a similar index of population was noted in Sosnowiec was in the 1970s, before the incorporation of several mining-towns in the eastern part of the city and construction of big block settlements.

Dynamics

Population changes in the case of the GZM region, as well as the cities of Bytom and Sosnowiec, should be discussed in historical context. Two basic periods should be distinguished, that is the period of considerable increase (the end of the 19th century to the 1980s) and the period of a considerable decrease (the 1980s to the 2000s). Each of these periods may be subdivided, however, the population growth understood as natural increase differed by level in Bytom and in Sosnowiec (figure 4 and figure 5). The case of Bytom reveals that in the 1960s and 1970s (and partly also

in the 1950s), the city reached the peak of its possibilities as far as its population capacity. High population density steadily maintained the level of population at about 170 to 190 thousand. That created a statistics barrier but it was based on different factors of spatial, demographic and economic nature. The dynamics of population, understood as the natural increase for five-year periods, support these opinions. The index practically fluctuated around zero and no more than 4%, just like in the beginning of the 1970s. It can be reckoned that the city reached a kind of population stabilization.

Nevertheless, the process of stabilization in this situation indicated that in the context of the whole metropolitan region, Bytom constituted a shrinking city. The population rate in Bytom, in the total population of the Katowice Conurbation shrank year by year. In 1955, the city's share was 14%, and in 1970 it was only 11%. The decrease was significant if the fact that Bytom was one of the most important centres of the region is taken into consideration. Another index reflects the demographic distance between the first city of the Conurbation – Katowice and Bytom as the third one; while in 1955 the population of Katowice exceeded the population of Bytom only by 9.5 %, in 1970 it was already about 38.5 %.

The period mentioned above presented the stage when the described *depopulation crater* started to emerge. Its range comprised of a few cities from the central and northern part of the Conurbation: Bytom, Chorzow, Siemianowice Slaskie, Swietochlowice (partly, from 1955 to 1970, Ruda Slaska). For a long time Bytom and Chorzow were the symbols of depopulation in the case of the industrial region. The 1970s faced a dramatic population increase but it depended only on territorial incorporation of neighbouring towns. The nineties (1990-2001), in the case of Bytom, presented the period of a complete demographic depression. The decrease index was about 14.4 %. Except for the war-period, it was the highest rate of shrinkage in the modern history of the city. The process resulted from spatial changes (separation of Radzionkow), as well as a negative birth rate. The demographic decrease is continued in the third millennium. The last eight years (2001-2008) marked a decline of about 7.7 %. It is a very high value if one takes into consideration that the decade has not finished yet and there have been no territorial changes. Unfortunately the population projection reveals a further demographic depression. Its forecast dynamics will reach 32% in the period of 2007-2030.

Despite the fact that Sosnowiec has a similar genesis to Bytom, the trajectory of population growth after World War II, and before, were a little different. The two main periods of population changes – the stage of increase and the stage of decrease- were common. The reasons for that were presented above. Here, only the model of population growth should be highlighted. The first question focused on is the one of historical periods of considerable increase and decrease in the first half of the twentieth century. It is obvious that the numbers of population growth and depression were typical for war and post-war periods. The similarities between Bytom and Sosnowiec could be noticed especially in those periods.

As was mentioned, after World War II, Bytom reached a kind of population

maximum. Sosnowiec presented just the opposite. Each of the statistical five-year periods revealed the possibilities of further demographic development. And, just like in 1950-1955, the fact depended on territorial annexation (the total growth of 29%). However, the increase in the remaining periods was caused only by the birth rate. The high values of population growth subsided only at the end of the 1960s and in the beginning of the 1970s (3.7% in 1965-1970 and 0.7% in 1970-1972). The noticeable growth in the 1970s came as a result of territorial changes and the erection of new and extended block settlements in the "old Sosnowiec", as well as in new quarters (Zagorze mainly). The fact of a slow-down in the increase of population until the end of the 1980s is also worth mentioning. The values were not higher than 2% and later 1%. The peak of the demographic increase was reached in 1987 and then the population equalled 259.9 thousand. The population rate of Sosnowiec in relation to the total population in the GZM-region increased from 9.7% in 1955 to 11.2% in 1990.

Another factor, presenting the role of Sosnowiec on the population map of the region, was the reduced demographic distance between Katowice as the biggest city of the Conurbation and Sosnowiec. While in 1960 the population difference equalled about 105%, in 1990 it was only 42%. It should be highlighted that Sosnowiec gained an advantage over other cities of the Katowice Conurbation if the population rate is taken into consideration. The city was in the remote fifth position in relation to the matter in 1955-1960. Since 1980, Sosnowiec has become the second city of the Conurbation, and the third in the current province.

Population decrease in Sosnowiec started a few years later than in Bytom. It can be assumed that it happened in 1987. However, the average annual value of population decrease was at a similar level. In general, it was less than 1%. This trend is continued at present. It is a disadvantage that depopulation will increase in a comparable manner to Bytom. Even though the decrease index in the presented projection is lower than in Bytom, the demographic situation of Sosnowiec is alarming. According to the forecast of the Statistics Office in Katowice, in 2030 only 76.5% of its contemporary population will be living within the borders of the cities.

3. IMPACTS AND CONSEQUENCES OF URBAN SHRINKAGE

3.1. *Patterns of segregation and social cohesion*

The cities of the Katowice Conurbation had been quite homogeneous socially and economically until the beginning of the 1990s. Since then, new trajectories of social diversification have been initiated. The social and economic transformation has divided the cities of the Katowice Conurbation as well as the population and quarters within their borders. The main issue, with respect to social division and social exclusion, is the question of unemployment, and its types. This negative phenomenon, in the case of the studied Conurbation, also referred to as the region of traditional industry, has marked itself dramatically. It would not be exaggerated to state that the Katowice Conurbation has been condemned to having problems with unemployment (see figure 5). The discussed issue emerged in the region as early as in the beginning of the 1990s (table 5). The example of Bytom presented there, shows the progress in the unemployment index. The unemployment index in bigger cities of the GZM in 1995, approximated 10%. After a short period of unemployment decrease in the second half of the 1990s, a new wave of unemployment came in the beginning of the 2000s (tables 31, 32 and figure 10). Unfortunately, it was equally dramatic as the first one. Both waves of unemployment superimposed and created a catastrophe. Both Bytom and Sosnowiec are classified in the group of cities where unemployment took its toll. Bytom ranked third in the region, as far as unemployment was concerned (27.1% in 2003), and first among cities with population of 100 thousand or more.

In the case of Sosnowiec, the unemployment rate was lower, but the problem consisted of a higher concentration of unemployed in one commune, that was 22 thousand of its adult inhabitants. The primary issue was how to address the problem, and there were two ways of approaching the unfavourable phenomenon. The first one was to create new places of work and generally new economic enterprises. The other solution came in the form of temporary unemployment benefits. As far as the first solution was concerned, the primary function was served by new investments located in Sosnowiec, as a part of the Special Katowice Economic Zone. The inflow of new work places was quite visible, but happened only in Sosnowiec. Unfortunately, Bytom did not belong to the SKEZ structure and therefore compensation of new work places there was at a low level (see the proportions of long-term unemployment in table 6 and table 6a below).

Table 5. The beginning of the unemployment process in Bytom

Year	Registered unemployment rate (%)
1991	2.4
1992	4.4
1993	8.7
1994	11.4
1995	10.3
1996	11.1

Source: R. Krzysztofik and J. Runge by Statistical Office in Katowice.

In both cities, and also all over Poland, a system of unemployment benefits was created, also including special benefits, such as rent subsidies.

Table 6. Proportion of long-term unemployment in Bytom and Sosnowiec, 2000-2007

Bytom			Sosnowiec		
Registered unemployed persons		Registered unemployment rate	Registered unemployed persons		Registered unemployment rate
Total	Long-term (% of total)		Total	Long-term (% of total)	
2000					
13.4	41.7	18.2	14.9	41.0	17.0
2007					
8.9	43.4	15.9	9.9	37.3	12.0
DYNAMICS 2000-2007					
-4.5	+1.7	-2.3	-5.0	-3.7	-5.0

Source: R. Krzysztofik and J. Runge by Statistics Office in Katowice.

Table 6a. Basic data on registered unemployed persons in 2007

Specification	Registered unemployed persons					Registered unemployment rate in %	Newly registered unemployed persons	Persons removed from unemployment rolls	Job offers	
	Total	Of total							During the year	As of 31 XII 2007
		Women	Previously not employed	Terminated for company reasons	Possessing benefit rights					
Bytom	8935	5661	1865	99	1019	15.9	13739	17145	3024	154
Dabrowa Gorn	5190	3128	1015	104	596	12.6	9440	12196	972	49
Gliwice	6906	4202	1918	128	734	11.6	10727	13014	1056	1059
Jaworzno	5933	3764	1819	466	521	6.2	9412	12164	9024	780
Katowice	3968	2682	893	328	329	13.0	6481	7283	1368	57
Myslowice	6826	3967	1057	151	734	3.3	15096	19080	7272	373
Piekary Slaskie	2700	1777	623	224	239	9.1	4836	5751	1524	278
Ruda Slaska	2645	1611	759	143	208	14.5	4289	4874	6840	1555
Siemianowice	3196	2105	721	48	367	6.8	8818	10737	2112	335
Sosnowiec	2789	1683	561	84	581	13.6	8079	9251	2436	215
Swietochlowice	9854	5876	3774	517	1215	12.0	18358	21671	4128	894
Tychy	1743	1072	309	22	308	12.8	4521	5840	6960	405
Zabrze	3091	1954	526	127	468	5.2	6946	8822	4764	1293
	7897	5301	1664	782	877	13.0	11278	15120	8196	609

Source: R. Krzysztofik and J. Runge by Statistical Office in Katowice.

Activities directed at specialized professional groups were a very important element of the aid programme, especially in the case of miners and steelworkers. The most crucial, though, were the special restructuring programmes in the mining sector, and professional elicitation for miners who had lost their jobs. The fundamental assumptions of the programmes were: early retirement, translocation of miners from the closed down coal mines to others and the most controversial question of a one-time golden handshake in the amount of even 15 to 20 thousand Euro. Another

programme focused on granting special funds for miners who started new business activities. Its effects though, were not impressive.

The problem of unemployment was also solved by emigration. In the western and central part of the region (e.g. Bytom) people emigrated to Germany and the Netherlands, while in the eastern part (e.g. Sosnowiec) to Great Britain and Ireland. There are no credible statistics to refer to specific numbers of emigrants. Some researchers believe that the number of emigrants from Sosnowiec to the British Isles exceeded 5000 people and another 2 to 3 thousand emigrated to developing Polish agglomerations such as Warsaw, Krakow or Wroclaw.

Figure 5. Former clothing plant „Wanda” and new block-settlement „Andersa-Tabelna” in Sosnowiec



Source: R. Krzysztofik and J. Runge.

A very popular trend among the dismissed workers who resided in factory hostels was to return to their birthplace or a place of growing up (especially to rural areas). The problem of unemployment is clearly visible in the aspect of territorial structure of the cities. Sosnowiec presents a good example. The first issue is the fact of high unemployment in the quarters that had faced social problems even before the transformation of the beginning of the 1990s. The problems may be defined as alcoholism, so called disguised unemployment, a high percentage of the population with only primary education, and substandard housing conditions. In the 1990s, those places were complemented by the quarters inhabited by employees of closed down factories.

In the case of Sosnowiec, the quarters of Polnoc, Bobrek, Ludmila-Staszic (socialist-time traditions) or Kazimierz Gorniczy, Porabka, and Zawodzie registered the highest level of unemployment (see figure 11). The lowest indexes were observed in Klimontow, Debowa Gora, Srodmiescie, Zagorze, and Niwka-Modrzejow. It should also be noted that in the quarters providing a sufficient number of work places, and with a prevalence of single-family houses, the unemployment rate is relatively the

lowest. Some quarters, predominately mining settlements, present an interesting exception (e.g. Klimontow, Niwka-Modrzejow, partly Zagorze), as areas with both a low unemployment rate and simultaneously with a low employment index. Particularly dramatic was the unemployment of young people. A solution was to become educated, therefore acquiring additional time to find employment and improve one's position on the job market. In the case of Sosnowiec and also other cities of the region, some programmes aimed at the question of social cohesion for the quarters that are in the least favourable situation (figure 11 in Annex) function there.

3.2. Business and employment

The process of depopulation in the Katowice Conurbation was conditioned by the severe economic crises of the 1990s and 2000s. As mentioned above, in the 1990s, both cities and also almost the whole Conurbation experienced a slump in its economic base and a lot of industrial plants were closed down. The restructuring process affected the services as well. Thousands of people lost their jobs in the Polish "employment Eldorado." It might come as a shock for Silesians today that in Swietochlowice, the number of employed in agriculture is the same as the number of employed in coal mining. And it is beyond imagination that in Chorzow, three times as many people are employed in agriculture as in coal mining. It is surprising that in the townscape of the eastern part of the Conurbation, in the Zagłębie Dabrowskie, currently only one coal mine is working, whereas 15 years ago, there were as many as 8. The first and absolutely foreign effect of restructuring was the phenomenon of unemployment. Tables 31 and 32 in the Annex and table 6b present the increase of unemployment in the cities of the region and in particular, quarters of both examined cities. In the case of the latter, the attention is brought to the inversely proportional employment rate, in reference to the unemployment rate. As far as the unemployment rate was concerned, the post-industrial, working class districts with social problems were in the worst situation. They are the ones in which the phenomenon of shrinkage is the most noticeable. The dynamics of the unemployment rate, in the case of Bytom, that took place in the first phase of the problematic period is presented in table 5.

A high unemployment index generated other unfavourable social and economic problems and also negative opinions regarding the possibilities of stability and development in the future. Tab. 50 shows the size of the destruction of the former economic base in Sosnowiec. Almost the whole industrial sector collapsed and new investments only partially fulfilled the empty space on the local job market. There were several ways of approaching new problems. In Bytom, the old and traditional industries were sustained while in Sosnowiec, new industries within the Katowice Special Economic Zone (the KSEZ) appeared. The city authorities in Sosnowiec proved to be very creative. New investments alleviated the negative effects of industry restructuring and created a new path for the future. It should also be noticed that factories located within the KSEZ started to attract new companies in the vicinity of the zone (Haerus Electronite, Magneti Marelli, CEBI Poland).

Table 6b. Employment and unemployment rate by quarters in Bytom and Sosnowiec in 2002

Quarters	Employment rate	Unemployment rate
Bytom	%	
Sucha Gora	38.1	22.9
Gorniki	34.4	24.3
Stolarzowice	39.6	20.8
Stroszek-Os. Gen. J. Zietka	39.6	23.1
Miechowice	42.4	22.6
Karb	34.3	30.7
Bobrek	26.6	49.3
Srod miescie	35.8	28.2
Rozbark	33.3	31.1
Szombierki	38.3	23.9
Lagiewniki	36.7	26.3
Sosnowiec	%	
Milowice	36.3	25.0
Pogon	37.8	25.3
Polnoc	35.1	28.5
Sielec-Srodula	37.3	22.9
Zagorze	44.6	23.6
Stary Sosnowiec	44.5	21.2
Srodula	50.1	24.7
Klimontow-Dandowka	35.7	22.1
Kazimierz Gorniczny	33.1	25.3
Ostrowy Gornicze	37.1	21.7
Porabka	25.9	26.6
Maczki	39.6	24.8
Niwka	39.0	24.2

Source: R. Krzysztofik and J. Runge by Statistical Office in Katowice.

Unfortunately, in Bytom, the situation was far less promising. New and bigger investments took place well away from the city. This was due to the municipal and regional politics and also to mining damages, but above all, due to the fact that the city was excluded from the special investment zones of the KSEZ. However, new economic enterprises, mainly small business, appeared in Bytom as well. Another effect of the described phenomenon was the change in city functions. The industrial and industrial-service model of urban functions that had been characteristic in the 1970s and 1980s, was replaced by a services and service-industrial model in the 1990s and 2000s (see tables: 40, 41, 42, 43, 44 and 45 as well as figure 13). The decrease in workplaces in the industrial sector was balanced by new places of work in trade (new shopping centres), market services and private transportation.

Nevertheless, the inflow of new investments and development of services did not balance the problem of unemployment or other problems such as low salaries. Low salaries are characteristic for both industry and services in Bytom, as well as in

Sosnowiec, but also in other cities of the Conurbation (tables 38 and 39 as well as figure 12). Typical salaries, after deductions, amount to 1000-1500 PLN (240-370 Euro). Paradoxically, the highest salaries are in the sector of traditional industries, such as coal mining, metallurgy or energy. Limited salaries bring consequences in the form of low buying power. Bytom and Sosnowiec clearly differ on the job market as far as commuting is concerned. In spite of the geographical proximity of Sosnowiec to the biggest job market of the centre – Katowice, not less than 30 thousand (estimate) people living in Sosnowiec work in Katowice. Of course, many Bytom inhabitants found employment in Katowice, but the number of commuters is lower – about 5-10 thousand (estimate).

3.3. Social infrastructure and education

The first problem encountered in the studies of shrinking cities is the question of social conditioning and the social consequences of the process. The question is which phenomenon came first? In the case of the Katowice Conurbation, the answer is between the problems of the economic transformation of the 1990s, on one hand, and some demographic processes lasting since the 1970s. It is a fact that all of the cities of the region experienced a dramatic demographic inflow in the 1970s and part of the 1980s. Population was also excessively dependent on the local economic potential. Several hundred thousand people lived in a simple system: place of work in traditional industry - place of residence in a new block settlement.

Trajectories of population growth have been presented at a different point in the dissertation but it should be restated that a considerable demographic growth strongly channelled the character of social structures. Table 29 shows that the dynamic inflow of twenty- and thirty-year-olds in the 1970s, have transformed into today's socio-economic groups of retirement age elderly. The birth-rate increase in the 1970s and 1980s lead to the fact that the birth-rate index was, in most cities, at its highest level. Unfortunately, this positive phenomenon has a negative effect on present times; now these groups of young people are affected by unemployment.

The economic depression of 1990s, as well as some independent demographic processes, changed many typical elements of social structure. The first change referred to the family model: the popular model of the 1980s *2 plus 2* has been replaced by *2 + 1* or *2 + 0*. Another fact is that women get pregnant for the first time about 5-7 years later than before that is at the age of 27 to 29. On the other hand, this issue has resulted in an increase of the part of the population with higher education diplomas. The most popular path of life has become the one of primary school, secondary school, university or college, a few years of “free living” and finally starting a family. However, every year the number of cohabiting couples, as well as singles, is growing. The data reflecting the growth in the number of singles in the cities researched, between 1988 and 2002, is startling and spectacular (see table 7).

Table 7. Share of singles (aged 20-39) as well as one-person households in Bytom and in Sosnowiec, 1988-2002

Cities	Bytom		Sosnowiec	
Years	1988	2002	1988	2002
A) Number of population in matrimony aged 20-39	54,111	28,830	66,119	35,584
B) Number of singles aged 20-39	17,570	20,636	18,722	28,087
Share of singles A/B (in %)	32.5	72	28	79
Number of one-person households (economically active population only)	8,567	8,324	8,120	8,324
Total number of households (economically active population only)	63,693	43,419	71,551	28,325
Share of one-person households (economically active population only) in total	13.4	19.2	11.3	29.4

Source: R. Krzysztofik and J. Runge by Statistics Office in Katowice.

The increase of number of children in single-parent families is also visible. For instance, more than 15.5 thousand (24.2%) children lived in such families in Bytom and more than 17.5 thousand (24.1%) in Sosnowiec (2002). This situation presents a novelty for the traditional society of the Upper Silesia (Bytom) where tradition, religion and conservative views have always been powerful. The problems of economic groups of population, as well as the dependency rate in Bytom and in Sosnowiec are shown in table 29. Conclusions are not optimistic. The presented structures are partly based on the population projection. Of course, the dependency rate for 2007 was lower than in 2001, but if you take into consideration its structure, it was not quite positive – namely, the relations between the youth dependency rate and the old-age dependency rate. A clearly visible share of a young population was the assumption of further demographic development. The contemporary structure and economic limitations in both described cities mean that the projection is not optimistic. The share of young people as the future of local society is characterized in tab.7. It can be observed that the number of schools, as well as kindergartens, has been in decrease since the end of the 1980s. The case of Bytom is representative for the problem of shrinking cities of the Katowice Conurbation. The most alarming, however, is the decreased number of pupils, especially in primary schools, in the period of 2001 to 2007 – about 26% in Bytom and about 28% in Sosnowiec (table 30 and figure 18 in Annex).

One element, of the elements studied in reference to social infrastructure, is at quite a good level, and it is the number of hospital beds and the number of doctors per 10,000 inhabitants. It should be emphasised, however, with every year, the health service is more and more burdened by groups of older people and it may be assumed that the tendency will increase. Private healthcare providers are only a temporary solution to the problem (table 30 and figure 19 in Annex).

3.4. Housing

Housing areas deteriorate independent of place, time, level of development or other natural and socio-economic factors. The worst situation is when the city is found in a

socio-economic and spatial crisis without any possibilities to return to the positive path of development. The situation becomes more extreme in view of a superimposed demographic crisis. Shrinking cities define this type of settlement. The cities of the Katowice Conurbation – Bytom and Sosnowiec - constitute examples of such centres. It should be underlined, though, that the situation of each is different. The core of the differences lie in the fact that the majority of the housing area in Bytom dates back to the 19th and 20th centuries, whereas for Sosnowiec, the second half of the 20th century. A crucial role in Sosnowiec is played by big block settlements from the 1970s and the 1980s. In Bytom, there are no districts with block settlements dominating the townscape, except for Stroszek/Osiedle Gen. J. Zietka and partly, Szombierki.

There are two main problems in the area of housing in the described cities and they are also common for other cities of the Conurbation. The first lies in the fact that the low-quality, old post-industrial settlements are very costly to revitalize and, the second, refers to mining damages, mainly in Bytom (see figure 7). The effects are visible in statistics – in spite of the construction of new houses and blocks, the number of housing units has decreased in the city by about 7 thousands (table 56). The problem of housing vacancies in Bytom is continually growing, i.e. there are more problems concerning the general technical state of buildings, especially in the central district, where the prevailing strategy of activities has consisted in demolition. On the border of the Karb district one may find the whole urban quarters with as much as 60-90% of demolished buildings. Replacements and so called "fillings" are scarce. The bad technical condition of buildings in the city is caused by mining damages and their secondary consequences. The financial resources in the municipal budget meant for remodelling and securing buildings are insufficient.

A positive aspect is that the average living area of housing units in flats and houses as well as a rate of number of persons per 1 dwelling have risen since the 1970s and the 1980s in both cities (see tab. 11a). In Bytom it was about 3 m² between 1988 and 2007 and in Sosnowiec - about 4.5 m². The second index reflects the number of about 0.4 person in Bytom and Sosnowiec. This process was independent from the demolition of old and substandard buildings from the 1970s. For example, in the 1970s, the whole quarter of Sielec, in Sosnowiec, was torn down, and only a short street with historical buildings, such as a castle, church or a power station were saved.

Tab. 11a (58). Number of persons per 1 dwelling in cities of the GZM-region, 1988-2008

Cities	Number of persons per 1 dwelling		
	1988	2001	2008
Bytom	2.83	2.73	2.56
Chorzow	2.84	2.32	2.26
Dabrowa Gorn.	2.95	2.61	2.57
Gliwice	2.97	2.79	2.63
Jaworzno	3.29	3.05	2.87
Katowice	2.73	2.42	2.34
Myslowice	3.12	2.96	2.76

Piekary Slaskie	2.95	2.77	2.54
Ruda Slaska	2.92	2.62	2.55
Siemianowice Sl.	2.99	2.49	2.39
Sosnowie	2.90	2.62	2.45
Swietochlowice	2.67	2.52	2.49
Tychy	3.40	2.95	2.81
Zabrze	2.94	2.85	2.81

Source: R. Krzysztofik and J. Runge by Statistical Office in Katowice.

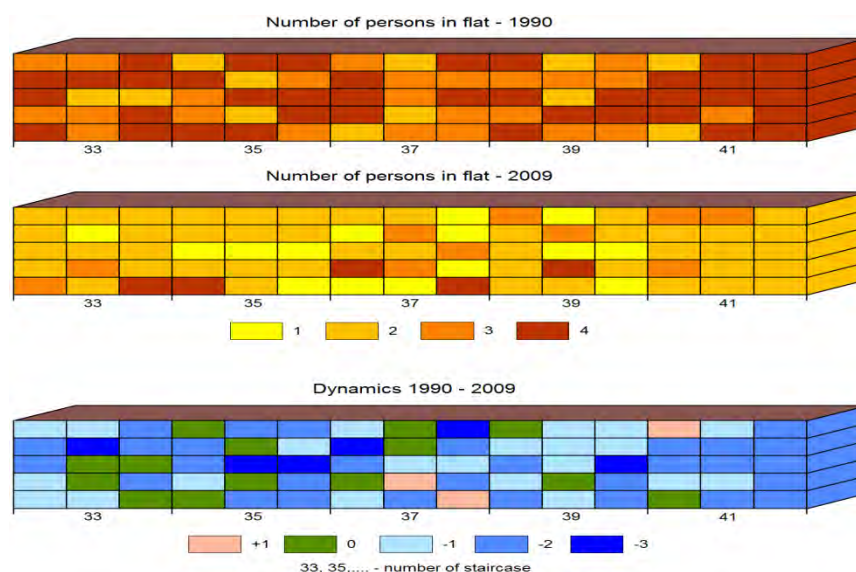
Figure 7. Tilting of buildings as an effect of mining damages in Bytom



Source: R. Krzysztofik and J. Runge.

A national demographic problem all over Poland, including the examined region, is the issue of the decreasing average number of persons living in a flat or a house (figure 8 below and tables: 57, 58A, 58B, and 58C in Annex). Year after year, the percentage of one-person households grows. It must be pointed out that these are households run by elderly people with limited financial capabilities (table 59). A visible, high index of social groups, consisting of the elderly and the poor, creates a problem for the revitalization of housing areas. The possibility of municipal budgets and housing associations are limited as well.

Figure 8. The issue of shrinking cities is simultaneous with the issue of shrinking blocks. An example of such is a block of flats in Sosnowiec-Dandowka that was constructed and inhabited in 1973-1974.



Source: R. Krzysztofik and J. Runge.

Housing vacancy does not pose a problem – the index is lower than 1%, however, periodically, in Bytom, it amounts to 2-3%. The low index comes as a natural consequence of changes on the housing market as an effect of demographic processes (table 11). In the case of Bytom, the higher index of vacancy houses is two-thirds caused by the effects of mining damages. The statistics reflect the municipal housing market. As far as the private housing market is concerned, vacancies do not make up more than 3-5%, generally fewer than 2%. Low rates of vacancy housing are conditioned by low prices of flats offered for rent and for sale. The purchase price of a square metre, in case of flats, is similar in both cities. It varies from PLN 2500 (610 Euro) to PLN 3500 (850 Euro) in Bytom and from PLN 3000 (730 Euro) to PLN 3800 (920 Euro) in Sosnowiec. The most expensive city of the region is Katowice, with prices from PLN 3500 (850 Euro) to PLN 4800 (1150 Euro) per square metre. In Warsaw, the prices start at PLN 8000 (2000 Euro). The presented prices show the difference in the cost of living between an interesting and developing city, and problematic, shrinking cities. Technical conditions of the buildings, or other factors, have secondary importance.

Table 11. Vacancy-Housing in Bytom and in Sosnowiec, 2008

Year	Bytom		Sosnowiec	
	Total	In bad technical condition	Total	In bad technical condition
2008	1205 (6.7%)*	955	189 (1.6%)*	0

Explanations: *- municipal dwelling stocks only.

Source: Municipal Offices in Bytom and in Sosnowiec.

An indirect method used in the study was the analysis of migrant outflow from the cities of the Katowice Conurbation to rural areas, and research performed in the suburban commune of Psary, located 10 km from Sosnowiec, and 15 km from Bytom [Adamek, 2009]. It should be noticed that there are a lot of “inner suburban zones” in Sosnowiec, such as Nowy Klimontow, Ostrowy Gornicze, Maczki, Jozefow and two in Bytom: Stolarzowice and Sucha Gora (see fig. 6, 7, and 8). The potential migrants decide to settle in the parts of cities with beautiful townscape and in neighbouring towns like Tarnowskie Gory, near Bytom, or Dabrowa Gornicza or Bedzin, near Sosnowiec. Tables 24, 25 and 26 point out those migrants prefer urban areas. The outer zone of the Katowice Conurbation is not as popular as other outer zones are for big agglomerations. The Beskids Mountains and Jurassic Landscape Park pose a serious threat to the surroundings of the agglomeration core.

3.5. Technical Infrastructure

In the process of city shrinkage it is important to examine the conditions of their technical infrastructure. Ultimately, fewer and fewer inhabitants use the usually developing urban infrastructure. This presents a very convenient situation for city dwellers, but the maintenance of infrastructure creates a financial burden for a municipal budget. Some budgets are not under the influence of municipal budgets and recently have become quite profitable (gas, electricity). However, a lower number of inhabitants results in a constant increase in the gas, electricity or water fees. The changes of infrastructure and its structure are presented in table 8. On the other hand, the increase in energy usage and modernization of the infrastructure connected with it is quite noticeable. In the case of urban areas, the second issue poses an economic challenge.

It should be mentioned here that one of the largest projects of building a sewage system is to be developed by building the Bobrek sewerage collector in the southern and eastern part of Sosnowiec. This investment should be helpful in dealing with all the sewage problems in Sosnowiec, and also in the western quarters of the neighbouring cities of Katowice and Myslowice. The most important problem of the examined cities is their public transport and transportation network. Even though the index for the transport network density is high, the primary difficulty lies in the obsolete network and old vehicles. The bus transportation system is run by KZK GOP and also by smaller transportation companies. The system is not coherent, especially when the system of regional rail is taken into account. In both examined cities, the public transportation system is based mainly on buses and trams. The length of both types of transport is presented in table 9.

The first issue to be commented on is the one of a shrinking public transport system. The statistics show the number of bus connections and trams falling by only a few percent. The trend to use private cars has resulted in a slump in the number of passengers (approximately by 30%). The fact is that the passengers mainly consist of the elderly and students. They enjoy special discounts, therefore, increasing the

demand for transport subsidies. It is astonishing that there exists only one transportation line in the Katowice Conurbation that brings profits, namely bus line no. 912 in Katowice.

Table 8. Supply structure in Bytom and in Sosnowiec, 1988-2007

YEAR	BYTOM				SOSNOWIEC			
	Gas-line	Water-line	Sewerage	Electricity	Gas-line	Water-line	Sewerage	Electricity
1988	180.0km -	304 km 149 m ³ /c.	209.9 km -	662.6 kWh per capita	192.8 km -	389.8 km 152,5 m ³ /c.	243.7 km -	521 kWh per capita
1996	314.8km 215.8 m ³ /cap.	337,7 79.4 m ³ /c.	226.3km -	534.3 kWh per capita	318,1km 263.1 m ³ /cap.	436.9 59.7 m ³ /c.	292.3km -	571.0 kWh per capita
2001	281.5 km 84.1 m ³ /cap.	311.3 km 51.8 m ³ /c.	220.4 km -	-	379.7 km 93,3m ³ /cap.	430.8 km 41.3 m ³ /c.	357.2 km -	-
2007	286.4 km 90 m ³ /cap.	310.8 km 31 m ³ /c.	236.5 km -	1755.2 kWh per capita	385.2 km 89 m ³ /cap.	432.6 km 37 m ³ /c.	295.7 km -	1684 kWh per capita

*Explanation: * - th. t : thousand ton; c. and cap. - capita.*

Source: R. Krzysztofik and J. Runge by Statistics Office in Katowice.

Table 9. Length of public transport systems in Bytom and in Sosnowiec, 2008/2009

Type of transport	Bytom	Sosnowiec
Length of roads with bus-transportation (km)	93	170
Length of tram network (km)	98	46

Source: R. Krzysztofik and J. Runge.

The low number of passengers as well as low income index for this kind of economic activity have recently lead to the liquidation of bus and tram routes. This process is very visible in the case of Bytom, where some tram routes (no. 8, no. 31, no. 32, no. 33 and no. 34) have been closed in the last two decades. Route no. 27, in Sosnowiec is to be shortened, while route no. 15, to the eastern part of Zagorze, is to be extended to the biggest residential quarter in Sosnowiec. Another issue is the bad condition of the regional rail system as an important means of metropolitan transport. A lot of popular train routes have been liquidated and this has intensified the problems of interurban accessibility. The role of the railway decreased especially in Bytom, which is located outside the main rail route of the Conurbation: Dabrowa Gorn. – Sosnowiec – Katowice – Chorzow – Ruda Slaska – Zabrze – Gliwice.

It is important to note that there are no problems with rebuilding the technical infrastructure connected with supply activities neither in Bytom nor in Sosnowiec. Municipal authorities view the enlargement of technical infrastructure as an essential element of urban development. The case of the KSEZ's investment areas in Sosnowiec, where the city finances the whole technical infrastructure and local roads to improve conditions for investors to make their location decisions (last investments by the Narutowicza, the Mikolajczyka and the Dandowka Complexes of the Katowice Special Economic Zone), presents a good example. The most serious problem in the case of technical infrastructure is a high index of expenditures caused by mining damages. Compensation for damages is only part of the actual costs of harmful mining activities.

3.6. Land Use and Environmental Quality

The Katowice region is one of the most degraded industrial areas in the Central-Eastern Europe. This issue concerns problems such as land use, emission of particulates and gases, and waste water and wasteland. It should be noticed that the restructuring of industry and coal mining (limitation of production, liquidation of industrial plants, reduction of pollution) caused an improvement in environmental conditions (see table 10). It is quite noticeable in the case of particulates emissions and heavy metal pollution. The situation in Bytom and Sosnowiec is similar to other big cities in Poland in respect to this matter. However, there are some exceptions – one of them is the problem of coal mining damages (soil settlement) in Bytom and the eastern part of Sosnowiec, or the issue of wastelands (due to coal mining and industry) and brownfields (see table 10a).

Table 10. Emission of air pollutants and generated waste-land

YEAR	BYTOM				SOSNOWIEC			
	Particulates	Gases	SO2	Waste-lands	Particulates	Gases	SO2	Waste-lands
1988	18.4 t/km ²	62.6 t/km ²	10.1 t/km ²	19999 th. t*	2.3 t/km ²	7.9 t/km ²	28 t/km ²	1008 th. t
1996	31.8 t/km ²	120 t/km ²	6 t/km ²	52815 th. t	0.7 t/km ²	2.1 t/km ²	0.1 t/km ²	269.4 th. t
2001	12.5 t/km ²	135 t/km ²	-	461.4 th. t	0.7 t/km ²	16.0 t/km ²	-	27.8 th. t
2007	7.8 t/km ²	60 t/km ²	36.8 t/km ²	408.7 th. t	1.5 t/km ²	12.1 t/km ²	5.0 t/km ²	122.3 th. t

*Explanation: * - th. t : thousands ton.*

Source: R. Krzysztofik and J. Runge by Statistical Office in Katowice.

All of these elements create a negative image and, therefore, a negative impression on the potential migrants, as well as investors, especially those with foreign capital. However, the specificity of new investments in Sosnowiec reveals that they are

located mainly in the brownfields. Nevertheless, all the industrial plants are located in areas with low rates of soil settlement. The worst situation, in reference to the problem, is present in Bytom. It is a result of earthquakes and sinking ground, too. The rates of soil settlement in Bytom amount from 4-7 m in its central quarters to 16 m in its western quarters.

Table 10a. Degraded lands in Bytom and in Sosnowiec, 1996 and 2001

YEAR	BYTOM		SOSNOWIEC	
	Degraded lands (ha)	Rehabilitated lands (ha)	Degraded lands (ha)	Rehabilitated lands (ha)
1996	383.2	2.4	551.3	33.3
2001	223.8	22.4	477	4.1

Source: R. Krzysztofik and J. Runge by Statistical Office in Katowice.

Bytom's quarter of Bobrek, in the 1990s, was a symbol of a total ecological disaster, similar to Szopienice, in Katowice, and the eastern part of Zabrze. The degradation was environmental as well as social and spatial. Social and spatial problems have prevailed until present times. Present is the gradual process of vegetation on brownfields in the former industrial areas. Another issue is created by areas with high noise pollution. Both investigated cities have not yet created special "noise maps". They should be completed in the next 2-3 years. But, it is obvious that the highest rate of noise pollution is observed along main roads and also in proximity of big industrial plants. The situation presents a novelty in comparison to the 1980s. Car traffic has increased tenfold, whereas the industrial production has decreased several times.

The worst situation, as far as the matter is concerned, is in Sosnowiec (the northern parts of Pogon, Srodula, Stary Sosnowiec, Zagorze; the eastern part of Zagorze, Klimotow, Niwka and Dandowka; the southern part of Niwka and the central part of Sielec). On the other hand, the centre of Sosnowiec is experiencing very inconvenient, heavy traffic. So far, only the noise of tram lines in the centre of the city has been eliminated. Pollution noise generated by industry is noticed in Dandowka or Debowa Gora. The noise pollution norms have been exceeded in Bytom, too. The worst situation is present in the city's central quarters (Srodmiescie, Rozbark, Karb) where local and regional traffic has been concentrated. It is expected that in the nearest future there is going to be another problem of noise pollution in Bytom, connected with motorway no. 1, which is under construction now. The motorway will run along the northern parts of Bytom. At present, Stolarzowice quarter's inhabitants are protesting against the noise and pollution caused by the construction.

Another crucial problem of both cities is the revitalization of degraded areas. There are two types of activities in this field. The first concept is the forestation and the second is the preparation of the areas to be used for industry or services. The planned forestation activities are noticeable mostly in larger areas, for example in the southern part of the sandpit in Sosnowiec. The planned activities there are combined here with the natural process of plant succession on the area of about 2 km².

An interesting concept was to adapt the former wastelands (dumps) in Niwka quarter (Sosnowiec) for a new municipal cemetery. Nevertheless, most brownfields are earmarked for new industrial or service areas or buildings. The areas of former heavy industry in eastern Bytom have been modified into the new industrial area of The Bytomski Park Przemyslowy (Bytom Industrial Park). It should be highlighted, however, that the situation of transferring wastelands into new industrial areas is present mainly in Sosnowiec. The most spectacular changes happened in Milowice, where the former coal mine area was adapted for a modern meat factory (Duda Bis), and a publishing and printing house (Polskapresse).

From the point of view of prestige, the most important change in the economic townscape of Sosnowiec was the establishment of “Silesia-Expo” exposition fair in Zagorze (see figure 6). One of the most popular places for expositions in Poland was created on the area of the bankrupt engineering industry plant. The former assembly shop has been adapted into an exhibition building while the former office block is going to be changed into a four-star hotel. The changes have been numerous, especially in Sosnowiec. For example, the former obsolete logistics centre is probably the largest place of prayer for Jehovah witnesses in Poland presently. On the other hand, “Plejada” shopping centres in Sosnowiec and also in Bytom were constructed on the former wastelands (dumps).

Figure 6. Different kinds of brownfields rehabilitation: protected green areas “Zabie doly” in Bytom and “Silesia-Expo” exposition fair in Sosnowiec



Source: www.bytom.pl and www.sosnowiec.pl

3.7. Municipal budgets

The economic crisis and limitations connected with city shrinkage are reflected in the size and structure of municipal budgets for the cities of the region. The problem refers, in the same degree, to income, as well as expenditures. The questions were presented in detail in tables 59-71. The first issue concerns the fact that the cities of the Katowice Conurbation are of diverse capacity, if income is taken into consideration. A group of cities including Katowice and Gliwice comprise the wealthiest cities holding the administrative district function in Poland (GDP index per capita), while Bytom and Sosnowiec are ranked in the last five positions. The comparison of income per person in the Katowice Conurbation is presented in tab.

63, where the quite modest budgets of both cities can be seen. They are comparable to the budgets of smaller industrial towns, such as Swietochlowice or Piekary Sl. In Bytom, the per capita income of the budget in 2007 equalled about 627 Euro and in Sosnowiec - about 667 Euro. In both cases, it was about a quarter lower than the highest budget of Myslowice.

The structure of income is an important issue. It is most profitable when the city compensates most means as its own income. Taking this condition into account, the capital of the region - Katowice (73%) and Dabrowa Gornicza (72%) are at the top of the list. In the examined cities, the number for Bytom equals 52% and for Sosnowiec - 60%. The index for Bytom is, next to the Swietochlowice index, the lowest in the region. In the structure of income, a significant part is comprised of means acquired from other sources, including, especially, different EU programmes. In this respect, the position of both examined cities was quite good in 2007. They were ranked in the privileged group of cities, where the share of such means equalled 5-10%. Sosnowiec, with its 10%, was in a particularly good situation in reference to the point. The number for Bytom amounted to over 5%.

In the case of Sosnowiec, an important share was made up by EU funds for the rebuilding of the sewer system in the southern and eastern part of the city. As presented in tab. 68, 69, 70 and 71 a considerable part of the municipal budget is absorbed by current expenditure of budgetary entities. In this category, a special role is played by remuneration. On the other hand, it is crucial to pay attention to the structure of budget expenditures by division. Both in Sosnowiec and in Bytom, a significant part of the means is allocated to social assistance and other tasks in the sphere of social policy. In Sosnowiec, one-sixth of the budget is allocated to this cause and in Bytom, it is one-fifth. In 2007, the amounts equalled 22.5 million Euro and 25.7 million Euro, respectively. If the fact that Bytom is a less populated city is taken into consideration and it earmarks higher amounts for social assistance, it might be relevant to state that problems of such kind in this city are bigger than in Sosnowiec. The differences are even more visible in the case of financial means allocated to housing management. In Bytom, it is 3.5% of the budget, while in Sosnowiec only 1.5%. These differences are conditioned by the earlier discussed differences in the structure, age and technical condition of the buildings. In both cities, the most serious element of budget expenditure is made up of means earmarked for education. Their share amounts to about one-third.

To sum up, it should be stated that the modest budgets of Bytom and Sosnowiec, as for cities of such size, are burdened by indispensable or safety expenditures. Development funds that might be allocated for creative and developmental activities are limited. A good example might be the project of constructing a paleontological park, with a museum in Sosnowiec-Porabka that has not been implemented. This interesting and creative project was resigned from due to financial limitations.

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5. ANNEX - DATABASE

Tab. 14. Population of cities in the Katowice Conurbation – core area, last years and population projection

Cities	2001	2002	2003	2004	2005	2006	2007	POPULATION PROJECTION				
								2010	2015	2020	2025	2030
Katowice	338	325	322.3	319.9	317.2	314.5	312.2	304.5	288.4	270.2	250.3	229.3
Sosnowiec	239.8	231	229.9	228.1	226	224.2	222.6	219	209.2	197.8	184.6	170.3
Gliwice	208.4	202.6	201.6	200.4	199.5	198.5	197.4	192.8	184	173.7	162	149.6
Zabrze	196.5	194.6	193.7	192.5	191.2	191.2	189	181.3	170.9	159.5	147	134
Bytom	200.2	192.6	191.1	189.5	187.9	186.5	184.8	176.6	164.9	152.4	139.3	126.1
Ruda Slaska	153	149.7	148.4	147.4	146.6	145.5	144.6	134.5	123.9	113	101.8	90.7
Tychy	130.4	132.5	132.1	131.5	131.2	130.5	129.8	127.7	123.3	117.5	110.7	102.9
Dabrowa Gorn	129.7	131.9	131.4	130.8	130.1	129.6	128.8	128.3	124.8	121.1	114.1	106.9
Chorzow	119.5	116.6	115.8	115.2	114.7	114	113.7	107.6	101.1	94.2	86.9	79.3
Jaworzno	97.1	96.8	96.7	96.5	96.2	95.7	95.5	94.5	92.3	89.2	85.3	80.6
Myslowice	78.7	75.6	75.3	75.3	75.2	75.2	74.9	74.6	73.2	71.2	68.4	64.8
Siemianowice Sl.	76.1	74.1	73.5	73.2	72.7	72.2	71.6	70.2	67.2	63.8	59.8	55.6
Piekary Slaskie	65	60.6	60.3	60	59.7	59.4	59.1	57.3	54.8	52	48.7	45.3
Swietochlowice	58.2	56.3	56	55.7	55.3	55	54.5	53.3	51.2	48.8	46	43
The GZM - region	2090.6	2039.9	2028.1	2016	2003.5	1992	1978.5	1922.2	1829.2	1724.4	1604.9	1478.4

Tab. 15. Dynamics of population of cities in the GZM-region

Tab. 16. Dynamics of population of cities in the GZM-region. The chain-method

Absolute increase (the one-basis method)						Cities	Absolute increase (the chain method)					
1960	1970	1980	1990	2001	2008		1960	1970	1980	1990	2001	2008
100	112.8	131.4	135.7	125	115.5	Katowice	-	12.8	16.4	3.3	-7.9	-7.6
100	110.1	186.9	197	182.1	169	Sosnowiec	-	10.1	69.7	5.4	-7.6	-7.2
100	114.5	131.5	142.6	138.7	131.4	Gliwice	-	14.5	14.8	8.4	-2.7	-5.3
100	103.2	102.7	107.4	102.9	99	Zabrze	-	3.2	-0.5	4.6	-4.1	-3.8
100	102.7	128.3	126.6	109.6	101.2	Bytom	-	2.7	24.9	-1.2	-14.4	-7.7
100	108.6	120.8	129.8	116.2	109.8	Ruda Slaska	-	8.6	11.2	7.5	-10.5	-5.4
100	143.3	333.9	284.2	261.3	260.1	Tychy	-	43.3	133	15.1	-32	-0.5
100	111.2	254.8	246.7	233.7	232	Dabrowa Gorn	-	11.2	129.2	-3.2	-5.3	-0.7
100	103.6	102.4	83.9	81.5	77.6	Chorzow	-	3.6	-1.2	-	-9.4	-4.9
100	119.8	168.2	187.4	182.9	179.8	Jaworzno	-	19.8	40.4	11.4	-2.4	-1.7
100	111.2	198.5	233.3	195.8	186.3	Myslowice	-	11.2	78.5	17.5	-16.1	-4.8
100	108.5	123.6	129.9	121.9	114.7	Siemianowice Sl.	-	8.5	23.5	5.2	-6.2	-5.9
100	113	192.7	212.7	201.9	183.5	Piekary Slaskie	-	13	76.6	6.5	-5.1	-9.1
100	100.7	102.3	105.4	101.4	94.9	Swietochlowice	-	0.7	1.5	3.1	-3.8	-6.4
100	109.7	142.5	148.7	134.5	127.2	The GZM - region	-	9.7	29.9	4.3	-9.6	-5.4

17. Number and population density as well as population dynamics in quarters of Bytom, 1988-2008

Quarters	Area (km ²)	1988		2008		1988-2008
		Number of population (thousands)	Population density (per km ²)	Number of population (thousands)	Population density (per km ²)	Dynamics
Bobrek	2.54	5.9	2323	5.2	2047	-12%
Gorniki	1.65	1.8	1090	1.1	667	-39%
Karb	3.44	8.8	2558	8.2	2384	-7%
Lagiewniki	4.64	15.8	3405	9.3	2004	-41%
Miechowice	11.52	30.1	2613	26.4	2292	-12%
Osiedle Gen. J. Zietka	0.87	12.2	14023	9.3	10639	-24%
Rozbark	8.03	15.1	1880	16.9	2109	-11%
Stolarzowice	8.3	2.4	2891	3.5	422	46%
Stroszek-Dabrowa Miej.	10.66	7.6	713	14.4	1351	89%
Sucha Gora	5.07	1.5	296	3.7	730	147%
Szombierki	4.93	30	6085	25.8	5233	-14%
Srod miescie	7.81	72.1	9232	58.2	7450	-19%
Bytom	69.5	203.3	2925	182	2618	-10%

Tab. 18. Number and population density in quarters of Sosnowiec, 1988-2005

Quarters	Area (km ²)	1988		1995		2005	
		Number of population (thousands)	Population density (per km ²)	Number of population (thousands)	Population density (per km ²)	Number of population (thousands)	Population density (per km ²)
Dandowka	1.556	6	3856	6	3856	5.8	3727
Debowa Gora	2.403	8.5	3537	7.8	3246	7.2	2996
Klimontow	4.438	8.2	1847	7.5	1690	7.2	1622
Pogon	5.315	40.7	7657	37.2	7000	34.2	6435
Stary Sosnowiec	2.299	17.5	7612	16.8	7307	16.3	7090
Srodula	1.953	18.5	9472	18.2	9319	17.7	9063
Srod miescie (Centrum)	4.513	53.9	11943	50.6	11212	48.2	10680
Zagorze	14.471	57.7	3987	57.1	3946	53.4	3690
Polnoc	3.374	0.8	237	0.6	178	0.6	178
Milowice	3.943	6.9	1750	5.9	1496	5.3	1344
Kazimierz Gorniczny	3.793	8.6	2267	8.4	2214	8.3	2188
Maczki	17.411	2	115	2	115	1.9	109
Ostrowy Gornicze	5.175	3.1	599	2.9	560	2.7	522
Porabka	1.997	1	500	0.9	451	0.8	400
Zawodzie	2.084	6.4	3071	6.4	3071	6	2879
Bobrek	2.344	0.9	384	0.9	384	0.8	341
Jezor-Bor	6.192	4	646	3.7	597	3.5	565
Ludmila-Staszic	3.282	0.9	274	1.2	365	1	305
Niwka-Modrzejow	4.273	12.7	2927	12	2808	12.6	2949
Sosnowiec	90.816	258.6	2847	247.5	2725	233.6	2572

Tab. 19. Dynamics of population by quarters of Sosnowiec, 1988-2005

Quarters	Dynamics 1988-1995	Dynamics 1995-2005	Dynamics 1988-2005
Dandowka	0%	-3%	-3%
Debowa Gora	-7%	-8%	-15%
Klimontow	-8%	-4%	-12%
Pogon	-8%	-8%	-16%
Stary Sosnowiec	-4%	-3%	-7%
Srodula	-2%	-2%	-4%
Srodmiescie (Centrum)	-6%	-5%	-11%
Zagorze	-1%	-6%	-7%
Polnoc	-25%	0%	-25%
Milowice	-13%	-10%	-23%
Kazimierz Gorniczy	-2%	-1%	-3%
Maczki	0%	-5%	-5%
Ostrowy Gornicze	-6%	-7%	-13%
Porabka	-9%	-11%	-20%
Zawodzie	0%	-6%	-6%
Bobrek	0%	-11%	-11%
Jezor-Bor	-7%	-5%	-12%
Ludmila-Staszic	-7%	-17%	-10%
Niwka-Modrzejow	-6%	5%	-1%
Sosnowiec	-4%	-6%	-10%

Tab. 20. Dynamics of population in Sosnowiec's quarter Zagorze – the second, biggest block-settlement in the Katowice Conurbation, 1975-2005

Year	Number of population (thousands)	Population density (thousands)	Dynamics of population (%)	Propotion of age-groups (%) <18 : 18-65 : >65
1931	7.8	1.2	0	-
1941	7.5	1.2	-4	-
1948	5.7	0.9	-27	-
1950	7.6	1.2	-2.6	-
1960	8.6	0.7	13	-
1965	10.9	0.9	40	-
1970	12.8	1.1	64	-
1972	13.2	1.1	69	32:57:11
1975	14.1	1.3	81	-
<i>The end of</i>	<i>the first stage of</i>	<i>building</i>	<i>the great</i>	<i>settlement-blocks</i>
1978	40.1	3.3	414	32 : 63 : 5
1988	57.7	3.7	640	38:57:05
1995	57.1	3.9	632	-
2001	55.3	3.8	609	0.963321759
2005	53.4	3.7	585	-

Tab. 21. Dynamics of population in Pogon (Sosnowiec) - old-housing type quarter, 1975-2005

Year	Number of population	Dynamics
1975	42.5	100%
1978	45	105.90%
1988	40.7	95.80%
1995	37.2	87.50%
2005	34.2	80.50%

Tab. 22. Population migrations in cities of the GZM-region, 1988

Cities	Inflow				Outflow				Net migration
	Total	From urban areas	From rural areas	From abroad	Total	To urban areas	To rural areas	To abroad	
Bytom	3416	2093	1311	12	6000	2189	495	3316	-2584
Chorzow	1849	1337	504	8	3683	2899	183	601	-1834
Dabrowa Gorn.	4050	2419	1624	7	2198	1543	281	374	1852
Gliwice	1538	904	632	2	2020	1403	433	184	-482
Jaworzno	1081	539	532	10	894	664	203	27	187
Katowice	6578	4567	1985	26	4916	3625	547	744	1662
Myslowice	2106	1382	719	5	1171	795	144	232	935
Piekary Slaskie	1128	794	332	2	919	563	143	213	209
Ruda Slaska	2540	1834	701	13	1861	1348	287	226	679
Siemianowice	2031	1686	342	3	1028	758	125	145	1003
Sosnowiec	4077	2315	1761	1	3202	2688	515	-	874
Swietochlowice	1403	1098	304	1	1301	1039	94	168	102
Tychy	1947	1158	782	7	1875	1427	255	193	72
Zabrze	3550	1779	1765	6	2524	1482	481	561	1026

Tab. 22a. Population migrations in cities of the GZM-region, 1996

Cite	Inflow		Outflow		Net migration
	Total	From abroad	Total	To abroad	
Bytom	1674	25	2249	605	-575
Chorzow	1404	30	2530	1262	-1126
Dabrowa Gorn.	1392	15	1318	23	74
Gliwice	1893	62	2071	486	-178
Jaworzno	693	16	605	10	88
Katowice	3733	86	4179	991	-446
Myslowice	645	18	694	54	-49
Piekary Slaskie	499	7	704	210	-205
Ruda Slaska	1244	22	1652	548	-408
Siemianowice Sl.	743	6	792	170	-49
Sosnowiec	2296	2	2435	76	-139
Swietochlowice	671	9	696	77	-25
Tychy	991	32	1479	244	-488
Zabrze	1981	24	2150	673	-169

Tab. 23. Population migrations in cities of the GZM-region, 2001

Cities	Inflow				Outflow				Net migration
	Total	From urban areas	From rural areas	From abroad	Total	To urban areas	To rural areas	From abroad	
Bytom	558	435	123	5	1447	1016	431	463	-1347
Chorzow	1309	1135	174	9	1063	852	211	615	-360
Dabrowa Gorn.	1238	991	247	1	1164	857	307	54	21
Gliwice	1285	971	314	47	1397	893	504	459	-524
Jaworzno	368	274	94	4	463	283	180	33	-124
Katowice	2300	1825	475	67	3017	2474	543	578	-1228
Myslowice	607	500	107	12	481	396	85	90	48
Piekary Slaskie	426	360	66	3	371	233	138	233	-175
Ruda Slaska	647	543	104	23	879	655	224	761	-970
Siemianowice	574	493	81	11	612	521	91	144	-171
Sosnowiec	1510	1135	375	11	2022	1629	393	61	-562
Swietochlowice	481	414	67	4	496	422	74	165	-176
Tychy	810	628	182	27	1119	738	381	162	-444
Zabrze	957	682	275	24	1168	787	381	1154	-1341

Tab. 24. Population migrations in cities of the GZM-region, 2007

Cities	Inflow				Outflow				Net migration
	Total	From urban areas	From rural areas	From abroad	Total	To urban areas	To rural areas	To abroad	
Bytom	1510	1260	250	37	2596	1474	1122	458	-1086
Chorzow	1556	1371	185	53	1549	1099	450	213	7
Dabrowa Gorn.	1309	1025	14	30	1734	1184	550	105	-425
Gliwice	1617	1111	506	111	2740	1434	1306	419	-1123
Jaworzno	525	391	134	42	756	408	348	140	-231
Katowice	2897	2361	536	104	4490	3218	1272	447	-1593
Myslowice	895	751	144	30	945	640	305	105	-50
Piekary Slaskie	609	481	128	24	754	423	331	109	-145
Ruda Slaska	1046	901	145	30	1763	972	791	482	-717
Siemianowice	688	575	113	26	1021	711	310	148	-333
Sosnowiec	1587	1290	297	31	2986	2188	798	131	-1399
Swietochlowice	635	548	87	25	897	668	229	113	-262
Tychy	993	726	267	56	1805	1009	796	152	-812
Zabrze	1338	1031	307	61	2298	1157	1141	605	-960

Tab. 25. Migration inflow to suburban – rural commune Psary, 2004-2008

Cities	2004	2006	2008	2004-2008	% of total
Bedzin	71	58	48	304	34.7
Bytom	3	3	6	29	3.3
Chorzow	3	6	4	14	1.6
Czeladz	2	10	1	37	4.2
Dabrowa Gornicza	42	37	12	154	17.7
Gliwice	0	0	1	3	0.3
Jaworzno	1	1	0	2	0.2
Katowice	11	11	9	68	7.8
Myslowice	0	1	0	8	0.9
Piekary Slaskie	0	2	1	10	1.1
Ruda Slaska	0	4	3	7	0.8
Siemianowice Slaskie	4	14	5	34	3.9
Sosnowiec	35	54	31	189	21.6
Swietochlowice	1	5	0	7	0.8
Tarnowskie Gory	0	1	0	2	0.2
Tychy	1	0	0	6	0.7
Zabrze	0	0	2	2	0.2
Total	174	207	123	876	100

Tab. 26. Death rate (deaths per 1000 population) in cities of the Katowice Conurbation, 1988-2007

Cities	1988	2001	2007	Dynamics in %		
				1988-2001	2001-2007	1988-2007
Bytom	10.5	10.2	11.4	-0.3	1.2	0.9
Chorzow	14.6	12.7	13.2	-1.9	0.5	-1.4
Dabrowa Gorn.	10.4	10.3	10.8	-0.1	0.5	0.4
Gliwice	9.5	9	9.9	-0.5	+0.9	0.4
Jaworzno	8.7	9.1	9.7	0.4	0.6	1
Katowice	11.6	10.4	11.4	-1.2	1	-0.2
Myslowice	9.8	8.6	10.2	-1.2	1.6	0.4
Piekary Slaskie	11.4	9.8	11	-1.6	1.2	-0.4
Ruda Slaska	11.1	10.3	11.2	-0.8	0.9	0.1
Siemianowice	10.8	10.5	12	-0.3	1.5	1.2
Sosnowiec	10	10.2	11.2	0.2	1	1.2
Swietochlowice	12.5	11.8	11.5	-0.7	-0.3	-1
Tychy	6.4	7.7	8.4	1.3	0.7	2
Zabrze	10.5	8.7	9	-1.8	0.3	-1.5

Tab. 27. Infants death rate (deaths of infants per 1000 live births) in cities of the Katowice Conurbation, 1988-2007

Cities	1988	2001	2007	Dynamics in %		
				1988-2001	2001-2007	1988-2007
Bytom	10.5	12.2	9.4	1.7	-2.8	-1.1
Chorzow	14.4	8	8	-6.4	0	-6.4
Dabrowa Gorn.	10.4	10.1	5.2	-0.3	-4.9	-5.2
Gliwice	9.5	7.6	4.7	-1.9	-3.9	-4.8
Jaworzno	8.7	3.7	6.8	-5	3.1	-1.9
Katowice	11.6	15.4	11.9	3.8	-3.5	0.3
Myslowice	9.8	12.4	10.8	2.6	-1.6	1
Piekary Slaskie	11.4	11.9	3.9	0.5	-8	-7.5
Ruda Slaska	11.1	13.9	4.2	2.8	-9.7	-6.9
Siemianowice	10.8	8.2	11.9	-2.6	3.7	1.1
Sosnowiec	10	10.5	9.6	0.5	-0.9	-0.4
Swietochlowice	12.6	6.4	9.3	-6.2	2.9	-3.3
Tychy	6.4	3.6	9	-2.8	5.4	2.6
Zabrze	10.5	9.5	4.8	-1	-4.7	-5.7

Tab. 28. Fertility rate in cities of the Katowice Conurbation, 1988-2007

Cities	2001	2007	Dynamics in % 2001-2007
Bytom	29.9	40.3	34.8
Chorzow	33	44.2	33.9
Dabrowa Gornicza	26.2	38.9	48.5
Gliwice	27.1	37.3	37.6
Jaworzno	-	39	-
Katowice	26.2	37.9	44.6
Myslowice	-	41.1	-
Piekary Slaskie	-	38	-
Ruda Slaska	32.4	42.2	30.2
Siemianowice	-	40.9	-
Sosnowiec	25.3	36.9	45.8
Swietochlowice	-	43.3	-
Tychy	28.7	43.6	51.9
Zabrze	30.6	36.4	18.9

Tab. 29. Ageing index, youth rate, elderly rate as well as youth dependency rate and old-age dependency rate in Bytom and in Sosnowiec, 1988-2007

INDEX	1988	BYTOM			1988	SOSNOWIEC		
		1996	2001	2007		1996	2001	2007
Population (total)	228.3	225.3	200.2	184.8	258.6	246.3	239.8	222.6
Population (0-14)	52.3	45	32.2	27.2	60.6	43.2	32.2	28
Population (15-64)	156.7	158.7	147.1	130.2	175.5	176.5	178.7	163.8
Population (65 and more)	18.7	21.6	22.9	27.4	22.6	26.6	28.9	30.8
Group of dependency (0-14 and 65 and more)	71.6	66.6	55.1	54.6	83.1	69.8	61.1	58.8
Ageing index	35.4	37.2	71.1	100.7	37.3	62.4	89.7	110
Youth rate	23.1	20	16.1	14.7	23.4	17.5	13.4	12.6
Elderly rate	8.2	9.6	11.4	14.8	8.7	10.8	12	13.8
Dependency rate	45.66	42	37.97	41.94	47.33	39.5	34.22	35.91
Youth dependency rate	33.7	28.3	21.9	20.9	34.5	24.5	18	17.1
Old-age dependency rate	11.9	13.6	15.6	21	12.9	15.1	16.2	18.8

Tab. 30. Number of places in kindergartens, primary schools and gymnasiums as well as doctors and beds in hospitals in Bytom and in Sosnowiec, 1988-2007

INDEX	BYTOM				SOSNOWIEC			
	1988	1996	2001	2007	1988	1996	2001	2007
Number of places in kindergartens and pupils in primary schools only 1-8 classes (1988) or primary schools +gymnasiums 1-6+7-9 classes (2002 and 2007)	5434	4971	4170	4004	6393	5501	5532	4650
Primary schools 1-8 classes (1988) and primary schools +gymnasiums 1-6+7-9 classes (2001and 2007)	27602	23496	13519+ 7090	9982+ 6047	33781	26207	13833+ 8586	9921 + 6336
Closures of social infrastructures (number of closed schools, kindergartens)	53	42	36+16= 52	28+21= 49	45	47	45+24= 69	37+3 0=67
Number of doctors per 1,000 inhabitants	-	-6Kin	-9Kin	-3 Kin	-	-9Kin	-2Kin	-1 Kin
Number of beds in hospitals per 10000 inhabitants	-	-9PS	-16PS	-8PS	-	+2PS	-2PS	-8PS
Number of doctors per 1,000 inhabitants	3	3	2.9	-	2.8	3	3.4	-
Number of beds in hospitals per 10000 inhabitants	100.1	106.8	83	84.5	90.2	112.1	80.7	73.1

Tab. 31. Registered unemployment in cities of the Katowice Conurbation. Number of unemployed persons

Cities	Number of unemployed persons										
	1993	1995	1997	1999	2001	2002	2003	2004	2005	2006	2007
Bytom	7757	9201	7612	11358	16031	17775	17853	16912	15186	12341	8935
Chorzow*	4845	4767	4509	10196	9899	10782	11141	10620	9899	7946	5190
Dabrowa G.	11968	8174	5668	7486	11114	12300	12687	12138	10846	9193	6906
Gliwice	7787	6501	4654	11722	12499	13301	13049	12611	11506	8685	5933
Jaworzno	4218	3851	2632	4323	7436	7884	7785	7228	5901	4770	3968
Katowice	10025	7262	4732	8181	14748	16970	16735	15258	14146	10810	6826
Myslowice	3793	341	2257	3321	5004	5376	5571	5125	4518	3615	2700
Piekary Slaskie*	2119	2102	1351	-	3639	4499	4653	4417	3879	3230	2645
Ruda Slaska*	7586	5104	3372	5784	8758	9346	8205	7469	6611	5115	3196
Siemianowice Sl.*	3181	2975	2375	-	6134	6600	7180	6195	5190	3961	2789
Sosnowiec	13931	11966	8006	12699	19362	22079	20231	19692	17216	13167	9854
Swietochlowice*	2988	2498	1830	-	4268	4703	4622	4559	3847	3062	1743
Tychy	7139	6267	3235	9748	8969	8506	7808	7183	6635	4967	3091
Zabrze	9600	8409	6283	10142	15341	15264	15271	15148	13375	11739	7897

* - Unemployment rate in cities: Chorzow and Siemianowice Sl., Ruda Slaska and Swietochlowice and Piekary Slaskie had been counted together until 1999.

Tab. 32. Index of registered unemployment in cities of the Katowice Conurbation

Cities	Registered unemployed persons (percentage)										
	1993	1995	1997	1999	2001	2002	2003	2004	2005	2006	2007
Bytom	8.7	10.3	9	14.1	21.6	25	27.1	26.7	24.6	21.1	15.9
Chorzow*	10.4	10.8	9.7	15	21.1	22.7	24.6	23.7	22.3	18.4	12.6
Dabrowa G.	15.6	11.3	8.2	11.3	16.6	18.9	20.2	19.9	18.2	15.5	11.6
Gliwice	7.5	6.6	4.8	8.3	13.5	14.5	14.9	14	12.5	9.3	6.2
Jaworzno	10.5	10.7	7.5	12.7	21.5	23.1	23.8	22.7	17.7	14.4	13
Katowice	4.6	3.3	2.2	3.7	7	8.2	8.4	7.7	7.1	5.4	3.3
Myslowice	10.1	10.2	6.8	10.3	15.4	16.4	18	17	15.1	12.2	9.1
Piekary Slaskie*	-	-	-	-	18	21.9	23.2	21.9	17.7	17.1	14.5
Ruda Slaska*	12.3	11.2	6.7	11.7	15.3	16.5	15.1	14.2	13	10.3	6.8
Siemianowice Sl.*	-	-	-	-	24.8	27.4	31.1	28.1	24	18.5	13.6
Sosnowiec	14.3	12.7	8.4	14.2	21.6	23.7	22.9	22.9	20.4	16.3	12
Swietochlowice*	-	-	-	-	24	27.1	28.2	29	25.7	21.2	12.8
Tychy	9.3	8.9	5	8.1	16	15.7	14.3	13.1	12	8.8	5.2
Zabrze	12.5	10.8	8.8	15.3	23	23.3	23.6	23.4	21	18.7	13

Tab. 33. Employment rate and activity rate in cities of the GZM-region, 2001

Cities	Employed persons	Unemployed persons	Employed and unemployed total	Working age population	Employment rate	Activity rate
	In thousands				In %	
Bytom	41.8	16	57.8	129.3	32.3	44.7
Chorzow	28	9.9	37.9	75.7	37	50.1
Dabrowa Gorn.	41.7	11.1	52.8	86.6	48.1	61
Gliwice	62.7	12.5	75.2	139.6	44.9	53.9
Jaworzno	20.6	7.4	28	61.6	33.4	45.4
Katowice	156.2	14.7	170.9	217.9	71.7	78.4
Myslowice	22.9	5	27.9	50.3	45.5	55.5
Piekary Slaskie	14.1	3.6	17.7	41.8	33.7	42.3
Ruda Slaska	40.1	8.8	48.9	98.9	40.5	49.4
Siemianowice Sl.	12.3	6.1	18.4	49.8	24.7	36.9
Sosnowiec	49.6	19.4	69	161.6	30.7	42.7
Swietochlowice	10.6	4.3	14.9	38.3	27.7	38.9
Tychy	34.9	9	43.9	85.7	40.7	51.2
Zabrze	41.9	15.3	57.2	125.9	33.3	45.4

Tab. 34. Employment rate and activity rate in cities of the GZM-region, 2007

Cities	Employed persons	Unemployed persons	Employed and unemployed total	Working age population	Employment rate	Activity rate
	In thousands				In %	
Bytom	33.2	8.9	42.1	120.2	27.6	35
Chorzow	25.5	5.2	30.7	72	28.6	42.6
Dabrowa Gorn.	41.2	6.9	48.1	89.2	31.2	53.9
Gliwice	70.2	5.9	76.1	131.9	53.2	57.7
Jaworzno	19.9	4	23.9	63	31.6	37.9
Katowice	155.7	6.8	162.5	202.4	76.9	80.3
Myslowice	20.5	2.7	23.2	50.2	40.8	46.2
Piekary Slaskie	11.8	2.6	14.4	38.7	30.5	37.2
Ruda Slaska	35.6	3.2	38.8	95.1	37.4	40.8
Siemianowice S.	12.3	2.8	15.1	47.4	25.9	31.8
Sosnowiec	51.5	9.8	61.3	152.2	33.8	40.3
Swietochlowice	8.6	1.7	10.2	36	23.9	28.3
Tychy	43.8	3.1	46.9	90	48.7	52.1
Zabrze	40.2	7.9	47.9	125.1	32.1	38.3

Tab. 35. Dynamics of employment rate and activity rate in cities of the GZM-region, 2001-2007

Cities	Employment rate(%)	Activity rate (%)
Bytom	-4.7	-9.7
Chorzow	-8.4	-7.5
Dabrowa Gorn.	-13.7	-7.1
Gliwice	8.3	3.8
Jaworzno	-1.8	-7.5
Katowice	5.2	1.9
Myslowice	-4.7	-9.3
Piekary Slaskie	-3.2	-5.1
Ruda Slaska	-3.1	-8.6
Siemianowice S.	1.2	-5.1
Sosnowiec	3.1	-2.4
Swietochlowice	-3.8	-10.6
Tychy	8	0.9
Zabrze	-1.2	-7.1

Tab. 36. GDP index per capita in cities of Poland, 2008. The reachest cities

Position in the ranking (diminishing rates)	City	GDP per capita in PLN and in (Euro)
1	Warszawa	4333 (1054,2)
2	Sopot	4127 (1004,1)
3	Plock	4103 (998,3)
4	Swinoujscie	3421 (832,4)
5	Wroclaw	3366 (819)
6	Krosno	3124 (760,1)
7	Katowice	3052 (742,6)
8	Nowy Sacz	2937 (714,6)
9	Poznan	2923 (711,2)
10	Opole	2916 (709,5)
11	Dabrowa Gornicza	2910 (708)
12	Suwalki	2904 (706,6)
13	Slupsk	2880 (700,7)
14	Gliwice	2858 (695,4)
15	Rybnik	2804 (682,2)

Tab. 37. GDP index per capita in cities of Poland, 2008. The poorest cities

Position in the ranking (increasing rates)	City	GDP per capita in PLN and in (Euro)
1	Swietochlowice	1782 (433,6)
2	Zory	1796 (437)
3	Sosnowiec	1978 (481,3)
4	Piekary Slaskie	2011 (489,3)
5	Bytom	2074 (504,6)

Tab. 38. Average monthly gross wages and salaries (in PLN) in cities of the GZM-region, 2008

Cities	Total	Sector		Agriculture, forestry	Industry, construction	Services	
		Public	Private			Market	Non-market
Bytom	2480	2649	2286	2017	2483	2383	2539
Chorzow	2494	2588	2428	1559	2854	2112	2628
Dabrowa Gorn.	3088	3204	3033	1614	3325	2795	2763
Gliwice	3146	3210	3108	2554	3197	3013	3220
Jaworzno	3230	3686	2521	-	3846	2584	2589
Katowice	3727	4038	3132	2943	4190	3120	3251
Myslowice	2423	2566	2364	-	2553	2125	2592
Piekary Slaskie	2396	2607	2210	-	2356	2145	2589
Ruda Slaska	2511	2709	2364	1472	2438	2486	2601
Siemianowice Sl.	2585	2547	2604	1344	2829	2360	2471
Sosnowiec	2525	2762	2375	1599	2751	2173	2597
Swietochlowice	2381	2510	2307	2060	2372	2287	2478
Tychy	2766	2687	2789	-	2963	2553	-
Zabrze	2804	2748	2847	-	3163	2471	-

Tab. 39. Average monthly gross wages and salaries (in Euro) in cities of the GZM-region, 2008

Cities	Total	Sector		Agriculture, forestry	Industry, construction	Services	
		Public	Private			Market	Non-market
Bytom	603	644	556	491	604	580	617
Chorzow	607	630	591	379	694	514	639
Dabrowa Gorn.	751	780	738	393	809	680	672
Gliwice	765	781	756	621	778	733	783
Jaworzno	786	897	613	-	936	629	630
Katowice	907	983	762	716	1019	759	791
Myslowice	589	624	575	-	621	517	631
Piekary Slaskie	583	634	538	-	573	522	630
Ruda Slaska	611	659	575	358	593	605	633
Siemianowice Sl.	629	620	633	327	688	574	601
Sosnowiec	614	672	578	389	669	529	632
Swietochlowice	579	611	561	501	577	556	603
Tychy	673	654	678	-	721	621	-
Zabrze	682	669	693	-	770	601	-

Tab. 40. Structure of employed in cities of the GZM-region, 2000-2007

Cities	Employed in % of total											
	Agriculture, forestry			Industry, construction			Market services			Non-market services		
	1988 *	2000	2007	1988	2000	2007	1988	2000	2007	1988	2000	2007
Bytom	-	0.8	0.3	61.8	46	34.7	18.6	29.7	34.7	19.6	23.5	30.2
Chorzow	-	1.4	0.2	58.9	41.2	33.1	20.1	33.1	39.6	21	24.3	27.1
Dabrowa Gorn.	-	0.1	0.2	75.8	62.3	54.9	12	23.5	29.8	12.2	14	15.2
Gliwice	-	0.5	0.5	63.7	41.8	42.8	15.5	37.4	38.7	20.8	20.2	18
Jaworzno	-	0.1	0.1	68.2	50.9	48.3	18.8	29.7	28.9	13	19.2	22.7
Katowice	-	0.3	0.2	51.4	35.4	28.3	25.8	42.4	48.6	22.8	21.9	22.9
Myslowice	-	0.3	0	68.3	57.5	54.7	17	26	27.1	14.7	16.2	18.1
Piekary Slaskie	-	0.6	0	72.6	58.7	53.1	14.6	19.3	23.2	12.8	21.4	23.7
Ruda Slaska	-	0.2	0.3	72.3	67.9	55.8	14.9	17.2	24.7	12.8	14.7	19.2
Siemianowice Sl.	-	0.2	0.2	70.2	49.1	43	12.6	30.1	32.7	17.2	20.6	24.1
Sosnowiec	-	0.3	0.3	64.2	43.3	37.3	15.4	30.2	37.8	20.4	26.1	24.6
Swietochlowice	-	0.6	0.3	67.3	50.5	41.3	10.9	24.8	35	21.8	24	23.3
Tychy	-	0.4	0.1	67.2	50.7	55.9	17.1	31.1	29.8	15.7	17.9	14.1
Zabrze	-	0.1	0	66.1	44.3	38.6	12.5	29	34.4	21.4	26.5	27

Signature: * - agriculture and forestry were counted with market services. It should be noted that share of these sections probably were lesser than 1% in each of cities.

Tab. 41. Structure of employed in cities of the GZM-region, 1988-2000. Dynamics

Cities	Dynamics in %			
	Agriculture, forestry	Industry, construction	Market services	Non-market services
	Dynamics 1988-2000	Dynamics 1988-2000	Dynamics 1988-2000	Dynamics 1988-2000
Bytom	-	-15.8	11.1	3.9
Chorzow	-	-17.7	13.1	3.3
Dabrowa Gorn.	-	-13.5	11.5	1.8
Gliwice	-	-21.9	21.9	-0.4
Jaworzno	-	-17.3	10.9	6.2
Katowice	-	-16	16.6	-0.9
Myslowice	-	-10.8	9	1.5
Piekary Slaskie	-	-13.9	4.7	8.6
Ruda Slaska	-	-4.4	3.3	1.9
Siemianowice Sl.	-	-21.1	17.5	3.4
Sosnowiec	-	-20.9	14.8	5.7
Swietochlowice	-	-16.8	13.9	2.2
Tychy	-	-16.5	14	2.2
Zabrze	-	-21.8	16.5	5.1

Tab. 42. Structure of employed in cities of the GZM-region, 2000-2007. Dynamics

Cities	Dynamics in %			
	Agriculture, forestry	Industry, construction	Market services	Non-market services
	Dynamics 2000-2007	Dynamics 2000-2007	Dynamics 2000-2007	Dynamics 2000-2007
Bytom	-63%	-25%	17%	28%
Chorzow	-86%	-20%	20%	11%
Dabrowa Gorn.	100%	-12%	27%	8%
Gliwice	0%	2%	-3%	-11%
Jaworzno	0%	-5%	-3%	18%
Katowice	-33%	-20%	15%	5%
Myslowice	-300%	-7%	4%	12%
Piekary Slaskie	-600%	-10%	20%	11%
Ruda Slaska	33%	-18%	30%	30%
Siemianowice Sl.	0%	-12%	9%	17%
Sosnowiec	0%	-14%	25%	-6%
Swietochlowice	-100%	-18%	41%	-3%
Tychy	-25%	10%	-4%	-21%
Zabrze	-100%	-13%	19%	2%

Tab. 43. Structure of employed in cities of the GZM-region, 1988-2007. Dynamics

Cities	Dynamics in %			
	Agriculture, forestry	Industry, construction	Market services	Non-market services
	Dynamics 1988-2007	Dynamics 1988-2007	Dynamics 1988-2007	Dynamics 1988-2007
Bytom	-	-27.1	16.1	10.6
Chorzow	-	-25.8	19.5	7.1
Dabrowa Gorn.	-	-20.9	17.8	3
Gliwice	-	-20.9	23.2	-2.8
Jaworzno	-	-19.9	10.1	9.7
Katowice	-	-23.1	22.8	0.1
Myslowice	-	-13.6	10.1	3.4
Piekary Slaskie	-	-19.5	8.6	10.9
Ruda Slaska	-	-16.5	9.8	6.4
Siemianowice Sl.	-	-27.2	20.1	6.9
Sosnowiec	-	-26	22.4	4.2
Swietochlowice	-	-26	24.1	1.5
Tychy	-	-11.3	12.7	-1.6
Zabrze	-	-27.5	21.9	5.6

Tab. 44. Employed in cities of the GZM-region by sections of the NACE in 2005

SECTIONS	BY	CH	DG	GL	JA	KA	MY	PS	RS	SI	SO	SW	TY	ZA
TOTAL	61535	47423	58456	99046	31077	370247	26766	14241	38228	23284	87087	13575	53698	61133
A+B	389	215	112	421	41	663	144	69	97	61	688	47	144	85
C+D+E	11066	9213	19022	24917	9940	150693	4456	2512	6477	5656	19601	3023	14215	16226
C	2384	73	137	35	5590	101550	55	94	52	61	1866	52	6	482
D	7541	8520	17142	23651	3924	39143	4368	2047	5524	5532	17306	2971	13424	11537
E	1141	620	1743	1231	426	10000	33	371	901	63	429	-	785	4207
F	7878	4358	6481	10237	2114	24576	4692	1251	3792	2849	8397	2133	4693	7129
G	13136	10685	12538	18992	6261	51894	6567	4088	9713	6206	21519	3404	13475	15183
H	1938	1511	1547	2113	561	5183	783	388	1064	471	2010	387	1322	1251
I	2436	2284	3458	3909	2432	11422	1147	537	1572	1028	5302	674	2563	4695
J	1124	767	818	1570	674	11189	515	239	666	379	1580	179	1344	900
K	6558	7789	5259	14728	2457	32248	2916	1049	4203	2163	10534	1093	6131	5704
L	2245	1134	913	4531	787	26864	544	313	989	485	1630	174	728	1103
M	5195	3114	3689	9460	2546	20004	1901	1185	3646	1606	5903	1005	3468	4286
N	5522	3172	2457	4704	2112	19089	1704	1659	4461	1531	7182	868	3305	5539
O	4084	3181	2126	3462	1152	16420	1307	951	1658	849	2738	588	2310	3032
P	-	-	-	2	-	-	-	-	-	-	2	-	-	-
Q	-	-	-	-	-	2	-	-	-	-	1	-	-	-

Number and percentage of employed in economic institutions by registered office of institution

Tab. 44a. Employed in cities of the GZM-region by sections of the NACE in 1996

SECTIONS	BY	CH	DG	GL	JA	KA	MY	PS	RS	SI	SO	SW	TY	ZA
TOTAL	60200	32687	50020	68909	25266	160455	23953	18238	47337	15367	61806	12537	30627	49942
A+B	168	497	76	241	19	461	30	57	101	2	164	5	98	10
C+D+E	32460	13410	31673	30934	15007	57914	12630	11679	31763	8257	30474	7010	13608	23763
F	6016	4033	6395	8383	1787	19036	3838	1286	3214	1248	5619	1208	2927	6689
G	5074	3526	2482	7904	1111	27280	1736	1453	3161	1755	6113	1071	3737	4828
I	4150	2436	1852	6178	2479	14628	1408	613	1687	692	3950	344	2478	1921
L	1310	812	848	1614	602	6488	546	184	670	287	1207	163	854	1054
M	4331	2266	2795	6987	1684	12096	1343	919	2373	1072	5642	768	2573	4017
N	6691	3653	2861	4804	2041	15456	1925	1647	3358	1724	7226	1434	3371	6058
H,J,K,O,P,Q	2432	2054	1038	1864	536	7096	497	400	1010	330	1411	534	981	1602

Tab. 45. Share of employed in cities of the GZM-region by sections of the NACE in 2005

SECTIONS	BY	CH	DG	GL	JA	KA	MY	PS	RS	SI	SO	SW	TY	ZA
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100
A+B	0.6	0.4	0.2	0.4	0.1	0.2	0.6	0.5	0.2	0.3	0.8	0.3	0.3	0.1
C+D+E	18	19.4	32.5	25.1	32	40.7	16.6	17.6	16.9	24.3	22.5	22.3	26.4	26.5
C	3.9	0.1	0.2	0	18	27.4	0.2	0.7	0.1	0.3	2.1	0.4	0	0.8
D	12.2	18	29.3	23.9	12.6	10.6	16.3	14.4	14.4	23.7	19.9	21.9	25	18.9
E	1.8	1.3	3	1.2	1.4	2.7	0.1	2.6	2.3	0.3	0.5	-	1.5	6.9
F	12.8	9.2	11.1	10.3	6.8	6.6	17.5	0.8	9.9	12.2	9.6	15.7	8.7	11.7
G	21.3	22.5	21.4	19.2	20.1	14	24.5	28.7	25.4	26.6	24.7	25.1	25.1	24.8
H	3.1	3.2	2.6	2.1	1.8	1.4	2.9	2.7	2.8	2	2.3	2.8	2.5	2
I	3.9	4.8	5.9	3.9	7.8	3.1	4.3	3.8	4.1	4.4	6.1	5	4.8	7.7
J	1.8	1.6	1.4	1.6	2.2	3	1.9	1.7	1.7	1.6	1.8	1.3	2.5	1.5
K	10.6	16.4	9	14.9	7.9	8.7	10.9	7.4	11	9.3	12.1	8	11.4	9.3
L	3.6	2.4	1.6	4.6	2.5	7.2	2	2.2	2.6	2.1	1.9	1.3	1.3	1.8
M	8.4	6.6	6.3	9.6	8.2	5.4	7.1	8.3	9.5	6.9	6.8	7.4	6.4	7

SHRiNK SMaRT WP2-D4 Bytom & Sosnowiec, Poland

N	9	6.7	4.2	4.7	6.8	5.1	6.4	11.6	11.7	6.6	8.2	6.4	6.1	9.1
O	6.6	6.7	3.6	3.4	3.7	4.4	4.9	6.7	4.3	3.6	3.1	4.3	4.31	4.9
P	-	-	-	0	-	-	-	-	-	-	0	-	-	-
Q	-	-	-	-	-	0	-	-	-	-	0	-	-	-

Tab. 45a. Share of employed in cities of the GZM-region by sections of the NACE in 1996

SECTIONS	BY	CH	DG	GL	JA	KA	MY	PS	RS	SI	SO	SW	TY	ZA
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100
A+B	0.3	1.5	0.2	0.3	0.1	0.3	0.1	0.3	0.2	0	0.2	0	0.3	0
C+D+E	53.9	41	63.3	44.9	59.4	36.1	52.7	64	67.1	53.7	49.4	55.9	44.4	47.7
F	10	12.3	12.8	12.2	7.1	11.9	16	7	6.8	8.1	9.1	9.6	9.5	13.3
G	8.4	10.8	5	11.5	4.4	17	7.2	8	6.7	11.4	9.9	8.5	12.2	9.7
I	6.9	7.5	3.7	12.3	9.8	9.1	5.9	3.4	3.6	4.5	6.4	2.7	8.1	3.9
L	2.2	2.5	1.7	2.3	2.4	4	2.3	1	1.4	1.9	1.9	1.3	2.8	2.1
M	7.2	6.9	5.6	10.1	6.7	7.6	5.7	5	5	9.1	9.1	6.1	8.4	8
N	11.1	11.2	5.7	7	8.1	9.6	8	7.1	7.1	11.7	11.7	11.4	11	12.1
H,J,K,O,P,Q	4	6.3	2	2.7	0.2	4.4	2.1	2.1	2.1	2.3	2.3	4.2	3.2	3.2

Tab. 47. Employment in coal-mines in cities Bytom and Sosnowiec, 1989-2008

Cities	1989			2008		
	Number of coal-mines	Employment (in thousands and percent of total)	Average employment in 1 coal-mine	Number of coal-mines	Employment (in thousands and percent of total)	Average employment in 1 coal-mine
Bytom	6	27,8 (53,2%)*	4.7	1	3,7 (12%)	3.7
Sosnowiec	4	21,5 (49,2%)*	5.4	1	1,9 (12%)	1.9

Tab. 48. Employment in coal-mines in cities Bytom and Sosnowiec, 1989, 1998, 2008

1989		1998		2008	
CITY OF BYTOM					
Name of coal-mine	Employment	Name of coal-mine	Employment	Name of coal-mine	Employment
Bobrek	3.7	Bobrek-Miechowice	4.1	Bobrek-Centr.	3.7
Miechowice	3.5	-	-	-	-
Powstancow Sl.	7.8	Powstancow Slaskich	2	-	-
Rozbark	4.7	Rozbark	2.4	-	-
Centrum	4.6	Centrum-Szombierki	2.4	-	-
Szombierki	3.5	-	-	-	-
1989		1998		2008	
CITY OF SOSNOWIEC					
Name of coal-mine	Employment	Name of coal-mine	Employment	Name of coal-mine	Employment

Niwka- Modrzejow	5.5	Niwka-Modrzejow	2.6	-	-
Kazimierz-Juliusz	4.9	Kazimierz-Juliusz	2.5	Kazimierz- Juliusz	1.9
Porabka- Klimontow	6.5	Porabka- Klimontow	1.2	-	-
Sosnowiec	4.6	-	-	-	-

Tab. 49. Industrial plants by branches in Sosnowiec, 1975 and contemporary situation

Name of industrial plants by branches	Employment (branches total)	Situation in 2009
COALMINING	21736	
KWK „Sosnowiec”		CLOSED
KWK „Niwka-Modrzejow”		CLOSED
KWK „Kazimierz-Juliusz”		PROCESS OF RESTRUCTURING
KWK „Porabka-Klimontow”		CLOSED
METALLURGY	6692	
Huta im. Cedlera		PROCESS OF RESTRUCTURING (ARCELOR MITTAL STEEL)
Huta im. Buczka		PROCESS OF RESTRUCTURING
METALLURGICAL INDUSTRY	5088	
Sosn. Odlwnie Zeliwa „Sostal”		PROCESS OF RESTRUCTURING
ZPP „Prema-Milmet”		OPEN (VITKOVICE-MILMET)
SZLiD „Linodrut”		PROCESS OF RESTRUCTURING
Sosnowieckie Zaklady Przemyslu Teren.		CLOSED
SIN „Promet”		OPEN
SP „Przyszlosc”		PROCESS OF RESTRUCTURING
Fabryka Opalowan Blaszanych „Decorum”		CLOSED
ENGINEERING	3239	
ZUAP „Mera”		CLOSED
Fabryka Silnikow Malej Mocy „Silma”		CLOSED
AUTOMOTIVE	1668	
FSM, Plant no. 7		OPEN (MAGNETI MARELLI)
BUILDING MATERIALS PRODUCTION	321	
PMliB „Izolacja”		CLOSED
ZPC – Biuro Dokumentacji Tech.-Ruchowej		CLOSED
TIMBER INDUSTRY	329	
Stolarsko-Tapicerska SP „Meblosprzet”		CLOSED
TEXTILE INDUSTRY	6151	
Przedzalnia Czesankowa „INTERTEX”		CLOSED
Sosn. Przedzalnia Czesankowa „POLITEX”		CLOSED
ZPD „Wanda”		CLOSED
SP „Wloknochemia”		CLOSED
CLOTHING INDUSTRY	1234	
Bytomskie Zakl. Odziezowe „BYTOM” – 4		PROCESS OF RESTRUCTURING
SI Odziezowo-Dziewiarska „Femina”		CLOSED
SI „Naprzód”		CLOSED
FOOD INDUSTRY	996	
OSM „WSS- Spolem”		PROCESS OF RESTRUCTURING
PRINT INDUSTRY	70	

Sosn. Zakłady Graficzne Przemysłu Teren.		CLOSED
INDUSTRIAL SECTOR IN SOSNOWIEC	53541	

Tab. 50. Concentration of new economic and social activities in Bytom and in Sosnowiec

Concentration of new economic and social activities	Localization	Economic profile	Evolution of development; structure
Bytom-Lagiewniki	Road no. 79	Service, shopping-center	Initial; focused
Bytom-Stroszek	Road no.11	Service, shopping-center, sport and rest	Initial; dispersed
Sosnowiec-The Northern Pogon	Road no. 96	Education, wholesale companies, hospital service	Initial; focused
		Shopping-centres, logistics,	
Sosnowiec-Srodula	Road no. 96	Service	Advanced; focused
		Shopping-centres, exhibition, service	
Sosnowiec-Zagorze (Jozefow)	Road no. 96	Industry, shopping-centres, sport and rest, tourism	Advanced; dispersed
		Industry, residential, education	
Sosnowiec-Milowice	Road no. 86	Industry, logistics, education	Initial; dispersed
Sosnowiec-Dandowka/Klimontow	Road no. 1	Industry, shopping-centres, service, sport and rest	Initial; focused
Sosnowiec-Niwka	Roads no. 1 & 79		Initial; dispersed
Sosnowiec-Sielec/Srodula	City roads		Initial; dispersed

Tab. 51. The Subzone Sosnowiec-Dabrowa of The Katowice Special Economic Zone (The KSEZ) in city of Sosnowiec

The KSEZ-Sosnowiec: Areas	Companies	Economic profile	Capital	Employment
				-2009
„Milowice” „Complex 1	<i>Polskapresse</i>	Printing	German	77
	<i>Duda-Bis</i>	Meat-industry	Polish	1248
	<i>Gimplast</i>	Plastic-industry	Italian	63
„Dandowka” Complex 2	<i>Caterpillar</i>	Metallurgical	American	195
	<i>Ergom Poland</i>	Automotive	Italian	305
	<i>Ergomoulds Poland</i>	Plastic-industry	Italian	237
	<i>Bitron</i>	Domestic appliances	Italian	885
	<i>Nadwozia-Partner</i>	Automotive	Polish	75
	<i>Process Electronics</i>	Electronics	Canadian	47
	<i>Magneti Marelli Exhaust System</i>	Automotive	Italian	153
	<i>Segu Polska</i>			
„Narutowicza” Complex 4	<i>Ferrol</i>	Automotive	German	219
	<i>Automotive Lighting Poland</i>	Engineering	Italian	210
„Zaruskiego” Complex 5		Automotive	Italian	1042
All areas	-	-	-	4756

Tab. 52. Central functions and some metropolitan level cities of the GZM-region

Hierarchical level	Name of level	1993	2001
1	<i>Capital</i>	[Warsaw]	[Warsaw]
2	<i>Regional</i>	Katowice	Katowice
3	<i>Subregional</i>	Gliwice	Gliwice
4	<i>Mezoregional-strongly developed</i>	Chorzow, Sosnowiec , Tychy	Sosnowiec , Tychy
5	<i>Mezoregional-others</i>	Bytom , Dabrowa Gornicza, Chrzow, Myslowice, Ruda Slaska, Zabrze, Siemianowice Slaskie, Piekary Slaskie	Bytom , Chorzow, Dabrowa Gornicza, Chrzow, Myslowice, Ruda Slaska, Zabrze, Siemianowice Slaskie, Piekary Slaskie
6	<i>Local</i>	Jaworzno, Swietochlowice	Jaworzno, Swietochlowice

Tab. 53. Metropolitan and central functions rate of cities in Poland. Part I

Hierarchical level	Name of level	Cities	Population -2001	Cities	Population -2001
3	Subregional (118,2>375,2)	Rzeszow	160.8	Olsztyn	173.4
		Bialystok	289.8	Opole	130.3
		Kielce	213.2	Gliwice	204.7
		Bydgoszcz	375.2	Zielona Gora	118.2
		Torun	210.3	Bielsko-Biala	178.8
4	Mezoregional -strongly developed (32,1>252,6)	Cities	Population -2001	Cities	Population -2001
		Czestochowa	252.6	Legnica	107.2
		Sopot	42.2	Plock	128.6
		Koszalin	108.7	Leszno	63.2
		Gdynia	253.5	Siedlce	76.6
		Radom	230.3	Piaseczno	32.1
		Pila	75	Tarnow	120.6
		Gorzow Wlkp.	125.9	Zamosc	67.2
		SOSNOWIEC	233.9	Piotrkow Tryb.	81.1
		Kalisz	109.9	Wloclawek	121.7
		Nowy Sacz	84.4	Tychy	133.2
		Jelenia Gora	89.9	Krosno	48.5
Slupsk	100.3	Cieszyn	36.6		

Tab. 54. Metropolitan and central functions rate of cities in Poland. Part II

CITIES (13,5>196,5)	POPULATION
Dabrowa Gornicza	132.6
Zywiec	32.2
BYTOM	195
Tarnowskie Gory	62.6
Chorzow	118.3
Pszczyna	25.8
Wodzislaw Slaski	49.9
Myslowice	75.9
Zawiercie	54.4
Ustron	15.5

CITIES (13,5>196,5)	POPULATION
Raciborz	59.9
Zabrze	196.5
Lubliniec	24.7
Skoczow	15
Zory	63.5
Klobuck	13.5
Mikolow	38.2
Jastrzebie Zdroj	97.3
Czeladz	35.2
Siemianowice Slaskie	74.7

Rybnik	143
Bedzin	59.6
Ruda Slaska	151.6
Myszkow	33.4

Piekary Slaskie	61.1
Czechowice-Dziedzice	35
Rydultowy	22

Tab. 55. Population density and housing questions in Bytom and in Sosnowiec, 1988-2007

INDEX	BYTOM				SOSNOWIEC			
	1988	1996	2001	2007	1988	1996	2001	2007
Population density (total city)	2748	2714	2902	2661	2842	2706	2635	2444
Number of housing units (in thousands)	79	78.2	71.7	72.3	86.6	88.7	88.8	90.8
Average living area in m ² per person	18.3	18.6	19	21.2	17.5	19	19.6	22.1
Number of households which have problems with regular payments for flat	-	24139	24776	-	-	24402	25211	-
Percentage of households which have problems with regular payments for flat	-	30.9	33	-	-	35.3	34.5	-
Average debt in PLN and in Euro for 1 household	-	570 -130	1662 -400	-	-	775 -180	772 -180	-
It's mean no payments since months	-	1-Jan	5	-	-	2	2	-

Tab. 56. Structure of dwellings in cities of the GZM-region, 2008

Cities	Dwellings in absolute numbers				
	Total	Housing co-operatives	Municipal	Companies	Natural persons
Bytom	72279	19889	17861	9979	24085
Chorzow	50300	17524	11698	1425	19211
Dabrowa Gorn.	50058	20626	6017	1857	21456
Gliwice	74922	22882	15231	4408	31162
Jaworzno	33334	8414	2773	543	21501
Katowice	133636	58722	18775	10602	43149
Myslowice	27183	6247	2527	4784	13451
Piekary Slaskie	23297	5420	4478	1015	12229
Ruda Slaska	56719	31145	8548	2907	13490
Siemianowice Sl.	29936	16255	4905	2073	6507
Sosnowiec	90828	41437	11723	8000	29214
Swietochlowice	21916	8432	6476	465	6506
Tychy	46264	21497	6212	619	16970
Zabrze	67181	17637	18206	5233	25769

Tab. 57 A Structure of depopulation process 1990-2009. Case of some staircase in block in Sosnowiec

YEAR: 1990

CITY: SOSNOWIEC

STREET: KALINOWA

BLOCK: I

STAIRCASE NUMBER: 37

FLAT NUMBER	FAMILY			NUMBER OF PERSONS	AVERAGE AGE	PROFESSIONS		
	PARENTS	CHILDREN	OTHERS			MALE	FEMALE	OTHERS OR CHILDREN
31	2=M+F	0	0	2	40	B(14)	B(14)	-
32	1=(+)+F	2=D+D	0	3	25	-	B(14)	-
33	2=M+F	1=S	0	3	25	B(13)	B(57)	-
34	2=M+F	2=D+S	0	4	35	B(13)	W(S14)	-

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35	2=M+F	0	0	2	60	B(I4)	P	-
36	2=M+F	1=S	0	3	35	W (S5)	W (S7)	-
37	2=M+F	2=D+S	0	4	30	B (S9)	W (I4)	-
38	2=M+F	1=D	0	3	35	B(I4)	B(I4)	-
39	2=M+F	2=S+S	0	4	30	B(I4)	B(I4)	-
40	2=M+F	2=S+S	0	4	30	B(I4)	B(I4)	-
41	2=M+F	1=S	0	3	35	B(S9)	B(S15)	-
42	2=M+F	1=S	0	3	35	W(I4)	W(I4)	-
43	2=M+F	1=D+D↓1	0	3	40	B(I4)	W(I4)	-
44	1=()+F	1=D	0	2	25	-	W(I4)	-
45	2=M+F	1=D+D↓2	0	3	35	B(I3)	B(I4)	-
TOTAL	13M+15F (28)	10D+10S (20)	0	46	-	B(12)	B(8)	-
			0			W(2)	W(6)	-
						P(0)	P(1)	-
AVERAGE OR DOMINATION	1.9	1.3	0	3.2	35			
			3.2			B(I4)	B(I4)	-

Signatures or commentaries
Column 2:

M-male (husband),

F-female (wife),

(+)- person is dead,

(||)-person is not living in this flat (divorce or separation),

M↓, F↓(1,2,3)-internal migration [1-the same quarter, 2-the same city, 3-city of the Katowice Conurbation],

M↑, F↑(1,2,3)- external migration [1-other settlement of the Katowice Conurbation or in śląskie voivodship, 2-other place in Poland, 3-other place in the world]

Column 3:

S-son,

D-daughter,

M↓, F↓(1,2,3)-internal migration [1-the same quarter, 2-the same city, 3-city of the Katowice Conurbation],

M↑, F↑(1,2,3)- external migration [1-other settlement of the Katowice Conurbation or in śląskie voivodship, 2-other place in Poland, 3-other place in the world]

Column 6:

Value rounded off to half of ten

Column 7,8,9:

B-blue collar,

W-white collar,

P-pensioners,

U-unempolyed person,

S-service sector,

I-industry sector,

1,2,3...17-Number of the NACE sections.

Tab. 57 B Structure of depopulation process 1990-2009. Case of some staircase in block in Sosnowiec
YEAR: 2009
CITY: SOSNOWIEC
STREET: KALINOWA
BLOCK: I
STAIRCASE NUMBER: 37

FLAT NUMBER	FAMILY			NUMBER OF PERSONS	AVERAGE AGE	PROFESSIONS		
	PARENTS	CHILDREN	OTHERS			MALE	FEMALE	OTHERS OR CHILDREN
31	1=(+)+F	0	0	1	60	-	P	-
32	1=(+)+F	0=D↓2+ D↓2	0	1	60	-	P	-
33	2=M+F	2=D+S	0	4	35	P	B (S7)	W(S15)
34	2=M+F	2=D+S	0	4	50	P	P	B(S15)+ W (S11)

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35	2=M+F	1=S	0	3	25	B(13)	B(14)	-
36	0=M↓3(∥)+ F↑2(∥)	1=S	0	1	35	B(S9)	-	-
37	2=M+F	0=D↓1+ S↓3	0	2	60	P	P	-
38	1=(+)+F	1=D	0	2	55	-	P	W(S13)
39	2=M+F	1=S+S↑2	0	3	50	P	P	B(14)
40	1=M+(+)	0=S↓1+ S↓2	0	1	60	P	-	-
41	2=M+F	1=S	0	3	55	P	P	B(S15)
42	1=M+(+)	0=S↓3	0	1	65	P	-	-
43	2=M+F	0=D↓1	0	2	65	P	P	-
44	1=(∥)+F	1=D	0	2	45	-	P	W(S13)
45	0=(+)+(+))	0=D↓3	0	0	0	-	-	-
TOTAL	9M+11F(20)	4D+6S (10)	0 (0)	30	-	B(2)	B(2)	B(3)
						W(0)	W(0)	W(4)
						P(8)	P(9)	-
AVERAGE OR DOMINATION	1.3	0.7	0	2	50	-	-	-
						P	P	W

Column 2:

M-male (husband),
 F-female (wife),
 (+)- person is dead,
 (∥)-person is not living in this flat (divorce or separation),
 M↓, F↓(1,2,3)-internal migration [1-the same quarter, 2-the same city, 3-city of the Katowice Conurbation],
 M↑, F↑(1,2,3)- external migration [1-other settlement of the Katowice Conurbation or in śląskie voivodship, 2-other place in Poland, 3-other place in the world]

Column 3:

S-son,
 D-daughter,
 M↓, F↓(1,2,3)-internal migration [1-the same quarter, 2-the same city, 3-city of the Katowice Conurbation],
 M↑, F↑(1,2,3)- external migration [1-other settlement of the Katowice Conurbation or in śląskie voivodship, 2-other place in Poland, 3-other place in the world]

Column 6:

Value rounded off to half of ten

Column 7,8,9:

B-blue collar,
 W-white collar,
 P-pensioners,
 U-unempolyed person,
 S-service sector,
 I-industry sector,
 1,2,3...17-Number of the NACE sections.

Tab. 57 C Dynamics of depopulation process 1990-2009. Case of some staircase in block in Sosnowiec

YEARS: 1990-2009

CITY: SOSNOWIEC

STREET: KALINOWA

BLOCK: I

STAIRCASE NUMBER: 37

FLAT NUMBER	FAMILY			NUMBER OF PERSONS	INCREASE OF AGEING RATE	MIGRATIONS		
	PARENTS	CHILDREN	OTHERS			INTERNAL	EXTERNAL	TOTAL
31	-1	0	0	-1	20	-	-	-
32	0	-2	0	-2	35	2	-	2
33	0	1	0	1	10	-	-	-
34	0	0	0	0	15	-	-	-
35	0 (-2+2)	1	0	1	-35	-	-	-

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36	-2	0	0	-2	0	1	1	2
37	0	-2	0	-2	30	2	-	2
38	-1	0	0	-1	20	-	-	-
39	0	-1	0	-1	20	-	1	1
40	-1	-2	0	-3	30	2	-	2
41	0	0	0	0	20	-	-	-
42	-1	-1	0	-2	30	1	-	1
43	0	-1	0	-1	25	1	-	1
44	0	0	0	0	25	-	-	-
45	-2	-1	0	-3	0	1	-	1
TOTAL	-8	-8	0	-16	-	10	2	12
			0					
AVERAGE OR DOMINATION	0.5	0.5	0	3.2	35	0.7	0.1	0.8

Column 2:

M-male (husband),
 F-female (wife),
 (+)- person is dead,
 (|)-person is not living in this flat (divorce or separation),
 M↓, F↓(1,2,3)-internal migration [1-the same quarter, 2-the same city, 3-city of the Katowice Conurbation],
 M↑, F↑(1,2,3)- external migration [1-other settlement of the Katowice Conurbation or in śląskie voivodship, 2-other place in Poland, 3-other place in the world]

Column 3:

S-son,
 D-daughter,
 M↓, F↓(1,2,3)-internal migration [1-the same quarter, 2-the same city, 3-city of the Katowice Conurbation],
 M↑, F↑(1,2,3)- external migration [1-other settlement of the Katowice Conurbation or in śląskie voivodship, 2-other place in Poland, 3-other place in the world]

Column 6:

Value rounded off to half of ten

Column 7,8,9:

B-blue collar,
 W-white collar,
 P-pensioners,
 U-unempolyed person,
 S-service sector,
 I-industry sector,
 1,2,3...17-Number of the NACE sections.

Tab. 58. Number of persons per 1 dwelling in cities of the GZM-region, 1988-2008

Cities	Number of persons per 1 dwelling		
	1988	2001	2008
Bytom	2.83	2.73	2.56
Chorzow	2.84	2.32	2.26
Dabrowa Gorn.	2.95	2.61	2.57
Gliwice	2.97	2.79	2.63
Jaworzno	3.29	3.05	2.87
Katowice	2.73	2.42	2.34
Myslowice	3.12	2.96	2.76
Piekary Slaskie	2.95	2.77	2.54
Ruda Slaska	2.92	2.62	2.55
Siemianowice Sl.	2.99	2.49	2.39

Sosnowiec	2.9	2.62	2.45
Swietochlowice	2.67	2.52	2.49
Tychy	3.4	2.95	2.81
Zabrze	2.94	2.85	2.81

Tab. 59. Investment outlays in enterprises by selected sections in cities of the GZM-region in PLN, 2007

Cities	Grand total	Of which						
		Industry		Construction	Trade and repair	Tansport, storage and communication	Financial intermedia-tion	Real estate, renting, and business activities
		Total	Of which manufacturing					
In millions PLN								
Bytom	243	109.5	21.5	15.8	24.8	41.1	1.6	31.6
Chorzow	327.2	166.6	157.1	4.4	28.4	42.3	2.1	14.8
Dabrowa Gorn.	1376.3	1263.2	1212.9	8	28.5	27.6	4.6	22.6
Gliwice	1213	845.6	747.7	17.6	78.8	65	5.3	136.4
Jaworzno	220.5	166.3	35.4	6.5	2.1	26.2	1	2.1
Katowice	1847.5	760.6	312.1	81.5	377.1	169	97.8	235.7
Myslowice	233	139.8	38.5	33.5	40.7	8.2	1.5	5.1
Piekary Slaskie	77	46.6	13.4	1.5	11.8	0.8	1.1	8.6
Ruda Slaska	279	142	18.8	12.1	71.1	5.5	2.6	17.3
Siemianowice Sl.	192.7	98.3	84.3	14.5	47.1	6.9	0.1	7.4
Sosnowiec	585.2	394.3	333.5	25.4	63.8	56.1	3.2	24.5
Swietochlowice	56.4	36.2	29	2.6	4.7	1.6	1	0.1
Tychy	1842.8	1686	1648.8	2.3	42.2	32.6	3.1	51.4
Zabrze	484.5	171.7	76.4	20.1	137.2	28.6	3.5	80.2

Tab. 60. Investment outlays in enterprises by selected sections in cities of the GZM-region in Euro, 2007

Cities	Grand total	Of which						
		Industry		Construction	Trade and repair	Tansport, storage and communication	Financial intermedia-tion	Real estate, renting, and business activities
		Total	Of which manufacturing					
In millions Euro								
Bytom	59.1	26.6	5.2	3.8	6	10	1.1	7.7
Chorzow	79.6	4	38.2	1.1	6.9	10.3	0.5	3.6
Dabrowa Gorn.	334.8	307.3	295.1	1.9	6.9	6.7	1.1	5.5
Gliwice	295.1	205.7	181.9	4.3	19.2	15.8	1.3	33.2
Jaworzno	53.6	40.5	8.6	1.6	0.5	6.4	0.2	0.5
Katowice	449.5	185.1	75.9	19.8	9.7	41.1	23.8	57.3
Myslowice	56.7	34	9.4	8.2	9.9	1.9	0.4	1.2
Piekary Slaskie	18.7	11.3	3.2	0.4	2.9	0.2	0.3	2.1
Ruda Slaska	67.9	34.5	3.6	3.6	17.4	1.3	0.6	4.2
Siemianowice Sl.	46.9	23.9	3.5	3.5	11.4	1.7	0	1.8
Sosnowiec	142.4	95.9	6.2	6.2	15.5	13.6	0.8	6
Swietochlowice	13.7	8.8	0.6	0.6	1.1	0.4	0.2	0
Tychy	448.8	410.2	0.6	0.6	10.3	7.9	0.8	12.5
Zabrze	117.9	4.2	4.9	4.9	33.4	6.9	0.8	19.5

Tab. 61. Investment expenditures on environmental protection (in PLN) in cities of the GZM-region (2007)

Cities	Investment expenditures on environmental protection			
	Total	Of which on		
		Waste water management and protection of waters	Protection of air and climate	Waste management, protection and reclamation of soils as well as underground and surface waters
In thousands PLN				
Bytom	39404.7	20739.7	2645.8	15770.6
Chorzow	33372.2	11049.4	4373	4615.1
Dabrowa Gorn.	27339.2	7549.6	13881.8	5860
Gliwice	71890.5	47190	16782.1	6471
Jaworzno	49659.5	3869.8	44436	162.1
Katowice	72417.5	40065.7	9698	9902.4
Myslowice	5046.9	3353.9	1693	-
Piekary Slaskie	7009.8	5657.3	1352.5	-
Ruda Slaska	40056.7	34255.8	-	865.2
Siemianowice Sl.	1803.3	1222.3	-	57
Sosnowiec	71852	66408.6	1821	3622.4
Swietochlowice	9705.3	5127	3345.6	1093
Tychy	38162.8	22717.6	3063.3	338
Zabrze	19256.9	4585.9	3381	2189

Tab. 62. Investment expenditures on environmental protection (in Euro) in cities of the GZM-region (2007)

Cities	Investment expenditures on environmental protection			
	Total	Of which on		
		Waste water management and protection of waters	Protection of air and climate	Waste management, protection and reclamation of soils as well as underground and surface waters
In thousands Euro				
Bytom	9587	5046	644	3837
Chorzow	8119	2688	1064	1123
Dabrowa Gorn.	6651	1836	3377	1426
Gliwice	17491	11481	4083	1574
Jaworzno	12052	941	10811	39
Katowice	17620	9748	2359	2409
Myslowice	1228	816	412	-
Piekary Slaskie	1705	1376	329	-
Ruda Slaska	9746	8334	-	210
Siemianowice Sl.	438	297	-	14
Sosnowiec	1748	16157	443	881
Swietochlowice	2361	1247	814	266
Tychy	9285	5527	745	82
Zabrze	4685	1116	823	532

Tab. 63. Revenue and expenditure of cities of the GZM-region budgets per capita, 2007

	Revenue in PLN and (Euro)		Expenditure in PLN and (Euro)	
		Of which own revenue		Of which

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Cities	Total		Total	Current expenditure	Investment expenditure
Bytom	2570 (627)	1329 (323)	2544 (619)	1656 (403)	317 (77)
Chorzow	3024 (736)	1693 (412)	2831 (689)	1503 (366)	322 (78)
Dabrowa Gorn.	3280 (798)	2350 (572)	3176 (773)	1999 (486)	319 (78)
Gliwice	3643 (886)	2377 (578)	3644 (887)	2004 (488)	924 (225)
Jaworzno	2923 (711)	1822 (443)	3084 (750)	1846 (449)	631 (153)
Katowice	3656 (889)	2654 (646)	3244 (789)	1680 (409)	665 (162)
Myslowice	4014 (977)	3094 (753)	3141 (764)	1893 (461)	289 (70)
Piekary Slaskie	2193 (534)	1301 (316)	2045 (498)	1432 (348)	37 (9)
Ruda Slaska	3522 (857)	1782 (434)	3585 (872)	1750 (426)	1213 (295)
Siemianowice Sl.	2667 (649)	1694 (412)	2621 (638)	1698 (413)	182 (44)
Sosnowiec	2723 (662)	1631 (397)	2586 (629)	1435 (349)	617 (150)
Swietochlowice	2265 (551)	1204 (293)	2327 (566)	1361 (331)	348 (85)
Tychy	3278 (798)	2089 (508)	2903 (706)	1590 (387)	625 (152)
Zabrze	2899 (705)	1601 (389)	2756 (670)	1549 (377)	474 (115)

Tab. 64. Revenue of the GZM's cities budgets by type in PLN, 2001

		Own revenue	Appropriated allocations from the state budget	Allocations received from appropriated funds	Appropriated allocations received for tasks realized on the basis of self-government agreements	General subsidies	Funds for additional financing of own tasks from other sources
Cities	Total						
In thousands PLN							
Bytom	381930	197533	68396	752	38	115203	8
Chorzow	235617	88584	67229	412	-	76192	3200
Dabrowa Gorn.	266592	143800	38522	23	10	84016	221
Gliwice	487652	280717	77776	305	416	128438	-
Jaworzno	177376	90579	28280	185	-	57053	1279
Katowice	866364	450022	160771	616	296	253348	1311
Myslowice	136049	71751	21120	4	-	43174	-
Piekary Slaskie	89283	41209	15952	6	-	32116	-
Ruda Slaska	280754	153006	43288	103	-	82615	1742
Siemianowice Sl.	126143	72147	19527	553	3	33913	-
Sosnowiec	434319	245802	63259	1732	-	122756	770
Swietochlowice	93466	38711	27041	6	-	27708	-
Tychy	285058	142720	45075	213	2308	88913	5829
Zabrze	401078	219722	57807	197	-	118074	5278

Tab. 65. Revenue of the GZM's cities budgets by type in Euro, 2001

		Own revenue	Appropriated allocations from the state budget	Allocations received from appropriated funds	Appropriated allocations received for tasks realized on the basis of self-government agreements	General subsidies	Funds for additional financing of own tasks from other sources
Cities	Total						
In thousands Euro							
Bytom	92927	48062	16641	183	9	28030	1.9
Chorzow	57328	21554	16357	100	-	18538	779
Dabrowa Gorn.	64864	34987	9373	5.6	2.4	20442	54

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Gliwice	118650	68301	18924	74	101	31250	-
Jaworzno	43157	22039	6881	45	-	13881	311
Katowice	210794	109494	39117	150	72	61642	319
Myslowice	33102	17458	5139	1	-	10504	-
Piekary Slaskie	21724	10027	3881	1.5	-	7814	-
Ruda Slaska	68310	37228	10532	25	-	20101	424
Siemianowice Sl.	30692	17554	4751	135	0.7	8251	-
Sosnowiec	105674	59806	15392	421	-	29868	187
Swietochlowice	22741	9419	6579	1.5	-	6742	-
Tychy	69357	34725	10967	52	562	21633	1418
Zabrze	97585	53460	14065	48	-	28728	1284

Tab. 66. Revenue of the GZM-region's cities budgets by type in PLN, 2007

		Own revenue	Appropriated allocations from the state budget	Allocations received from appropriated funds	Appropriated allocations received for tasks realized on the basis of self-go -vern-ment agreements	General subsidies	Funds for additional financing of own tasks from other sources
Cities	Total						
In thousands PLN							
Bytom	477501	246915	72873	1934	518	130584	24676
Chorzow	343942	192617	47384	667	2716	92061	8495
Dabrowa Gorn.	424092	303830	34669	570	351	82706	1965
Gliwice	720811	470395	56469	1911	4573	144800	42623
Jaworzno	279535	174174	26547	106	297	76430	10981
Katowice	1146119	832019	86339	628	7945	214144	5043
Myslowice	30116	232071	23642	475	408	44361	158
Piekary Slaskie	129875	77030	20222	123	287	31490	720
Ruda Slaska	510416	258226	67563	1297	547	132602	50180
Siemianowice Sl.	192045	121950	28805	573	271	37581	2865
Sosnowiec	607990	364131	55607	244	1172	126482	60354
Swietochlowice	123983	65910	22439	799	77	34723	33
Tychy	427281	272315	35174	4895	7691	87201	20004
Zabrze	549820	303633	67666	6295	680	159721	11824

Tab. 67. Revenue of the GZM-region's cities budgets by type in Euro, 2007

Cities	Total	Own revenue	Appropriated allocations from the state budget	Allocations received from appropriated funds	Appropriated allocations received for tasks realized on the basis of self-go -vern-ment agreements	General subsidies	Funds for additional financing of own tasks from other sources
In thousands Euro							
Bytom	11618	60076	17730	470	126	31772	6004
Chorzow	83084	46865	11529	162	661	22399	2067
Dabrowa Gorn.	10318	73924	8435	139	85	20123	478
Gliwice	175380	114451	13739	465	1112	35226	10370
Jaworzno	68013	42378	6459	257	72	18596	2671
Katowice	27886	202436	21007	153	1933	1808	1227
Myslowice	7327	56464	5752	115	99	52103	38
Piekary Slaskie	31600	18742	4920	30	70	10793	175
Ruda Slaska	124189	62829	16438	315	133	7662	12209
Siemianowice	46726	29671	7008	139	66	32263	697

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Sosnowiec	147929	88596	13529	59	285	9143	14684
Swietochlowice	30166	16036	5459	194	19	8448	8
Tychy	10396	66256	8558	1204	1871	21217	4867
Zabrze	13377	73876	1646	1531	165	38861	2877

Tab. 68. Expenditure of the GZM-region's cities budgets by division in PLN, 2001

Cities	Grand total	Of which						Property expenditure
		Allocations	Benefits for natural persons	Total	Of which			
					Wages and salaries	Contributions to compulsory social security and the Labour Fund	Purchase of materials and services	
In thousands PLN								
Bytom	378295	11361	36340	306656	138566	25203	131179	6889
Chorzow	244637	24222	27707	132156	80478	14009	32841	45535
Dabrowa Gorn.	278722	16792	21409	181250	105521	17970	51459	39370
Gliwice	499362	499362	35989	346685	153772	25115	157541	66546
Jaworzno	180406	11742	13478	132813	76078	13642	38730	19395
Katowice	898864	66061	52852	488492	265572	46510	160236	257580
Myslowice	136035	10506	14445	94392	55815	9682	25709	10214
Piekary Slaskie	93425	3839	9801	71349	41092	7503	19939	3532
Ruda Slaska	276900	15070	25529	195975	101570	18167	70454	29674
Siemianowice	128272	3992	15781	94261	45277	8226	38290	8352
Sosnowiec	455995	41008	32092	291877	144057	25308	104102	61932
Swietochlowice	98343	5556	12747	62299	32213	5801	22190	10211
Tychy	268724	24195	21410	176137	109373	19146	41268	39567
Zabrze	391835	30902	39777	260873	110299	19878	123460	46547

Tab. 69. Expenditure of the GZM-region's cities budgets by division in Euro, 2001

Cities	Grand total	Of which						Property expenditure
		Allocations	Benefits for natural persons	Total	Of which			
					Wages and salaries	Contributions to compulsory social security and the Labour Fund	Purchase of materials and services	
In thousands Euro								
Bytom	94042	2764	8842	74612	33714	6132	31917	1676
Chorzow	59522	5893	6741	32154	19581	3408	7990	11079
Dabrowa Gorn.	67815	4085	5209	44100	25674	4372	12520	9579
Gliwice	121499	12150	8756	84352	37414	6111	38331	16191
Jaworzno	43894	2857	3279	32314	18510	3319	9423	4719
Katowice	218702	16073	12859	11885	64616	11316	38987	62671
Myslowice	33098	2556	3514	22966	13580	2356	6255	2485
Piekary Slaskie	22731	934	2385	17360	9998	1825	4851	859
Ruda Slaska	67372	3667	6211	47682	24713	4420	17142	7220
Siemianowice	31209	971	3839	22934	11016	2001	9316	2032
Sosnowiec	110948	9978	7808	71016	35050	6157	25329	15068
Swietochlowice	23928	1352	3101	15158	7838	1411	5399	2484
Tychy	65383	5887	5209	42856	26611	4658	10041	9627
Zabrze	95337	7518	9678	63473	26837	4836	30039	11325

Tab. 70. Expenditure of the GZM-region's cities budgets by division in PLN, 2007

Cities	Grand total	Of which							Property expenditure	
		Allocations	Benefits for natural persons	Total	Of which			total	Of which investment expenditure	
					Wages and salaries	Contributions to compulsory social security and the Labour Fund	Purchase of materials and services			
In thousands PLN										
Bytom	472699	14063	73302	307595	175908	32679	83100	59879	59000	
Chorzow	322051	44449	58203	170916	98704	18276	43421	36688	36678	
Dabrowa Gorn.	410556	22645	35029	258411	134225	24191	70051	413535	41335	
Gliwice	720975	45370	57592	396484	165545	29329	183737	199212	182892	
Jaworzno	294860	22255	22751	176471	93613	17181	56876	66835	60401	
Katowice	1017029	92505	96022	526546	291094	54018	149218	223723	208579	
Myslowice	235604	182651	26611	141974	76642	14178	44378	29464	21683	
Piekary Slaskie	121060	5882	18686	84815	50257	9182	22825	5970	2225	
Ruda Slaska	519459	22565	47901	253542	143566	26300	71144	176943	175763	
Siemianowice	188707	9122	30478	122234	59342	10723	46760	13105	13105	
Sosnowiec	577319	31425	61661	320467	181424	33550	87093	138703	137718	
Swietochlowice	127364	7580	22048	74525	41467	7286	21786	19150	19050	
Tychy	378436	43224	37357	37357	116046	21011	56829	84294	81514	
Zabrze	522652	48272	69830	69830	143709	26127	108456	94227	89927	

Tab. 71. Expenditure of the GZM-region's cities budgets by division in Euro, 2007

Cities	Grand total	Of which							Property expenditure	
		Allocations	Benefits for natural persons	Total	Of which			total	Of which investment expenditure	
					Wages and salaries	Contributions to compulsory social security and the Labour Fund	Purchase of materials and services			
In thousands Euro										
Bytom	115012	3422	17835	74840	42800	7951	20219	14659	14355	
Chorzow	78358	10815	16161	41585	24016	4447	10564	8926	8924	
Dabrowa Gorn.	99892	5510	8523	62873	32658	5886	17044	100617	10057	
Gliwice	175419	42681	14013	96468	40278	7136	44705	48470	44499	
Jaworzno	71742	5415	5535	4251	22777	4180	13838	16261	14696	
Katowice	247452	22507	23363	12811	70825	13143	36306	54434	50749	
Myslowice	57325	44440	6475	34543	18647	3449	10797	7169	5275	
Piekary Slaskie	29455	1431	4546	20636	12228	2334	15535	1452	541	
Ruda Slaska	12639	5490	11654	61689	34931	6399	17310	43052	4276	
Siemianowice	45914	2219	7415	29740	14439	2609	11377	3188	3188	
Sosnowiec	140467	7646	15003	77972	44142	8151	21190	33747	33508	
Swietochlowice	30989	1844	5364	18132	10089	1772	5301	4659	4635	
Tychy	92077	10516	9089	9089	28235	5112	13827	20509	19833	
Zabrze	127166	11745	16990	16990	34966	6357	26388	22926	21880	