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**Master Program in Economic Growth, Innovation  
and Spatial Dynamics**

# Russian Monotowns

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*Abstract:* Monofunctional towns of Russia represent the extreme case of specialized settlements where the socio-economic development mostly or fully depends on the performance of one or a few town-forming enterprises. This phenomenon obtained attention after the Soviet Union collapse, which has resulted in worsening of the socio-economic situation in monotowns. However, since the 2000s the differentiation in the development among monofunctional towns was observed. What can condition such differentiation? In this study an attempt to provide a new perspective, through which monotowns can be studied. The analysis is done in the step-wise manner and based on the developed data matrix and taxonomy of monotowns.

*Key words:* monotowns, monofunctional towns, agglomeration, specialization, lock-ins, functional classification

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# 1. INTRODUCTION

## 1.1. THE SUBJECT TO THE RESEARCH

*Monofunctional towns, or monotowns*, of Russia represent the extreme case of specialized settlements where the socio-economic development mostly or fully depends on the performance of one or a few town-forming enterprises. This phenomenon obtained attention after the Soviet Union collapse, which has resulted in worsening of the socio-economic situation in monotowns. The transition towards a market economy broke the existing linkages that provided functioning of the dominant companies and revealed their weaknesses. Enterprises were not able to face the tough open-economy rivalry due to their uncompetitive production, obsolete facilities and infrastructure, the state non-participation and improper management ([World Bank Report 2010](#), Lappo 2013). The situation was amplified with the “predatory” privatization (Gusev 2012, Lappo 2013) when large plants came to hands of people, some of whom formed the new class of oligarchs a while later. Unlike in the Soviet Union where town-forming enterprises were providing jobs and social services to local residents, nowadays many companies do not perform such social function (Institute of Regional Policy 2008). Despite downgrading of social services, some monotowns meet other severe problems as the demand slump and consequent production decline, the rising unemployment and decrease in wages, the up-ward crime rate and social instability ([World Bank Report 2010](#), Uskova, Iogman, Tkachuk, Nesterov & Litvinova 2012).



Figure 1-1. “Heat-map”: Distribution of Russian Monotowns with the Consideration of their Town Sizes (*the more intensive (red) is the color, the more populated is the area*).

Source: based on the official list of monotowns ([Government Executive Order from 29.07.2014 № 1398-р](#)) and the population data of Russian municipal units ([Federal State Statistics Service 2014](#))

Figure 1-1 gives the insight of the problem's scale. This is the so-called "heat-map" which demonstrates the location of monofunctional towns with the consideration of their population sizes according to the official statistics of 2014 ([Federal State Statistics Service 2014](#)). Thus the more intensive (red) is the color, the more populated is the area. While looking at the map, the following conclusions might be drawn: (1) Russian monotowns are spread almost all over the populated zone of the state, (2) the monotowns' population correlates with the population density in the country, and (3) the large concentrations of monofunctional towns in the certain areas can be observed (as in European Russia, the Urals or the South of West Siberia). In overall, the map shows the wide distribution of monotowns across Russia. Hence this phenomenon is not a problem of one particular region or district, yet of the whole country.

## **1.2. JUSTIFYING THE TOPICALITY OF THE PROBLEM**

One of the first serious attempts of conducting a complex study on the phenomenon of Russian monofunctional towns was made by the scientific and methodological center "Cities of Russia", translated from "Города России" (as 2000 cited in Turgel 2010, pp.31-32). Another approach was presented by the scientific non-commercial foundation "Expert Institute" (as cited in Lappo 2013, pp.162-163). In both studies researchers tried to determine the phenomenon, the criteria which distinguish monotowns, their number, etc. Among more recent studies Turgel's (2010) book about monofunctional towns is worth mentioning. Researcher analyzes the emergence of monotowns, specifying the terminology, investigating the development tendencies of different types of the settlements and policy implications. Geographer-urbanist Lappo (2004, 2013), while considering the historical peculiarities of Russian urbanization process, draws special attention to the phenomenon of monofunctional towns. Notably, there is also a number of other articles, reports and studies dedicated to the same issue (Institute of Regional Policy 2008, [World Bank Report 2010](#), Uskova et al. 2012, etc.).

Nonetheless despite the numerous scientific books and articles written on the investigated problem, researchers themselves admit the absence of universal way to determine and characterize the phenomenon. Hence there is a particular need to continue conducting an analysis of monotowns. First, from the theoretical point of view monotowns represent one of the extreme cases of specialization, which make them be more sensitive to economic changes. Second, according to Institute of Regional Policy research (2008) monotowns form the base of Russian economy. Their enterprises produce the considerable share of the country's GRP. Third, monofunctional towns are numerous, and their population accounts for 9.2 % of total in the country. In addition, monotowns are widely distributed across the country, thus so many regions have such settlements. The problem concerns many citizens in different parts of the country. Finally, as noted in the World Bank Report ([2010](#)), restructuring and reforms are needed in many monofunctional towns. In overall, studies on this phenomenon would contribute to working out development plans and complying policy implications. Hence the further attempts to investigate monotowns should be persevered.

### 1.3. AIM AND CONTRIBUTION

In this thesis an attempt is made to build an analytical framework for studying monofunctional towns of Russia. The aim is to investigate the phenomenon from two different angles (concepts) and try to identify whether there is a relation between them.

First, as mentioned above, monotowns represent highly specialized urban settlements, therefore one theory, through which it is possible to analyze monotowns, is the concept of agglomerations, in particular, localization economies. Considering the latter, different approaches emphasize their certain advantages as well as drawbacks. As Grabher (1993) reckons the former success tends to become a serious barrier blocking the further development for highly specialized territories. These barriers are associated with the difficulties, which specialized towns face to – the so-called “lock-ins” of different types (e.g. functional, cognitive, institutional and geographical).

Second, even though numerous monofunctional settlements suffer from the listed above problems, however scholars note the high differentiation in economic development and living standards among monotowns (Uskova et al. 2012). Thus in the World Bank Report (2010) the unsuitability of “one-size-fits-all” approach is emphasized, for instance, when it comes to rendering the governmental support. Taking into account the fact that monotowns can vary in their development, it is justified to try to categorize them in groups by aggregating similar settlements. Therefore another theoretical framework, through which the phenomenon can be investigated, might be the functional town classification. This might be a concept broader than specialization, and it considers that over time settlements gain particular functions to perform. The latter not necessarily must be economic (as mining, manufacturing or service), but also non-economic (as defense, administration or cultural). Basing on this approach, it is possible to develop a functional monotown classification, which could contribute to better understanding why the differentiation in economic development exist among monofunctional towns.

Following these two concepts, the research question arises, and it can be formulated as follows: *“Can affiliation to a certain functional class of monotowns affect the socio-economic development and cause specific types of lock-ins?”* In order to find an answer to the posed question, the monotowns taxonomy is developed in the analysis. It contains the information on 311 monofunctional towns, which allows to generate the monotown functional classification. The taxonomy also helps to explore whether classes of monofunctional towns have common and inherent to them difficulties and development features, which could indicate the existence of particular lock-ins.

The contribution of this study might be seen with the following aspects. The mentioned above taxonomy can give the broad general picture on monotowns, their industrial and functional structure. The attempt to consider monofunctional towns within the “function-lock-in”

perspective might shed a new light on the phenomenon. If the answer to the formulated research question is positive, the analogue research might help to develop more suitable policy implications regarding various monotowns.

\* \* \*

This thesis is structured as follows. In the next section the background information about Russian monofunctional towns is given. The issues as determining the phenomenon, the historical overview on the monotowns' emergence and identifying current situation are discussed. Afterwards, in the third section the consideration on two theoretical concepts is provided – agglomerations and functional town classification. Then the discussion moves on to the methodology and data applied in the research. The fifth section presents the results of the empirical analysis and discussion on them. In the last part the major research conclusions are highlighted.



## 2. BACKGROUND. SYSTEMIZING THE EXISTING KNOWLEDGE OF MONOTOWNS

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The phenomenon of monotowns has recently received the widespread attention in Russian society. Numerous researchers acknowledge that monofunctional towns stand out in the whole variety of Russian settlements with their unique features and development paths. Thus in this section I am going to provide the overview on the previous research, compare approaches and try to systemize the existing knowledge of monofunctional territories in Russia.

### 2.1. DEFINING THE PHENOMENON

As mentioned, there is no universal definition to the term “monotown”. Moreover, according to some scholars this term is not absolute either (Lappo 2013). In order to identify the most appropriate term and find its proper definition, it is essential to analyze and compare several approaches that are developed on this issue.

First, The Government of the Russian Federation applies two synonymous terms “*monotown*” and “*mono-profile town*” ([Decree of the Government of the Russian Federation from 29.07.2014 №709](#)). The terms imply the municipal units: (1) where a total population exceeds three thousand inhabitants, (2) where a number of employees at dominant enterprises has been at least 20 % of the total economically active population during last five years, (3) which specialize in mining, manufacturing or industrial processing.

The second approach to define the phenomenon is given in Russian Economic Report № 22 ([World Bank Report 2010](#)). The term “*monotowns*” is applied and defined as “[u]rban settlements with economic bases dominated by a single industry or core enterprise”. This definition is the most general. Additionally, Ivashina and Ulyakina (2011) provide a definition which stresses on the weakest side of monotowns: “[e]nterprises and inhabitants are not able to offset the risks coming from the economic environment, and this, in turn, excludes the possibility of monotown’s sustainable development”.

Third, considering the same phenomenon Lappo (2013) applies a different term “*monofunctional town*”. He defines them as “[t]own with a distinct dominant function to perform and weak development (or absence) of other functions”. The researcher notes that, unlike the frequently used “*mono-profile town*”, this term assumes the variety of functions either of which can be dominant in a particular settlement (e.g. scientific naukograds, military bases, railway junctions, ports, energetics and mining centers, centers of timber and textile industries, recreation and cultural centers).

Finally, the fourth approach in defining the phenomenon is presented by Turgel (2010:30-56). She admits that there is a plenty of terms attempting to determine the phenomenon, yet most have certain limitations. For instance, Turgel (2010:30-56) asserts that both “*mono-manufacturing*” and “*mono-industrial town*” are not suitable, because they only apply to cases of industrial specialization and one function – manufacturing. In addition, according to Turgel

(2010:30-56) the latter term comes from the term “*profile*” which has a low informative content, since it is not fully justified what it actually implies in the field of urban and regional economics. Another next term “*town with a town-forming enterprise*” matches with another term “*company town*” (Veselkova, Pryamikova & Vandishev 2011). It is not consistent with the investigated phenomenon either, because it rejects a possibility that a few dominant enterprises might coexist in a settlement. As Lappo (2013), the researcher finds the term “*monofunctional town*” as the most appropriate. It implies a settlement which: (1) performs a limited number of external functions in the macro-territorial division of labor, and (2) is characterized by the low diversification of economic and employment structures.

Taking into account the variety of all mentioned terms which stress on the different characteristics of the phenomenon, I reckon that it is justified to use two synonymous “*monotown*” and “*monofunctional town*”. While reasoning the “*monotown*” term, it is necessary to mention that it: (1) is frequently used among scholars as well as officials, (2) generally describes the phenomenon by highlighting the high specialization of settlements which economic bases are dominated by one or a few town-forming enterprises, (3) covers different municipal units according to Russian Government, thus the official list of monotowns includes towns and urban-type localities ([Government Executive Order from 29.07.2014 № 1398-r](#)). The second term “*monofunctional town*” is consistent with the historical foundation and development of the investigated settlements: as it will be shown below monotowns were usually created in the response to particular needs of the state and were expected to perform specific functions, which in turn might be other than just manufacturing (consequently, the terms “mono-profile”, “mono-industrial” or “mono-manufacturing” are not descriptive enough).

## **2.2. HISTORICAL OVERVIEW ON THE FOUNDATION OF RUSSIAN MONOTOWNS**

The next major question is the foundation and development of monotowns over time. Researchers who consider this issue assert that the foundation of monofunctional towns was strongly dependent on the particular economic, political, scientific and technological conditions during different historical periods. Russian geographers highlight the specific peculiarities inherent to the urbanization process in the country (Lappo 2004). Thus the main urbanization feature is the large number of monotowns, which were founded in the response to the concrete needs of the state. In particular, the rapid industrialization of the 20<sup>th</sup> century provided the great impetus for the emergence of monofunctional towns. The state needs consisted in: (1) the provision of the large country’s territory with administrative centers, (2) the resources development, (3) the formation of the transportation and energetics systems across the country, (4) military and defense needs, and (5) the transformation to the agglomeration type of settlements – the foundation of satellite towns.

Generally many scholars support the idea that the monotowns’ foundation was strongly associated with the needs of the state, which have been emerging over different periods. Among

them are Uskova et al. (2012:6-19) and Turgel (2010:13-21) who provide their perspectives on the question. In general, these perspectives concur with each other, and by considering them together it is possible to distinguish the certain historical stages.

*The first one* began at the end of the 11<sup>th</sup> century when Russian principalities as of Novgorod and Moscow contended for the power establishment in the country. They were founding new towns in order to strengthen their positions while colonizing new territories. This stage continued with the territory development to the North and Siberia. Monofunctional settlements were established due to two major reasons: on one hand, still to support the position of the center, and, on the other hand, to become trading posts which relate the center with new territories, rich in terms of the biological resource availability (Uskova et al. 2012:6-19). Turgel (2010:13-21) generalizes and highlights that at this stage monotowns were founded to become administrative, military, ideological or cultural centers.

The beginning of *the second stage* might be associated with the end of the Golden Horde supremacy<sup>1</sup> in Russia at the turn of the 15<sup>th</sup> into 16<sup>th</sup> century (Uskova et al. 2012:6-19, Turgel 2010:13-21). The colonization of the northern and Siberian areas was proceeded more actively and bastille towns continued to emerge near the state borders. These towns performed administrative, defense and economic functions with the domination of the former two. At the end of this historical stage monotowns started to perform a new function – penitentiary. Thus some northern towns became the destinations for exiled citizens.

*The third stage* was enforced by the Industrial Revolution and its start refers to the epoch of the first Russian emperor Peter the Great at the turn of the 17<sup>th</sup> into the 18<sup>th</sup> century (Uskova et al. 2012:6-19, Turgel 2010:13-21). At this time the focus shifted from Asian part of the country to the Urals. The so-called town-plants were founded which mainly specialized in mining of metal ores and metallurgical production. These settlements could be characterized with the high influence of plants on all spheres of life. The stage further proceeded with the formation of the consumer industry in the central part of Russia where the folk crafts were developing. Meanwhile, in the Asian part of the country new mining settlements emerged. However, with time this dominance of economic functions was changed to the ascendance of non-economic ones, in particular, at the end of the 19<sup>th</sup> century and during the first decades of the Soviet era the penitentiary function had gained its importance when the number of convict settlements grew. In general, the foundation and specialization of monotowns were inherent to the development tendencies in many countries, because it encouraged the formation of industries and their speed-up. Though Russian monofunctional towns were distinguished with the strong state control over plants and resources.

*The fourth stage* began in the 1950s and could be associated with the rapid industrialization and post-war rehabilitation period in the Soviet Union with the great focus on the heavy industry,

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<sup>1</sup> **The Golden Horde** was the khanate, which was established in the middle of the 13<sup>th</sup> century in the territory of Russian state and declared as the part of the Mongol Empire (Waugh 2009).

metallurgy and energetics (Uskova et al. 2012:6-19). At the same time, due to the development of chemical industry the specific type of towns had grown. They gained the particular significance to the state since these settlements represented the centers of nuclear energetics and scientific institutions. Thus these towns became and still are the closed administrative-territorial units (CATU) where enter and exit of the territory are strictly limited. Most of them are naukograds – the towns with high scientific potential. Turgel (2010:13-21) specifies that in the Soviet Union new towns were obtaining very distinct functions, e.g. being mining, machinery, transportation or chemical centers. Nonetheless, at this stage there was another important tendency characterizing the urbanization process in the USSR (Uskova et al. 2012:6-19). The state intended to support small and medium-sized settlements by creating there branches of the large enterprises, therefore, the certain technological linkages emerged among different monotowns. Due to that the interest in creating satellite towns and urban agglomerations grew (Fuchs 1964). In general, the fourth stage is distinguished with strengthening influence from core enterprises on the socio-economic life in towns as well as of greater state control over those companies.

The urban development in Russia had gone through several historical stages at each of which the various functions of monotowns became more apparent. Figure 2-1 summarizes the main points.

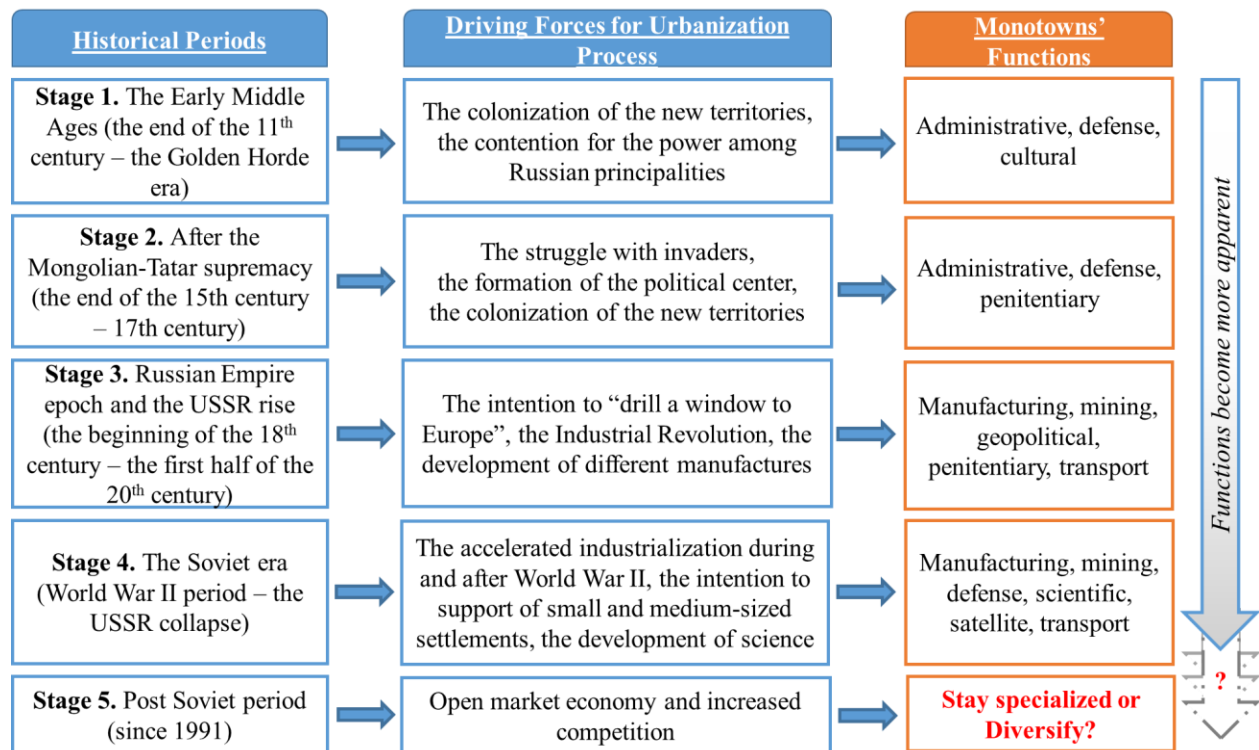


Figure 2-1. Historical Stages of the Urbanization Process in Russia.

Source: based on the perspectives given in research works by Turgel (2010:13:21) and Uskova et al. (2012:6-19)

The left column represents the stages of the urbanization process in the country; the middle one highlights the events and driving forces inherent to each of the stages in the foundation of

monotowns; and the right column contents the prevailed monotown functions. With time new settlements have been gaining more distinct functions to perform, hence the functions have strengthened and become more apparent (this thought is represented with the arrow on the right).

### 2.3. RECENT PROBLEMS AND THEIR CAUSALITY

Many researchers note that due to the absence of unified term and study approach for monofunctional towns it is difficult to identify their exact number. Thus the statistics provided in the World Bank Report ([2010:21](#)) states about 467 towns and 332 smaller settlements, which can be recognized as monotowns. Lappo (2013) shows and criticizes the figure given in the report by the Scientific Non-Commercial Foundation “Expert Institute” – 486 monotowns. He asserts that some large cities and regional centers were unreasonably included in the list, which in fact are multifunctional. However in the consideration of the stylized facts about specialized settlements Duranton and Puga ([1999:7](#)) state that even though there is a positive correlation between city size and the relative diversity index, this relation is not that strong and the exceptional evidence exists, e.g. large Los Angeles (specialized in entertainment) and diversified small Buffalo or Columbus. Turgel (2010:31) gives other statistics by the scientific and methodological center “Cities of Russia” – there are at least 500 monotowns (out of the total 1097 towns in Russia) and 1200 monofunctional urban-type settlements<sup>2</sup> (out of total 1864 in Russia). In contrast to the mentioned above figures, the official statistics points less number of monotowns. Thus 333 monotowns were denoted in 2012 ([The Ministry of the Regional Development Order from 17.04.2012 № 170](#)), 342 monotowns - in 2013 ([The Ministry of the Regional Development Order from 26.07.2013 № 312](#)), and year after their number decreased to 313 ([Government Executive Order from 29.07.2014 № 1398-r](#)).

Although the opinions vary regarding the issue on the number of monofunctional towns in Russia, the scholars agree that nowadays monotowns experience serious difficulties. As Lappo (2013) highlights some monofunctional towns had certain difficulties also during the Soviet times such as e.g. the high workload per an employee of a core enterprise, the family income decrease and the limitations in choices of jobs or education opportunities and leisure activities. However, after the USSR collapse the problems turned to be more extreme and possess dissimilar nature.

Thus *in the 1990s* many monotowns began to experience break of the linkages created and existed in the Soviet planned economy, the decline of production which became uncompetitive, the decrease in real wages and the large proportion of the non-core assets (Uskova et al. 2012:34-55). In addition, town-forming enterprises that used to provide social services to the population have downsized them ([World Bank 2010:22](#)). In overall, the life quality in monotowns could be

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<sup>2</sup> **Urban-type settlement** is a type of localities, launched during the administrative-territorial reform in 1923-1929. These localities include the settlements with the population size between town and rural locality and specialization in the certain type of activity as manufacturing, mining, power generation, etc.

considered as lower than the average of the country. For instance, the crime rate of monofunctional towns was above the Russian average and rising annually. Another aspect concerned the health system. Thus the share of medical professionals in the total population of monotowns was lower than the Russian average (Uskova et al. 2012:39).

During *the period 2000-2008* another tendency could be observed – the differentiation in the living standards among monofunctional towns. For instance, some monotowns benefited and improved their positions compared to other Russian settlements. This concerned the monofunctional towns with export-oriented industries (as oil- and gas-mining, metallurgy, machine and chemical industries). Thus while comparing the average wages within the Ural-Volga region ([Zubarevich 2010:86-92](#)), it was concluded that the leaders were the monotowns metallurgical Magnitogorsk and Nizhniy Tagil, machine-manufacturing Tolyatti and chemical-industrial Nizhnekamsk. As the general trend in monotowns the population decline occurred due to the natural loss and out-migration of economically active population from monotowns. Uskova et al. (2012:40-41) provides the statistics that the total population of monofunctional towns decreased by 0.6 million residents.

*The World Financial Crisis of 2007-2008* has negatively affected the monotowns and sharpened their problems, because monofunctional towns tend to respond faster and stronger to changes (Lappo 2013). This crisis had a great influence on the monotowns that were better off in the previous period – towns specializing in metallurgical, producing of machinery and chemical fertilizers. Thus, for instance, metallurgical production went down by 30 % ([Zubarevich 2010:92](#)). There were the suspensions of production and mass lay-offs at core enterprises, and some of them resulted in the big public protests (Uskova et al. 2012:42, [Aron 2009](#)).

Considering the monotowns' problems Lappo (2013) asserts that, besides the high vulnerability of monofunctional towns to changes, the transformation to a market economy was not coherent and flexible to monotowns. For example, there was not sufficient state support to the core enterprises, which could help companies becoming efficient competitors under new economic conditions. In fact, the “predatory” privatization took place. Gusev (2012) supports this opinion by providing the example of OAO “RUSAL” which mostly specializes in the aluminum production and possesses a number of town-forming plants. He asserts that their owner just benefited profits, but did no investments into the production, therefore, the capacities have run short. This example can be justified by the official list of monotowns – there are a considerable number of companies, which belong to OAO “RUSAL” ([Government Executive Order from 29.07.2014 № 1398-r](#)). Moreover, Lappo (2013) also argues that the officials' proposal to resettle the population of some monotowns is shapeless. First, it could get more costly than providing a financial support. Second, the territorial aspect must be considered in such country as Russia, i.e. the density of settlements across the vast territory. Finally, the monotowns' specialization brings not only drawbacks but also advantages (Lappo 2013:167). Considering the latter statement, the discussion in the following section moves on to considering the phenomenon of monotowns from the theoretical point: first, the advantages and



shortcomings of monotowns' geographical concentration and, second, the functional monotown classification.

\* \* \*

In the conclusion to this section, a few aspects about the existing knowledge of monotowns should be highlighted. First, considering the whole variety of terms attempting to describe the phenomenon, two synonymous terms can be applied in the study – “monotowns” and “monofunctional towns”. The second aspect concerns the issue on the emergence of monofunctional settlements. According to the theoretical approaches, the long tradition in the foundation of such settlements can be observed over centuries. Particular historical events determined the foundation of monofunctional towns in the response to specific needs of the state. With time the functions became more apparent, and the town-forming plants and companies started to a decisive role in the socio-economic life. This led to the situation when monotowns faced severe difficulties at the new stage of their development – after the USSR collapse. Not all enterprises were able to become efficient and competitive under new economic conditions.

### 3. DETERMINING THE THEORETICAL FRAMEWORK

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In this chapter an attempt is made to build an analytical framework for studying monofunctional towns of Russia. In order to find an answer to the question “What makes some cities succeed and others fail?”, numerous researchers consider the advantages and shortcomings of two sides of the agglomeration (geographical concentration) process – specialization and diversification. The former characterizes the phenomenon of Russian monotowns, and by comparing with the latter scholars often undermine strengths and weaknesses of highly specialized settlements. Therefore as the first step in attempting to construct a framework the agglomeration advantages and drawbacks will be considered. Another concept through which we can study monotowns is the functional town classification. Within this concept towns can be aggregated into several groups depending on their dominant function, which develops over time and can be economic or non-economic. Different authors often suggest their own classifications. Consequently, as the second step several theoretical approaches will be considered, and the proposal towards the functional monotown classification will be made. As the final stage of the chapter, main points and a probable analytical framework will be drawn.

#### 3.1. AGGLOMERATION ADVANTAGES AND LOCK-INS

As mentioned, researchers investigate and attempt identifying the causes of the fact that some towns prosper while others fail. In order to find these reasons, scholars analyze the phenomenon of agglomeration economies which Rosenthal and Strange (2003:377) call “the benefits of cities”. Glaeser (2010:1) clarifies “[A]gglomeration economies are the benefits that come when firms and people locate near one another together in cities and industrial clusters”. Hence, what are these benefits of geographical concentration?

The significant preconditions for the occurrence of agglomeration economies consist in the benefits, which might be gained from spatial proximity. Krugman (1991) emphasizes these benefits. He develops the model of geographical concentration by including the key ingredients of economies of scale and transportation costs, which condition the concentrate production. De Groot, Poot and Smit (2008:5) explain the formation of agglomeration economies due to the expected “[e]fficiency and strategic advantage of settlement at specific locations, usually determined by geography (access to water, other resources and the features of the landscape) and the interrelated development of trade routes”. Duranton and Puga (2003) claim about sharing the indivisible public goods, production facilities and market places as the argument for the existence of cities. In addition, agglomerations foster rising local competition, easier information flows, collective learning and faster diffusion of new technologies (Hassink 1997). Maskell and Malmberg (1999) also point the role of spatial proximity in “interactive” learning process, which stimulates innovativeness. Thus residents of a certain region/settlement usually share common language, cultural norms, history and institutional environment, and it results in the emergence of so-called “tacit”, or implicit, knowledge. While the globalized world operates through the



exchange of unexcludable “codified” knowledge (explicitly expressed in codes and other language tools understandable by numerous economic actors all over the world), the use of “tacit” knowledge provides a competitive advantage in generating unique ideas, technologies and products (Asheim & Gertler 2005).

Considering agglomeration economies, two main types can be distinguished: localization and urbanization economies. The former implies the situation when several firms of the same industry benefiting from locating in one place, whereas the latter means that companies of different industries gain benefits from being close to each other ([The World Bank 2009](#)). As it can be understood localization and urbanization economies reflect the cases of specialized and diversified regions/settlements accordingly. Both of these cases are characterized by particular benefits or specific agglomeration externalities.

Agglomeration externalities are often represented with three main groups: urbanization, Marshall-Arrow-Romer (MAR) and Jacobs’ (Neffke, Henning, Boschma, Lundquist & Olander 2011). The first group implies benefits which firms gain from locating in big cities due to the access to large markets, highly educated labor, research centers and wide range of business services. The second group of externalities is more relevant to the investigated phenomenon. They assume the specialization benefits that come from three main sources: (1) the existence of highly skilled labor, (2) the attraction of specialized suppliers, (3) the knowledge transfers due to face-to-face interactions between rival firms as well as among firms, suppliers and consumers. The intra-knowledge spillovers foster growth, because competing firms tend to imitate each other’s products (Glaeser, Kallal, Scheinkman & Shleifer 1992). Therefore, in order to succeed under such tough local rivalry companies need to be innovative, and, as it is known, innovation is a great contributor to growth (Jones 2002, Verspagen 2005, Link & Siegel 2007). Regarding this, MAR would argue that local monopoly facilitates growth because “[i]t allows the internalization of externalities” (Glaeser et al. 1992:1131). Considering the benefits of localization economies, the consequent question arises “Why some specialized towns such as Russian monotowns tend to fail?”

In order to answer it, first, it is important to look at the second case of agglomeration - urbanization economies that can be characterized by Jacobs’ externalities. They imply that economic actors benefit from the industrial diversity in a region/town. It also considers the importance of knowledge spillovers, but this time across different industries (Neffke et al. 2011). Inter-industry spillovers generate so-called cross-fertilization of ideas, which in turn facilitates innovation and, consequently, growth. Local competition is also considered as the force that stimulates innovativeness (Glaeser et al. 1992). By analyzing and comparing these two groups of externalities (MAR and Jacobs’) scholars usually try to identify which group is more relevant to empirical cases. Thus, while doing research about growth in U.S. cities, Glaeser et al. (1992) concludes that industrial diversity facilitates and the specialization, in opposite, reduces the growth. Moreover, scholars note that specialized regions/towns due to their path-dependency are

more sensitive to economic shocks and changes. Thus, for instance, Maskell and Malmberg (1999) reckon that new challenges transform regions' former success into the trajectory-specific lock-ins towards which the discussion is further continued.

The lock-in concept was previously considered by David (1985). He analyzed the QWERTY keyboard's dominance and concluded that certain historical accidents can lead to the situation when a particular technology dominates ("more by chance elements than systematic forces"). Hence the industry gets to be locked in to one technology standard. Arthur (1989) continued the research on how historical events lock out new technologies. He concluded that these events correlate with political interests, prior experiences, etc., therefore, the early-start technology, which in long run does not guarantee sustainable development, might be locked in, and new technologies not able to be adopted.

The lock-in concept was further discussed regarding old industrial areas. One of the popular approaches was developed by Grabher (1993). He analyzed the example of Ruhr area specialized in coal, iron and steel complex. Grabher (1993:256) asserts: "[T]he initial strengths of the industrial districts of the past – their industrial atmosphere, highly developed and specialized infrastructure, the close interfirm linkages, and strong political support by regional institutions – turned into stubborn obstacles to innovation <...> they (regions) fell into the trap of "rigid specialization". He highlights three major lock-ins that old industrial districts tend to face: *functional*, *cognitive* and *political*. The former implies the existence of strong and stable ties between suppliers, producers and customers. This creates the conditions of predictability, which leads to the loss of creativity, because ideas are often drawn from same partners. It directly influences on products' innovation and competitiveness. The cognitive lock-in relates to the functional one. The strong linkages of economic actors result in some sort of "groupthink". Common language, knowledge base and contracting rules, which were previously considered as the positive side ("tacit" knowledge and local knowledge spillovers), turn to become shortcomings. For instance, "groupthink" identifies how new phenomena must be interpreted and whether they should be accepted or ignored. It in turn prevents new ideas and signals for a necessary reorganization of an economy. Maskell and Malmberg (1999) also mention the lack of open communication channels, which produces a "firm-specific blindness" to possible improvements and ignorance of knowledge in strong agglomerations. The last lock-in – political – highlights the strong relations between industry and authorities. At some points they help to direct the development and growth of the industry, however, in long run these relations tend to paralyze innovativeness. Political lock-in could also imply the situation when small local elites form alliances and prevent necessary structural changes in order to protect their own interests (Maskell & Malmberg 1999). In addition, this lock-in can be also reinforced by the dwindling spirit of the Schumpeterian entrepreneur, mentioned by Hassink (1997). The spirit decreases due to the supremacy of large firms (local monopoly). Maskell and Malmberg (1999:173) in general stress the significant role of institutional endowments as "[t]he entrepreneurial spirit, the moral beliefs, the political traditions and decision-making practices, the culture, the religion and other

basic values characterizing the region”. Hence Grabher’s political lock-in can be also considered as *institutional* since it is broader and can include more aspects inherent regional environment.

Grabher’s approach often reflects in more recent research works. For instance, while considering the problematic agglomerations in terms of innovation deficiencies, Tödting and Trippel (2005) assert that strong specialization and mature technological paths lead to lock-in types, distinguished by Grabher (1993).

Despite these lock-ins there is another aspect, which could characterize the backwardness of some monofunctional towns according to Russian researchers. Thus, while considering the peculiarities of monotowns’ development, Lappo (2004) asserts that some settlements were fated for such backwardness. He implies monotowns, which specialize in mining of non-ferrous and precious metals, gas and oil, and locate in areas with severe climatic conditions, in particular, the high north zone. Such monofunctional towns can be hardly diversified. Despite the severe climate and possibility of natural resources’ depletion, the situation might be worsened for such monotowns because of their isolated location from big centers and absence of well-developed transport and social infrastructure (Didyk & Ryabova 2014). Hence these monotowns get locked in geographically. Lappo (2013) reckons that in the case of emergency such monofunctional towns might be even resettled. This kind of *geographical lock-in* is worth being considered along with others due to the fact that, for instance, in Russian Arctic zone monotowns compound 25 % of the total number of towns (Didyk & Ryabova 2014).

To summarize, the discussed theories can be presented in the following graph (Figure 3-1). The general preconditions are highlighted in the blue dotted circle. Further, the discussed advantages of localization and urbanization economies are shown in the right and left boxes. The dotted yellow box represents the thought on the positive outcome of diversification, whereas the dotted red box shows the drawback of specialization, drawn in the comparison between the two types of agglomeration economies. As the previous discussion was held, the dark-red arrow points at the developed lock-in concept.

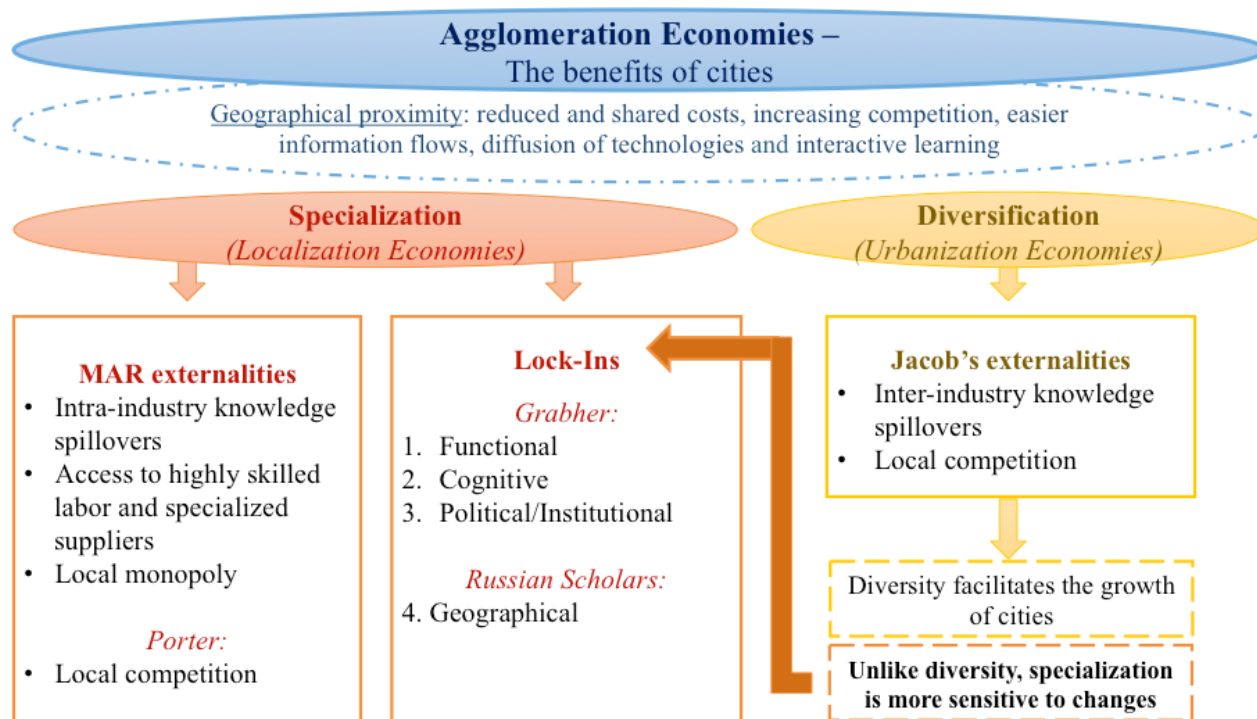


Figure 3-1. Agglomeration Advantages and Lock-Ins

### 3.2. FUNCTIONAL MONOTOWN CLASSIFICATION

As concluded in the previous chapter, Russian monofunctional towns often emerged due to the certain needs of the state, therefore monotowns vary in the functions, which they are dominantly performing. These functions, which can be economic (as mining, manufacturing, service) and non-economic (as defense, administration, cultural), condition the foundation and development of Russian monotowns to a large extent. Hence it is justified to consider and attempt applying approaches, developed by scholars on the issue of functional town classification, to the phenomenon of monofunctional towns.

There is number of studies, where researchers propose different classifications. One of the first approaches was proposed by Aourousseau (1921). Researcher highlights the sharply growing world population. At the same time he also notes that the population tends to expand not all over the world, but in certain areas. Thus his discussion moves towards the urban groups of settlements and their specific geographical locations. Aourousseau (1921:569) reckons that “[f]unction is a driving force in the life of towns”. Accordingly he distinguishes six functions that active towns might dominantly perform: (1) administration, (2) defense, (3) culture, (4) production, (5) communication, and (6) recreation. Regarding the first type, researcher implies capital cities which due to their administrative aims have to be conveniently located, e.g. situate more or less centrally and far from national borders, possess communication and transport infrastructure, etc. Defense towns have peripheral geographical location. These towns are often small in their sizes, yet are large industrial centers. Culture urban settlements include university,

cathedral, art and religion centers. These towns usually situate at the junctions of old routes. The fourth group of settlements perform production function, and their location is conditioned by availability of natural resources and sources of power. Although Arousseau (1921) notes that due to technological changes, in particular, “coming age of hydro-electric power”, the geography of manufacturing towns would expand and vary. Communication towns concern the function of “all acts of transit” (Arousseau 1921:570), hence they are divided in three subgroups: (5.1) collection – implying mining towns and towns where products gather and depot, (5.2) transfer – reflecting market towns with developed transport infrastructure, (5.3) distribution – implying export, import and supply towns. Finally, the sixth class represents recreation towns, which contain health and tourist resorts. Their location is conditioned by climate and scenery. In overall, this approach finds its reflections in the subsequent studies, yet with some differences.

Thus Harris (1943), who considers the classification of cities in the USA, also distinguishes several classes: (1) manufacturing, (2) retail, (3) diversified, (4) wholesale, (5) transportation, (6) mining, (7) university, (8) resort and retirement, and others types of cities. As it can be noticed some groups concur with Arousseau’s classes (1921), for example (in pairs Arousseau (1921) – Harris (1943)):

- production – manufacturing;
- communication (collection and distribution) – mining, and retail and wholesale;
- culture – university;
- recreation – resort and retirement.

The first distinction between two approaches, first, lies in the fact that Harris (1943) distinguishes transportation towns as the separate class, whereas Arousseau (1921) does not explicitly mention this type, however he mentions the transfer function implying market towns with developed transport infrastructure. The second difference concerns two groups of urban settlements identified by Arousseau (1921) – administration and defense. Harris (1943:97) does not classify them, but he reckons regional and political capitals, naval and army bases among “other types of cities”. Finally, Harris (1943) distinguishes the type of diversified cities where manufacturing and trade are well developed, but it is hard to find the dominant one of those. Therefore, even though at the first glance scholars have distinct classifications, in overall they emphasize the same functions and classes of towns.

Another approach in categorizing American towns is provided by Aleksandersson (1956). The researcher analyzes the population distribution and industrial structure of urban settlements. He considers ubiquitous and sporadic industries. The former tend to be present in all towns (e.g. construction, printing, food manufacturing), and the latter do not exist in all urban settlements, but play a big role in the economy of many settlements. Aleksandersson’s approach (1956) might remind the classification of the industrial sector, each of which includes several divisions.

So far the discussion was held in regard to European and American cities back to the twentieth century, yet there were particular attempts to classify Soviet urban settlements. One of

the most well-known approaches was developed by Khorev (1968, 1971). The Soviet and Russian geographer-urbanist highlights the necessity of the complex typology of towns based on two major criteria: (1) city size, and (2) function. Hence Khorev (1968) distinguishes six classes of urban settlements: (1) multifunctional, (2) industrial, (3) service, (4) transportation, (5) recreation, and (6) scientific centers.

Considering the first type, it can be associated with Harris' (1943) diversified towns, however, together with the presence of manufacturing, service, trade and transportation functions Khorev (1968) also highlights the significant role of administrative, political and cultural, the so-called superstructural, elements in these settlements. They are usually of large sizes and represented as capital cities and regional centers. The biggest group is industrial towns which sizes depend on a scale of the industrial complex and quantity of enterprises. Another type is service towns which are close to multifunctional towns, because they implicate district centers which also specialize in several fields (trade, manufacturing, administration, transportation, etc.). Transportation centers form the fourth class and imply urban settlements with industrial and transportation employment. The next group is recreation settlements with major industrial and healthcare employment. Finally, scientific centers are represented as the experimental type of settlements which development is promising (back in that time). Noteworthy Khorev (1968) specifies some limitations of such classification. First, he assumes the possibility of exceptions when towns might possess features of several classes, thus the classification is a generalization. Second, relying on the limited data and, consequently, not numerous criteria is a big scope for research. Nevertheless, as researcher points, there is the particular importance of the town classification. According to Khorev (1971), elaboration of such classification contributes to: (1) the complex study on urban settlements, and (2) planning of town development (including a determination of more optimal town sizes and rational allocation of labor force).

One the recent classifications is given in the revisited work of Freestone, Murphy & Jenner (2003) on the functions of Australian towns. Researchers distinguish industrial clusters of the settlements, which remind the mentioned approaches, e.g. administration and defence, power generation, diversified, tourism, agricultural service, mining, transportation and specific types to Australian case – aboriginal remote and land trust.

Considering the discussed approaches, the question arises: “Which classification might be applied to the phenomenon of monotowns?” The answer is: in the combination of these approaches it is possible to obtain more appropriate categorization. The following elements derived from the functional classification approaches might be implemented (Figure 3-3). Thus Aurousseau (1921) and Harris (1943) determine general classifications which can be taken as the base. In addition, Aurousseau's (1921) geographical location which would draw an overall picture on where Russian monotowns tend to locate according to their different classes. At the same time it should be remembered that most of monofunctional towns would belong to the broad manufacturing type, however, their development varies. Therefore it is essential to consider Alexandersson's (1956) approach, who emphasizes number of industries, which could

dominate in urban settlements. For instance, while analyzing mining as well as manufacturing towns it is possible to consider several sub-classes (exemplary ones are shown in Figure 3-3). Khorev’s (1968, 1971) approach is significant since it investigates and classifies Soviet urban settlements. Considering the previously distinguished town types and comparing them with Soviet classification two classes might be excluded. Another important element of Khorev’s approach is to analyze the criterion of city size. It reflects urbanization externalities and would allow to see the relation “function-size”. Finally, the work by Freestone et al. (2003) gives more recent view on the question of functional classification and would help identifying the classes.

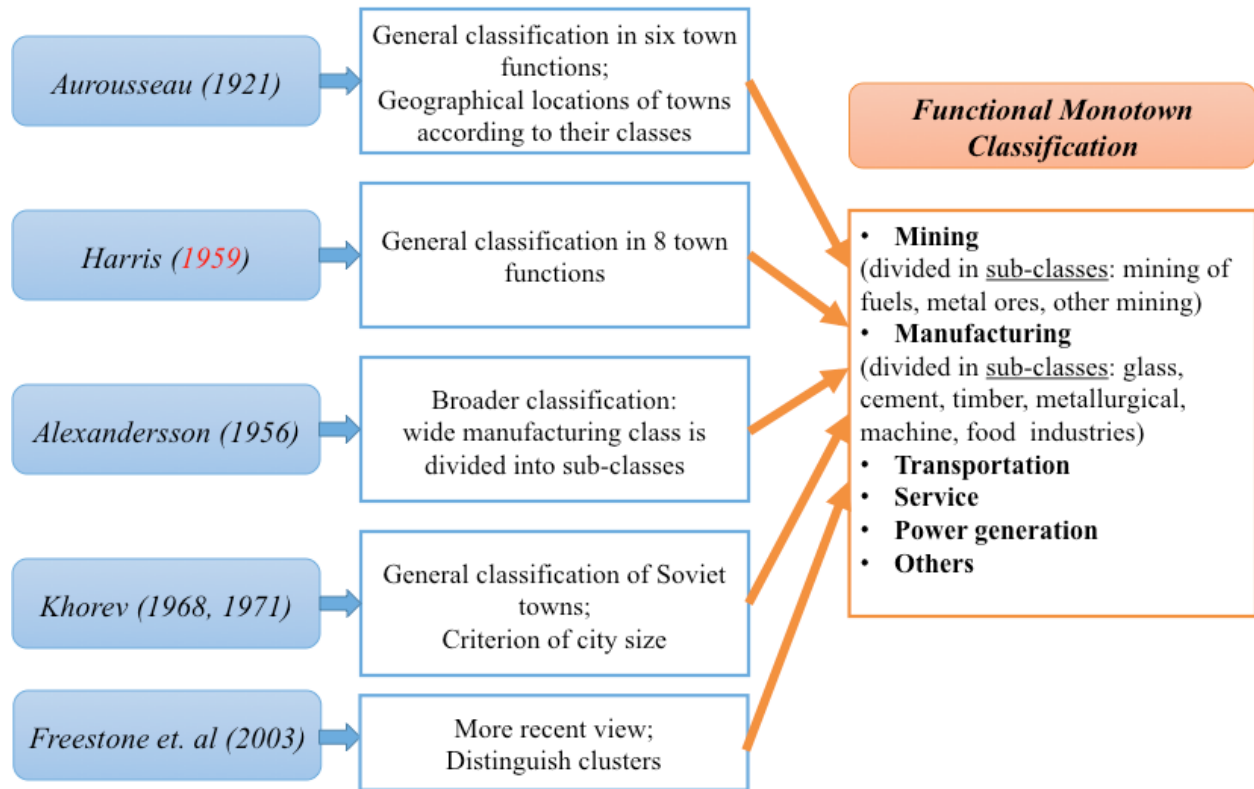


Figure 3-2. Identifying Functional Monotown Classification

\* \* \*

From the discussion on the monotowns' foundation and theoretical background the major conclusions can be derived: (1) Russian monofunctional towns usually emerged due to the particular needs of the state and obtained particular functions to perform, (2) nowadays most of them experience severe difficulties, however there is a high differentiation in the living standards among various monotowns, (3) according to theoretical frameworks specialized towns tend to face different problems, or lock-ins, together with experiencing some agglomeration advantages. The brief summary of the discussed approaches is given in Figure 3-4.

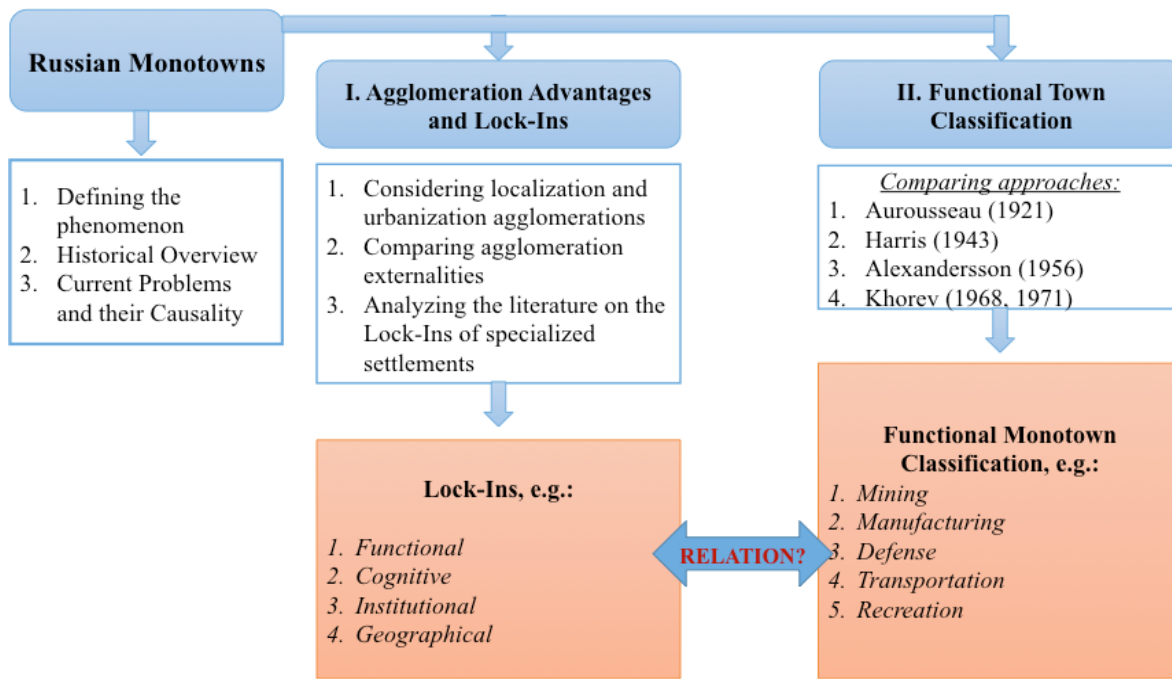


Figure 3-2. Building an Analytical Framework

In this study an attempt is made to build an analytical framework for investigating monofunctional towns of Russia. Thus monotowns can be theoretically analyzed from two angles: (1) the functional monotown classification, and (2) the discussion on monotowns' development and possible drawbacks (lock-ins). Following it, the research question can be formulated as follows: "Can affiliation to a certain functional group of monotowns affect the socio-economic development and cause specific types of problems and lock-ins?"



## **4. DATA AND METHODOLOGY**

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In order to find a proper answer to the formulated research question, it is essential to identify a design, methods and data sources, which are appropriate and credible for investigating the phenomenon. The goal of this chapter is to consider the following issues: (1) research purpose, objectives and design, and (2) data selection and methods of the analysis.

### **4.1. RESEARCH PURPOSE, OBJECTIVES AND DESIGN**

As Saunders, Lewis and Thornhill (2009) asserts, depending on a type of the posed question, a certain research design might be chosen. In this study the research question is exploratory in its nature, since it is raised in the attempt to look at Russian monotowns from a different perspective by combining two theoretical frameworks and finding the relation “function – specific problem/lock-in”. Answering this research question demands achieving the particular objectives. Thus in order to investigate the phenomenon, it is necessary to: (1) look at the roots to which the foundation and development of monofunctional towns are traced, (2) determine the specialization of monotowns, (3) categorize towns into functional classes, (4) develop a monotown taxonomy, and (5) consider the difficulties which are inherent to the particular groups of monotowns. By attaining these objectives, the research purpose can be pursued. The purpose consists in identifying whether the new perspective works for investigating the phenomenon.

Taking into account the purpose and objectives, it is justified to do a qualitative study which can deal with primarily secondary data and help generating the analytical framework – “[a] network of linked concepts and classifications” which attempts to understand the phenomenon (Newton Suter 2012:344). The exploratory research question requires applying a search of the literature as the way to conduct a study (Saunders et al. 2009). Therefore, in order to meet the objectives, the particular descriptive information about Russian monotowns should be collected such as data on their foundation, population sizes, specialization, dominant enterprises, problems, etc. This information would allow to draw a broad picture of monofunctional towns and to conduct the analysis along with data collection.

### **4.2. DATA SELECTION AND METHODS**

According to Newton Suter (2012) the most common sources of qualitative data are interviews, observations and documents. In this study the latter forms the information core for the analysis due to the particular reason. The major difficulty is conducting a study about monotowns with the implication of quantitative data. Unfortunately, there is no sufficient statistical database on Russian monofunctional towns, not to mention that there is no common knowledge about their exact number. Also it is often not possible to find valid information about socio-economic development of small settlements and performance of their dominant companies. This limitation leads to the need to opt for more accessible documentary data, which can be

collected from books and journal articles, newspapers and magazines, governmental publications and official statistics (Denscombe 2003). Hence, the method applied in this research is document analysis.

Bowen (2009:27) defines document analysis as “[a] systematic procedure for reviewing or evaluating documents – both printed and electronic <...> in order to elicit meaning, gain understanding, and develop empirical knowledge”. Though the major difficulty of applying such method should be taken into account beforehand. This difficulty can be associated with evaluating the documentary sources (Denscombe 2003). The credibility, authenticity and representativeness of the sources are very important issues while working with secondary data. In order to avoid selecting biased and non-relevant information, the triangulation principle has to be considered in a qualitative research. It implies the involvement of cross-checking multiple data sources in order to “[i]ncrease trust in the validity of the study’s conclusions” (Newton Suter 2012:350). Therefore, while selecting and analyzing the information as well as drawing conclusions, several documentary sources are considered in this study.

What kind of documentary data can be used in order to accomplish the formulated above objectives? Drawing the broad picture on monofunctional towns has to start with determining the settlements suitable for the study. One accessible source is the official data of 2014, which presents the general information about the number, names and types of monotowns as well as the regions they are located in ([Government Executive Order from 29.07.2014 № 1398-r](#)). Monofunctional towns divided into three large categories depending on the socio-economic situation, which might be: (1) unstable, (2) with risks of worsening, and (3) stable. As it is stated on the official website of the Government (2014), these categorization is based on the information about: (1) economic development and labor market in the settlements, (2) the performance indicators of town-forming enterprises, and (3) the situation assessment from local residents.

Doubtless, on one hand, relying on this data might result in a certain limitation. The official statistics could not cover all Russian monofunctional towns since it considers just mono-profile settlements that specialize in mining and industrial processing. Therefore, settlements, which perform non-economic functions might be excluded from the analysis forcedly. In addition, even some towns are not included in the official list as those, which specialize in the export-oriented mining of oil and gas. However, on the other hand, the official list of monotowns is the only accessible source. It indeed includes most settlements, which can be considered as monotowns. In this regard, at the starting point this official information would allow to shed light on the phenomenon. It also should be noted that the list includes 313 settlements, however, the analysis is done on 311 out of them (excluding 2 towns of Crimea due to the current political situation and the lack of data on their development).

The analysis can be done in the stepwise manner. At first, it is important to select the data relevant in terms of the determined research objectives and form a matrix applicable for the analysis. This matrix consists of the information gathered from different sources of data, which would help to investigate the phenomenon.

*First of all*, the matrix includes the background information on when and due to which events monotowns have emerged and developed. The source for discovering such data is the public encyclopedia of Russian towns and regions “[My towns](#)” (translated from "Народная энциклопедия городов и регионов России "Мой Город"). This information is analyzed together with the historical data posted on official webpages of the administrative units. *As the second element*, the data on the settlements’ population sizes is taken from the official statistical publication ([Federal State Statistic Service 2014](#)). *Third*, the matrix also includes the information on town-forming enterprises, most of which are given and can be gained from the previous official lists of monotowns issued in 2012 and 2013 ([The Ministry of the Regional Development Order from 17.04.2012 № 170](#), [The Ministry of the Regional Development Order from 26.07.2013 № 312](#)). For missing towns and urban-type settlements the data about dominant plants and companies might be selected from the news publications at the official webpages of Russian authoritative media groups (as "[Kommersant](#)", "[Vesti](#)", "[RosBusinessConsulting](#)", "[RIA Novosti](#)"). *Fourth*, the specialization of monotowns can be identified by reviewing the information on main production of town-forming enterprises. Such data is usually available at the official websites of the companies and the mentioned news publications. *Fifth*, based on this information, monotowns can be distributed to several industrial divisions according to the international classification of economic activities prepared by the United Nations Statistics Division ([International Standard Industrial Classification of All Economic Activities 2008](#)). Relying on such matrix, it becomes possible to start the analysis with classifying the settlements into certain functional groups.

Further, the attempts to generate some patterns can be made. In particular, the existence of the following relations can be tested: (1) function – period of foundation, (2) town size – function, and (3) town category – function. While doing the analysis the data can be visually represented in diagrams, histograms and maps.

The information matrix and subsequent analysis create rather solid material for building the taxonomy of Russian monofunctional towns at the next stage. The latter considers the largest functional monotown classes together with their categorization proposed by the government (unstable, with risks of worsening and stable socio-economic situation). Based on this taxonomy, it would be possible to see whether some group of monotowns has preconditions for the presence of specific problems and lock-ins. If such preconditions are found, the particular monofunctional towns should be considered. While holding the discussion, certain data sources are applied in the analysis: (1) scientific journals dedicated to the issues of recent development and problems of particular monotowns, (2) official websites of the settlements, and (3) mentioned above news

publications. This step would help to identify what types of problems/lock-ins are inherent to the monotowns.

In overall, considering the certain difficulties in conducting this research, nevertheless, while doing the study, it gives the fair opportunity to attain a broad picture on the monotowns and attempt to bring a new perspective in investigating the phenomenon. And in spite of the limitations of applying the documentary analysis method, I believe that such research would be able to contribute to better understanding and extending the knowledge about Russian monofunctional towns.

## 5. EMPIRICAL ANALYSIS

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While analyzing the empirical evidence of Russian monofunctional towns, at first the monotown matrix can be developed. In my opinion, this matrix, which gives the general information and classification of monotowns, would contribute to better and more systematized understanding of the phenomenon. As soon as it is provided, it might become possible to develop monotown taxonomy and consider whether the functional monotown classes differ from each other in experiencing specific types of problems and lock-ins. Hence, this chapter includes the sections where I attempt: (1) to investigate the phenomenon by generating the matrix and mapping Russian monofunctional towns, (2) to proceed with the functional monotown classes together with their categorization (develop a taxonomy), and (3) to identify specific problems and lock-ins.

### 5.1. MAPPING RUSSIAN MONOFUNCTIONAL TOWNS

#### 5.1.1. Considering the Emergence of Monotowns

As previously discussed, the crisis of 2007-2008 had a considerable impact on monotowns, and for some of them it resulted in such problems as production decline or stoppage and unemployment increase (Uskova et al. 2012:42, [Aron 2009](#)). This followed by the socio-economic crisis and mass demonstrations. The most known demonstration occurred in Pikalyovo in 2009 (Veselkova et al. 2011). This monotown specializes in cement and chemical industries and belongs to the category of monofunctional towns with the unstable socio-economic conditions according to the government ([Government Executive Order from 29.07.2014 № 1398-r](#)). After mass demonstrations the federal authorities reacted and made the decision to develop a program of the federal support to monotowns (Veselkova et al. 2011). Nowadays the Federal Ministry of Economic Development is defined as the supervisory executive authority responsible for monitoring and controlling the socio-economic situation in monofunctional towns ([the official webpage of the Ministry 2015](#)).

Since 2009 every year the government issues the list of monotowns, while monitoring the situation. Basing on the official list of 2014 and the collected data on the foundation, population, specialization and town-forming enterprises, the monotown matrix is developed. The latter also contains the functional classification of the settlements (Table A-1 in the Appendices). Considering this information matrix, the following aspects can be subjects to the analysis: (1) foundation of the considered settlements, and (2) the monotown classes.

The developed matrix presents the information about the emergence of Russian monofunctional towns. As it can be seen, the settlements have been emerging over centuries since 862 when Rostov, the first of the considered monotowns, was founded (Figure 5-1). In general, the number of new settlements was increasing since the 14<sup>th</sup> century. Considering the events, which might characterize the foundation of monotowns, the particular tendency can be

noticed: the settlements were emerging due to the specific reasons in the different time periods. For instance, during the Middle Ages and up to the 1750s many of the considered monotowns were established as forts and defense points and situated at the country's borders in order to repulse the forces of invaders. With time the administrative function gained the importance. Thus during 1775-1785 the new administrative territorial reform was launched in Russia ([the official webpage of Presidential Library](#)). Due to this many of the considered settlements were founded as the centers of *uyezds*<sup>3</sup>. Additionally, due to the territorial expansion some forts lost their defense function and were transformed to uyezd centers.

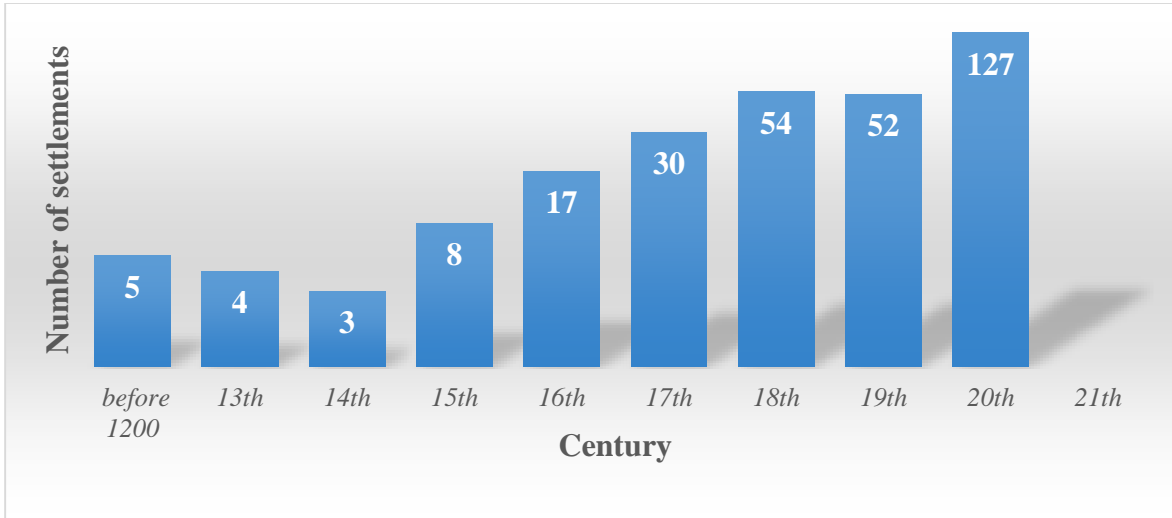


Figure 5-1. Histogram: Emergence of the Monofunctional Towns over Time since 862

Sources: based on the official list of monotowns ([Government Executive Order from 29.07.2014 № 1398-r](#)) and the information on the foundation of the settlements (e-source [“Public encyclopedia of Russian towns and regions “My Town”](#))

During the 19<sup>th</sup> century, which are strongly associated with the Industrial Revolution in Russia, the manufacturing function became dominant in the foundation and development of the monotowns. Even more important role this function gained during the 20<sup>th</sup> century, because of the rapid industrialization and the series of five-year plans for economic development in the USSR. Thus over these two centuries many industrial towns emerged and the uyezd centers became the placement for new plants. The mining settlements have been emerging over several centuries, but most were founded during the 19<sup>th</sup> and 20<sup>th</sup>. The first mining settlement of the considered monotowns was founded in 1626 (Salair) and the last one in 1956 (Volchansk).

A plenty of the considered monotowns grew from rural settlements to towns or urban-type settlements. When a settlement became a town or urban-type settlement, it could imply that it had received a certain impetus for its further development, which led to the population growth, changes in the economic structure and infrastructure. What was the impetus?

<sup>3</sup> Uyezds were the administrative subdivisions in the Russian Empire.

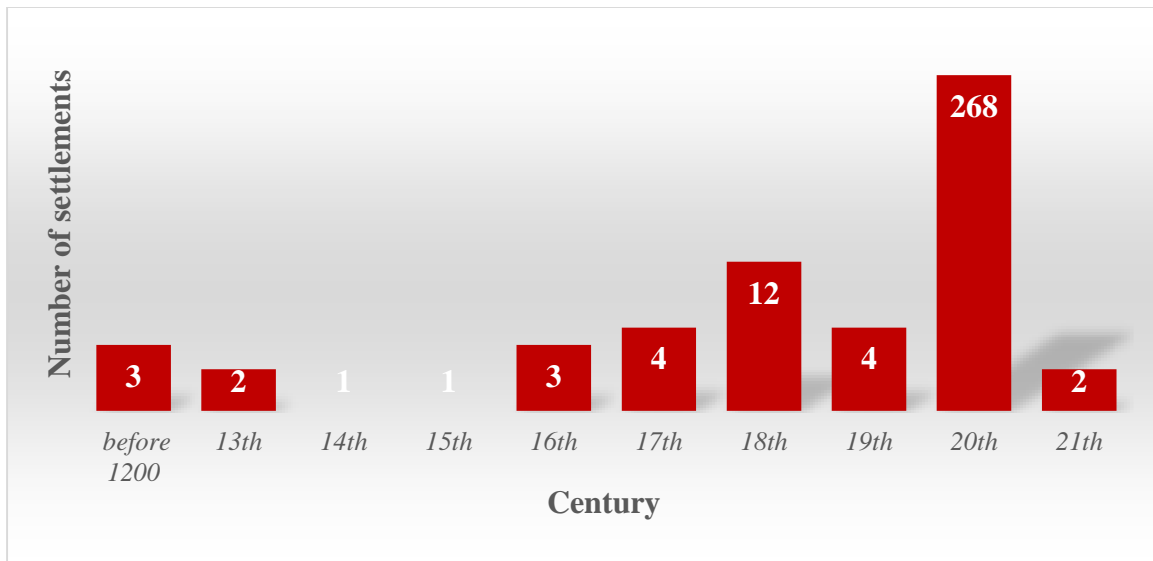


Figure 5-2. Histogram: Periods when the Settlements were Declared Towns/Urban-type Settlements  
 Sources: based on the official list of monotowns ([Government Executive Order from 29.07.2014 № 1398-r](#)) and the information on the foundation of the settlements (e-source [“Public encyclopedia of Russian towns and regions “My Town”](#))

If we consider the information on years when the settlements were declared a town/urban-type settlement, the picture would look different from the foundation data. The histogram (Figure 5-2) demonstrates explicitly that even if monotowns have been emerging over centuries, most of them gained the new status during the Soviet times. Thus 127 towns were founded and other 141 settlements were declared towns/urban-type settlements during the 20th century. Reviewing the data on the foundation of monotowns (Table A-1), the particular sequence of events can be noticed for several settlements: (1) the railroads and railway stations were constructed in the end of the 19<sup>th</sup> – beginning of the 20<sup>th</sup> century, (2) the settlements gained new specialization due to the foundation of factories/plants during the Soviet times, and (3) the settlements got new town/urban type settlement status. Therefore, the first two events can be considered as the impetus for further development of the settlements.

Doubtless, most monotowns grew and developed in the planned economy of the USSR. The following histogram shows the number of monotowns, which were declared towns/urban-type settlements during the 20<sup>th</sup> century (Figure 5-3). As it can be seen, the most "productive" decades (in terms of the number of newly declared towns and urban-type settlements) were the 1930s, 1940s and 1950s. The explanation might be the following: (1) the rapid industrialization, (2) the growing importance and accelerated development of the military-industrial complex during the World War II, and (3) the rehabilitation post-war period.

In overall, the empirical evidence of the given monofunctional towns support the approaches to the question of the monotowns' foundation and development. While analyzing the monotown matrix, the following conclusions can be drawn: (1) indeed, monotowns have been emerging over centuries, (2) however most of them were founded or received development

impetus during the Soviet times, and (3) together with the fact according to which monotowns' specialization has become more apparent over the historical stages (Figure 2-1), another tendency can be noticed. Some monotowns tended to change their functions in the different time periods, e.g. from forts they were becoming the settlements with a penitentiary function, then a manufacturing or mining center.

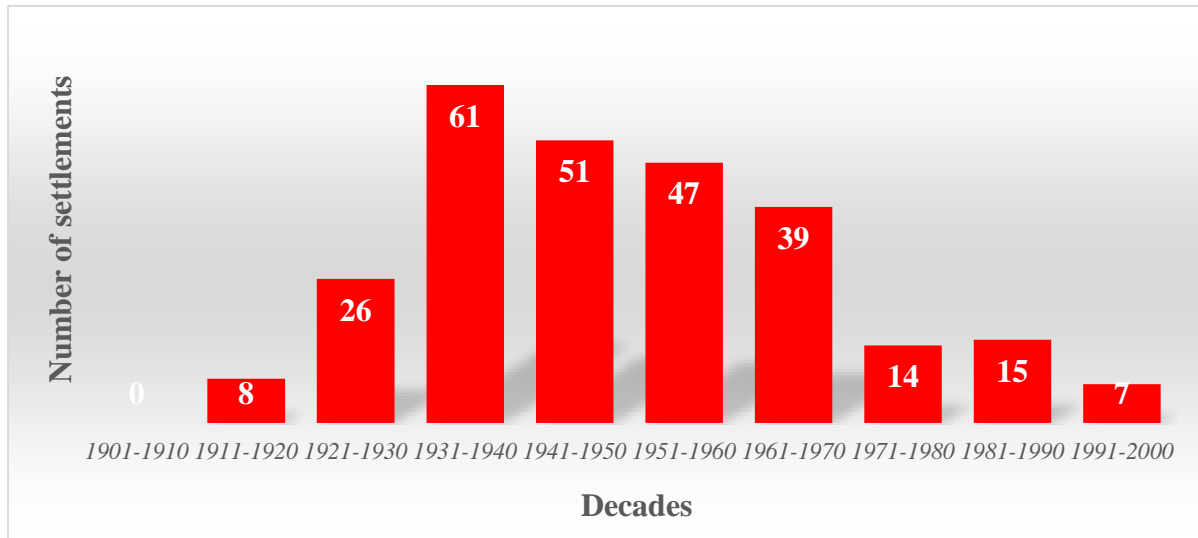


Figure 5-3. Histogram: Periods when the Settlements were Declared Towns/Urban-type Settlements in the 20th century

Sources: based on the official list of monotowns ([Government Executive Order from 29.07.2014 № 1398-r](#)) and the information on the foundation of the settlements (e-source "[Public encyclopedia of Russian towns and regions "My Town"](#)")

### 5.1.2. Defining the Functional Classes of Monotowns

Based on the data about town-forming enterprises in the monofunctional towns, their specialization and functional classification can be determined. Both are included in the monotown matrix (Table A-1). Before going into the discussion, it should be noted that the classification is developed for 310 monotowns. *Svetliy Selsovet*, a rural settlement located in Orenburg Oblast with 3 319 inhabitants, is excluded from this part of the analysis due to the lack of information.

In the classification the following functional groups of monotowns are distinguished: (1) *manufacturing*, (2) *mining*, (3) *monotowns with two major activities*, and (4) *others* (which include transportation, power generation, scientific, agriculture, and construction). The monotowns of different classes are differently distributed across the country Figure 5-4. These classes also vary in their sizes (Table A-2 in the Appendices).



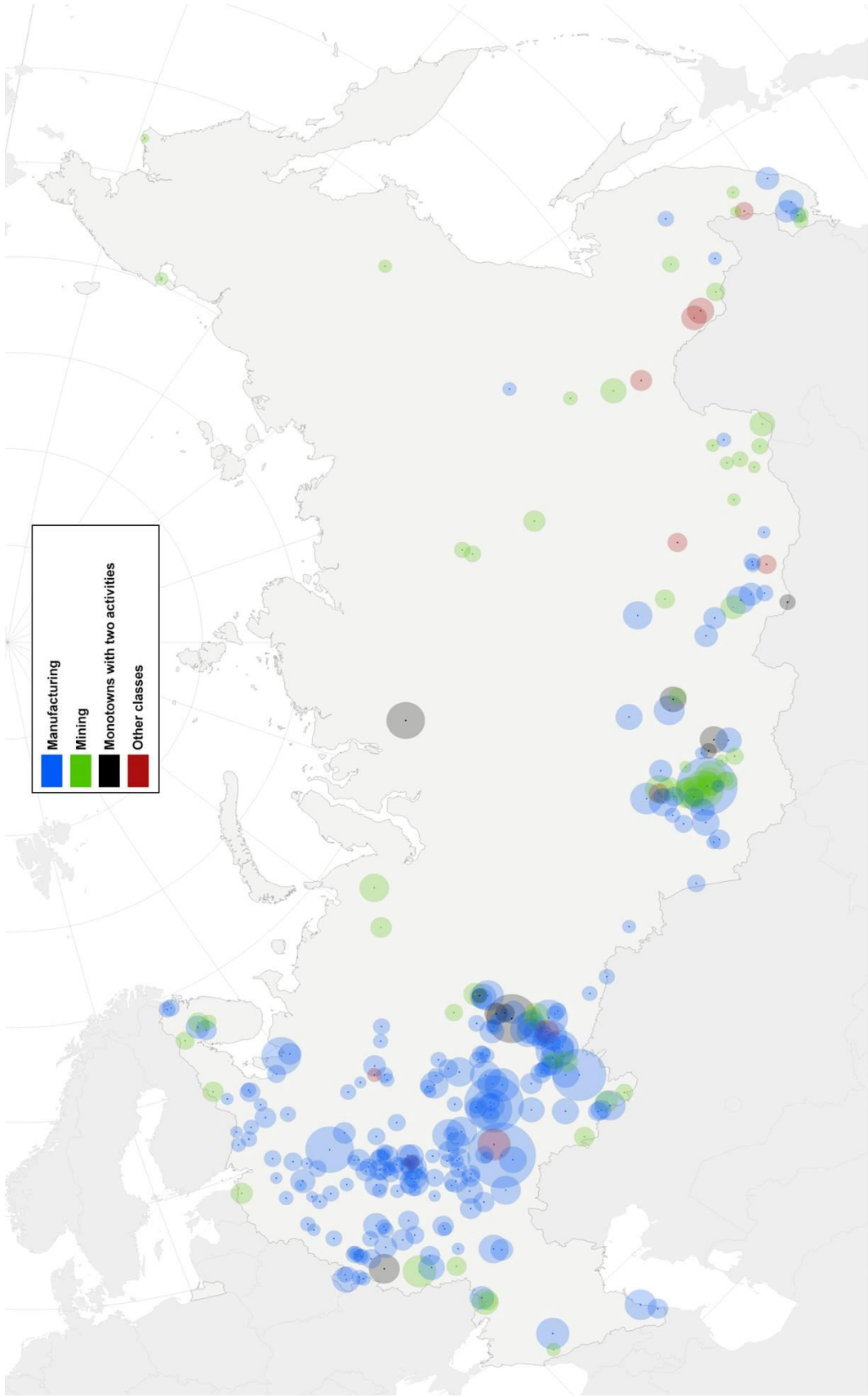


Figure 5-4. Russian Monofunctional Towns according to their Functional Classes

All maps are created by Anton Andersson, a student enrolled in "Information and Communication Technology" Program at LTH  
 To get better quality picture, click the link: <http://teip.github.io/monotowns/?all>

**Manufacturing class.** As expected, the majority of the considered monofunctional towns belong to the manufacturing class, i.e. 226 settlements or 73 % of the total number (Figure 5-5).

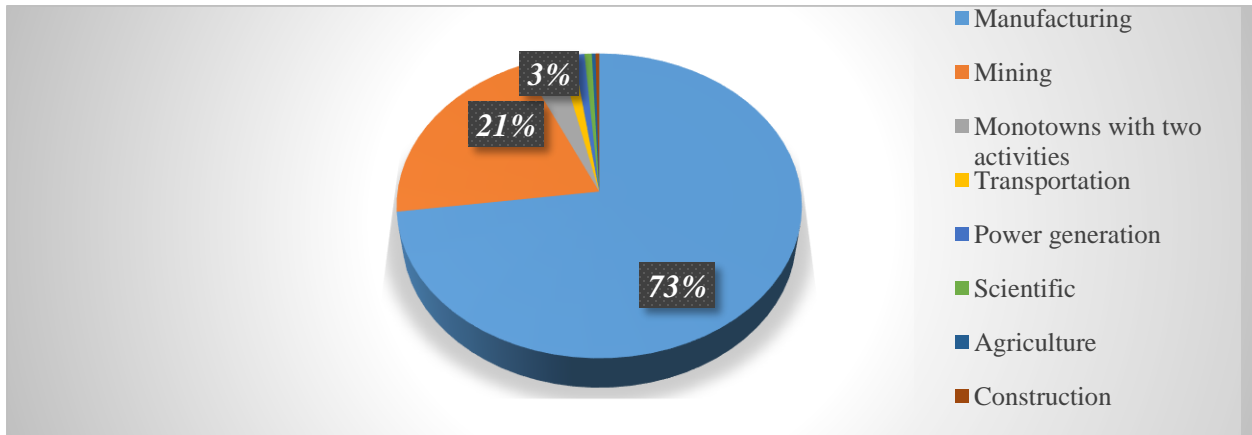


Figure 5-5. Distribution of monofunctional towns among functional classes

Source: based on the official list of monofunctional towns ([Government Executive Order from 29.07.2014 № 1398-r](#)) and the developed functional monofunctional town classification

The manufacturing monofunctional towns specialize in different industries. In order to see their industrial structure, the settlements are categorized according to the International Standard Industrial Classification of All Economic Activities (2008). The general information on the manufacturing monofunctional towns is provided in Table A-3 (in the Appendices). Considering the number of towns assigned to different class divisions, it can be noticed that the majority of the manufacturing settlements belong to three groups: metallurgic, machine and timber industries (Figure 5-6).

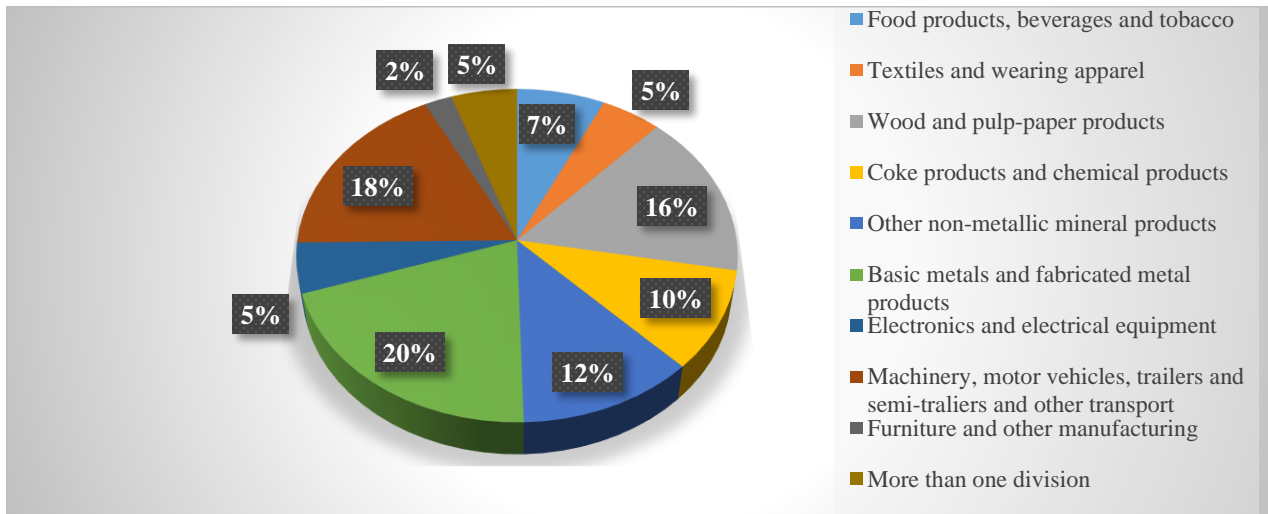


Figure 5-6. Manufacturing Class: Distribution of Towns among Divisions

Source: based on the official list of monofunctional towns ([Government Executive Order from 29.07.2014 № 1398-r](#)) and the developed functional monofunctional town classification

The manufacturing class is the largest in terms of the total population. Over ten million citizens live in these monofunctional towns. On average, in a manufacturing town there is the same

number of inhabitants as any Russian monofunctional settlement. Considering the minimum and maximum town sizes, it can be noticed that manufacturing monotowns also vary a lot in population sizes within the class. At the average, other monotowns (e.g. with two major activities as well as construction and scientific towns) are larger than manufacturing monotowns (Table A-2).

While considering the distribution of the population across industrial divisions, the difference among them becomes more apparent: in the manufacturing class there are two large divisions, where about 2/3 of the total class population live (Figure 5-7).

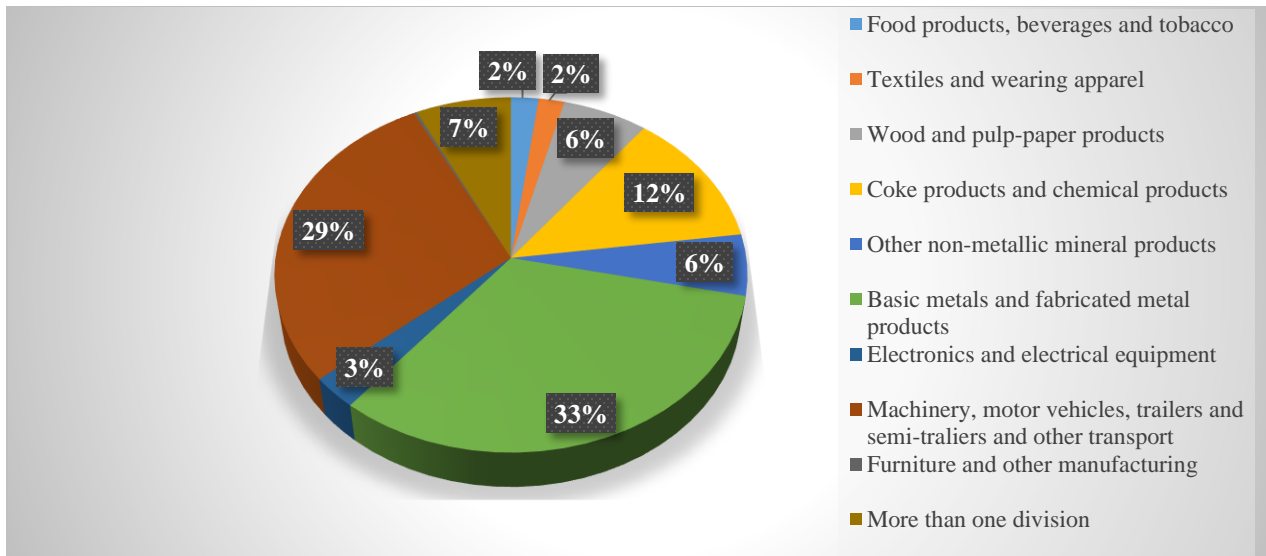


Figure 5-7. Manufacturing Class: Distribution of Population among Divisions

Source: based on the official list of monotowns ([Government Executive Order from 29.07.2014 № 1398-r](#)) and the developed functional monotown classification

The manufacturing towns are spread across the whole country. As it can be seen on the map (Figure 5-4), there is a large concentration of them in European Russia and along the Urals. A big number of manufacturing monotowns also exists in the West Siberian regions (e.g. Kemerovo Oblast). The rest are located in East Siberia (Irkutsk Oblast) and Russian Far East. Another map (Figure 5-8) demonstrates the location of the monotowns according to the industrial division classification. Within the European part there is a big diversity of industries (in particular, the central regions), however, it is possible to distinguish certain *industrial belts*. For instance, monofunctional towns with the specialization in wood-processing and pulp-paper industries form such belts in the North (Karelia, Arkhangelsk Oblast, the Republic of Komi). Monotowns of the machine industry are concentrated in the Volga Federal district, located in the Southeastern part of European Russia (Tatarstan, Bashkortostan, Mordovia, the Udmurt Republic, Samara, Kirov and Ulyanovsk Oblasts, etc.). Another big belt can be observed in the Urals (Sverdlovsk and Chelyabinsk Oblasts). In this region the monofunctional towns specialize in metallurgical industry. One more, but smaller metallurgical belt can be seen in the in the southern part of the West Siberia next to the Altai Mountains (Kemerovo Oblast).

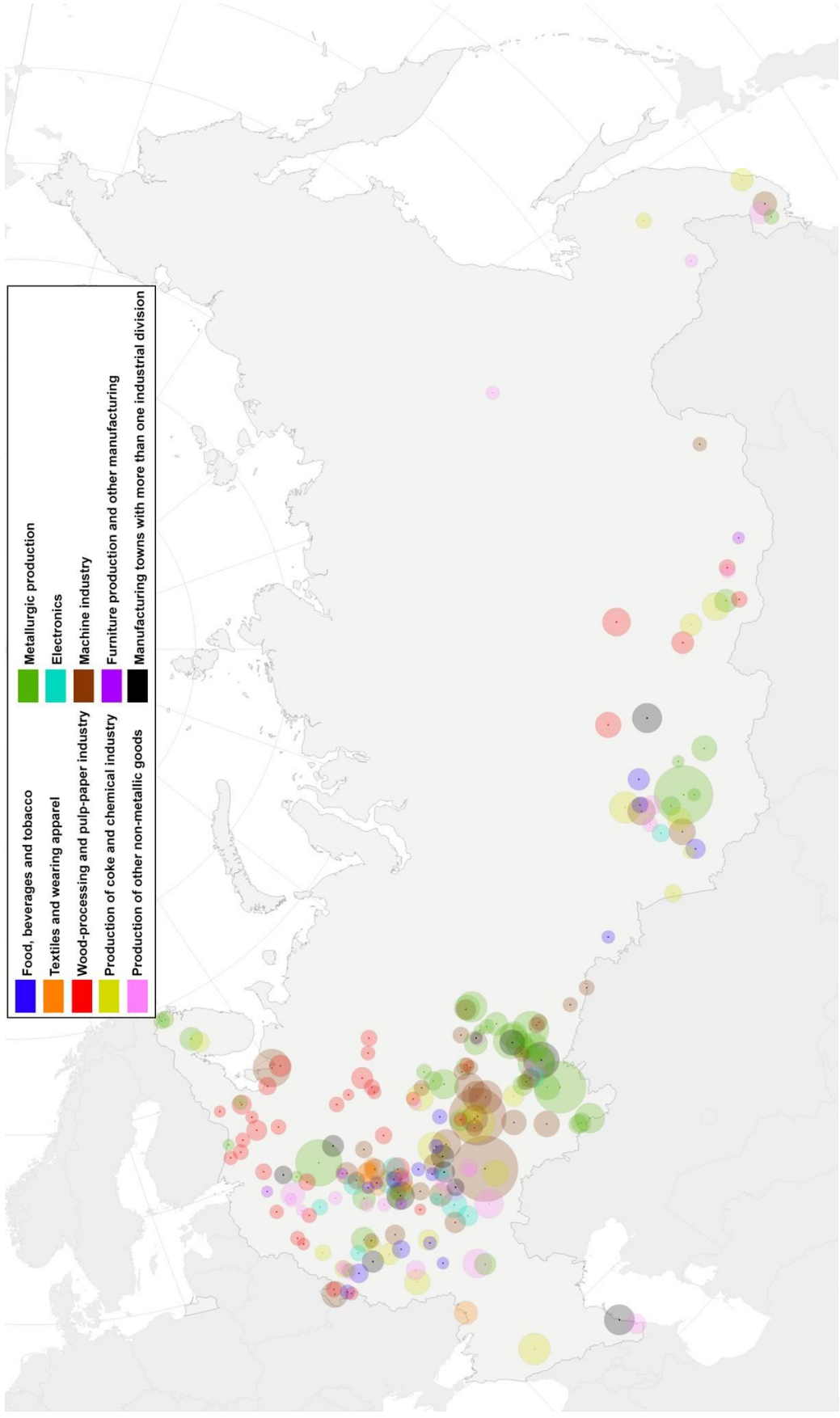


Figure 5-8. Manufacturing Functional Class of Monotowns according to their Industrial Divisions

All maps are created by Anton Andersson, a student enrolled in “Information and Communication Technology” Program at LTH  
 To get better quality picture, click the link: <http://tejp.github.io/monotowns/?manufacturing>

**Mining class.** This class is the second largest and consists of 63 settlements (21 % of the total number of monofunctional towns). Applying the International Standard Industrial Classification of All Economic Activities (2008), three divisions can be distinguished: (1) mining of fuels (coal and lignite), (2) mining of metal ores, and (3) other mining (minerals). Their general statistics is given in Table A-4 (in the Appendices). As in the case of the manufacturing class, observing the distributions of towns and population among these divisions (Figure 5-9), the certain difference can be noticed. Although, there are almost equal numbers of the monotowns assigned to the first two divisions, however, the population majority (62 %) lives in the settlements, which specialize in coal and lignite mining.

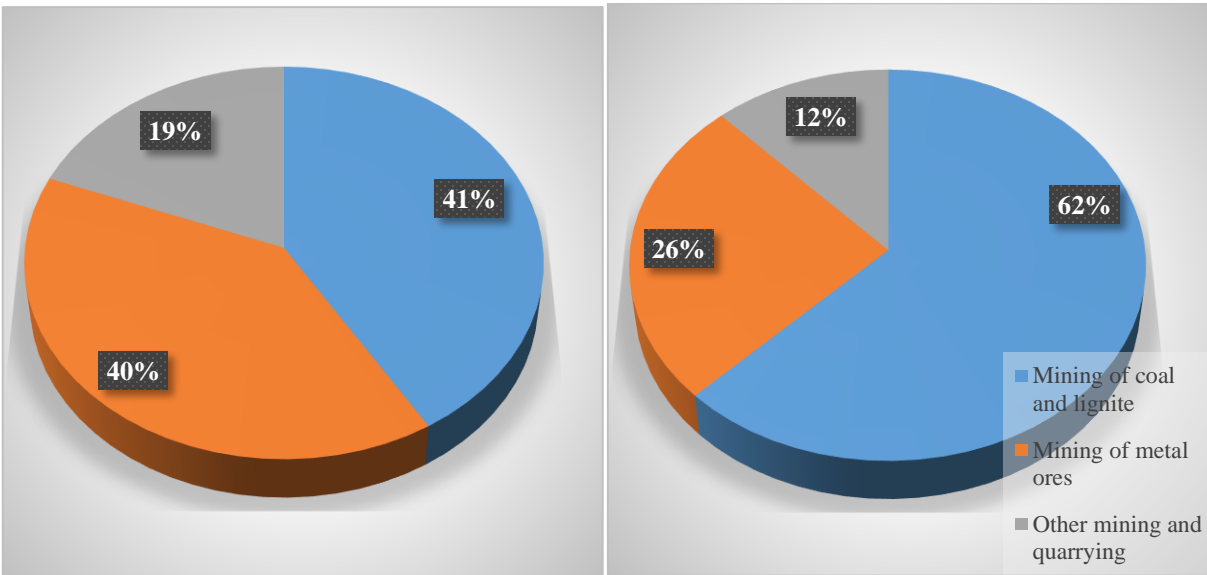


Figure 5-9. Mining Class: Distribution of Towns (left) and Population (right) among Divisions

Source: based on the official list of monotowns ([Government Executive Order from 29.07.2014 № 1398-r](#)) and the developed functional monotown classification

The map of monofunctional towns (Figure 5-4) demonstrates the largest concentration of the mining settlements in the southern part of the Western Siberia (Kemerovo Oblast). In the Eastern Siberia mining monotowns are situated in Zabaykalskiy Krai. These Siberian monotowns specialize in mining of coal and metal ores (Figure 5-10). The metallurgical mining is also concentrated in the Urals (Sverdlovsk, Chelyabinsk, Orenburg Oblasts and Perm Krai).

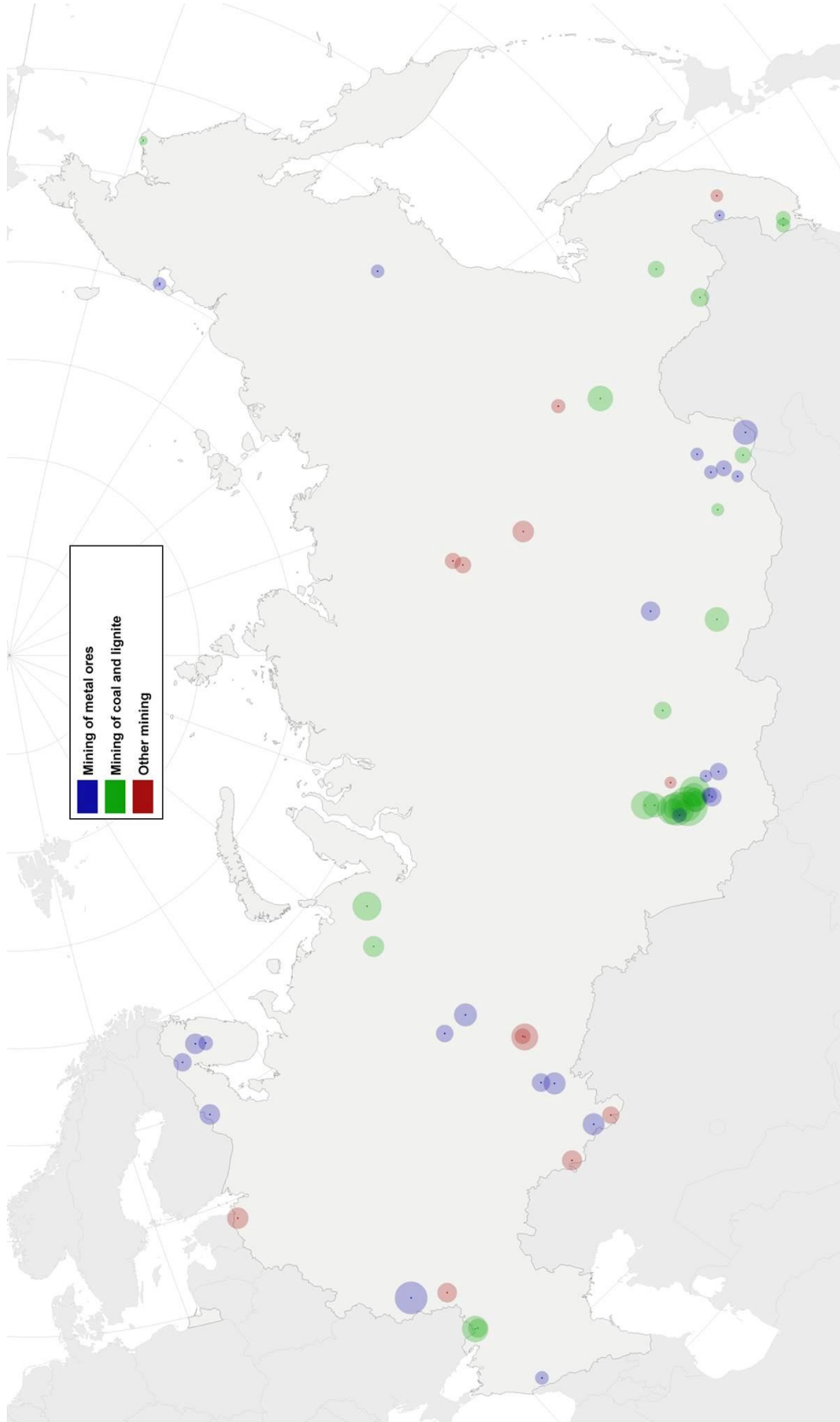


Figure 5-10. Mining Functional Class of Monotonies according to their Industrial Divisions

All maps are created by Anton Andersson, a student enrolled in "Information and Communication Technology" Program at LTH

To get better quality picture, click the link: <http://tejp.github.io/monotonies/?mining>

In general, mining of raw materials conditioned the placement processing plants, and, consequently, big representation of the manufacturing class in these regions. Mining of other minerals are present in European Russia (Leningrad and Voronezh Oblasts) and the Urals (Orenburg Oblast) but in their major in the Eastern Siberian part (the Sakha Republic).

The overall population of the class is over 2.1 million inhabitants. The average town size values of the mining class and all monotowns are close, but only two classes have smaller sizes – power generation and agriculture (Table A-2).

*The class of monotowns with two activities.* Although the considered settlements are expected to be monofunctional, however, ten monotowns (3 %) represent the case of dual specialization, i.e. they possess two dominant types of activities. But these activities are related, for instance, mining (of there are raw materials) and manufacturing (their processing). As the map shows (Figure 5-11), some of these settlements are located in European Russia, some concentrate in the Urals (Sverdlovsk Oblast) and Siberia. The total population of the class is over 875, 000 inhabitants, and its average town size is larger than of the manufacturing and mining monotowns (Table A-2).

*Other classes.* The rest eleven settlements (3 %) belong to the transportation, power generation, scientific, agriculture and construction classes. The map (Figure 5-11) provides the picture on how these towns are spread across the country. Considering the transportation class, it becomes apparent that such monotowns are located along the main railway line – Trans-Siberian railroad. Two out three power generation towns are located nearby the coal mining areas. Scientific monotowns are present in the large manufacturing regions (Sverdlovsk and Ulyanovsk Oblasts). The total population of these classes is over 439, 000 citizens (Table A-2). The town sizes vary among the classes. The largest monotowns specialize in construction and science (scientific research and development). The smallest settlements belong to agriculture and power generation classes. The town size of the transportation class is in between and similar to the average size of mining monotowns.

**The main barrier** in analyzing the last two groups of classes (with two activities and other classes) consists in their small representation in the monotown matrix (Table A-2 in the Appendices). This is why in this study it would be difficult to generate any patterns inherent to them. Hence in the following discussion has the main focus on the largest monotowns classes – manufacturing and mining.



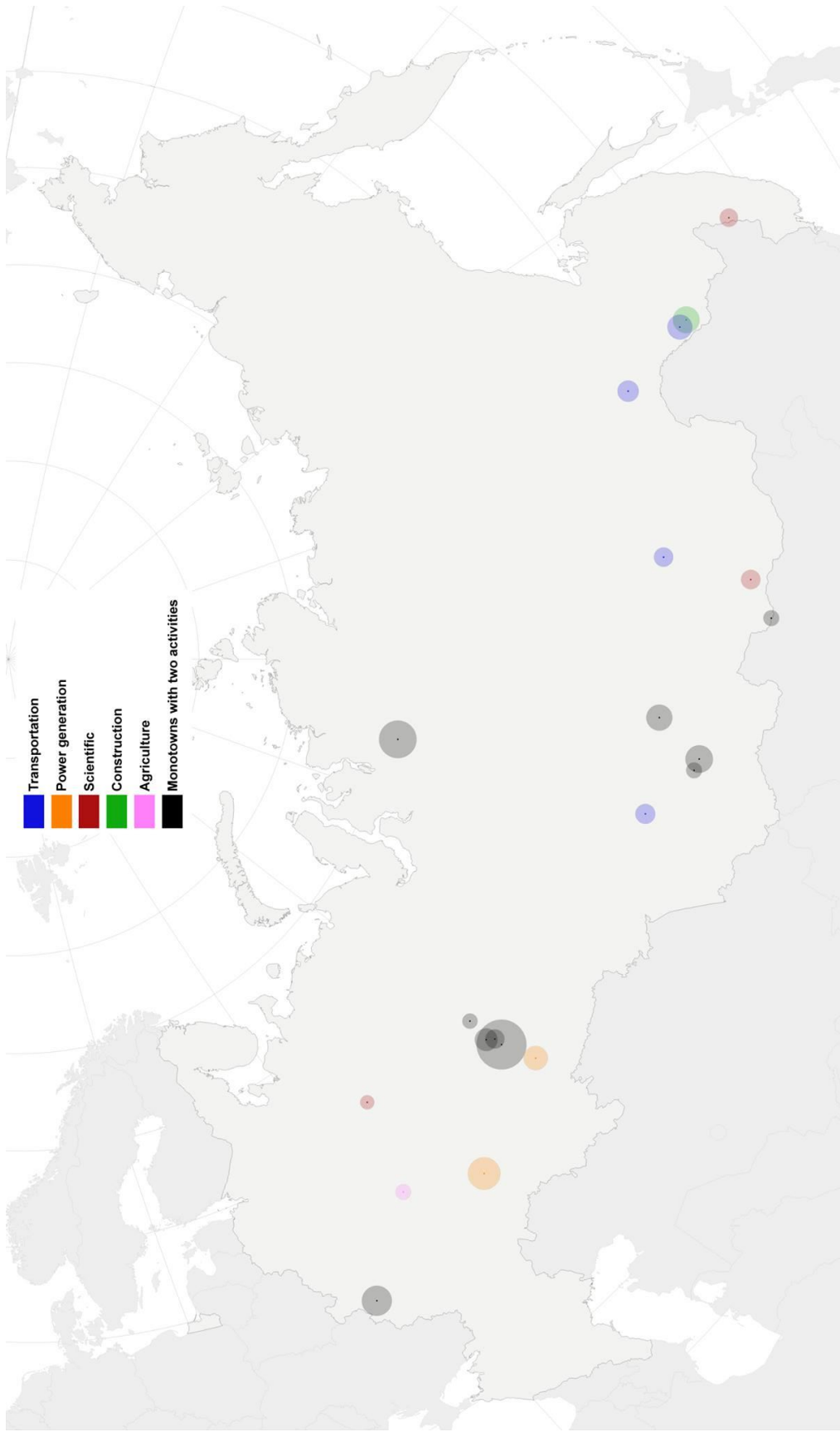


Figure 5-11. Other Functional Classes of Monotowns according to their Industrial Divisions

All maps are created by *Anton Andersson*, a student enrolled in “Information and Communication Technology” Program at LTH  
 To get better quality picture, click the link: <http://tejp.github.io/monotowns/?others>



## 5.2. DEVELOPING MONOTOWN TAXONOMY

### 5.2.1. Analyzing the Monotown Classes across Different Categories

Besides the Federal Ministry of Economic Development, the non-commercial organization “Monotowns Development Fund”, which began its work in 2014, is also responsible for monitoring and controlling the socio-economic development of monotowns. Its aim is to create favorable conditions for the development and diversification of monotowns with unstable socio-economic situation ([the official webpage of the Fund 2015](#)). Considering the latter, the following question arises: “Might the socio-economic development depend on the class affiliation of a monotown?” In order to find it out, in this section I am going to analyze two major functions of monotowns across the categories of socio-economic situation.

To begin, it is important to mention the common difficulties, which Russian monofunctional towns face to during the recent years. Such information was collected while developing the matrix and selecting the data about the town-forming enterprises (Table A-1). Based on it, the general problems of monotowns might be summarized as follows. *First*, due to the financial crisis of 2007-2008 and consequently decreased demand, several plants and factories experienced the production decline. Some of them temporary stopped the operations. *Second*, in order to save the production costs after the crisis, many enterprises shortened the working week and reduced the number of the employees. *Third* common problem was bankruptcy. Due to the inability to settle payment obligations and other factors, town-forming companies were declared bankrupt and got involved in the bankruptcy and monitoring procedures. *Fourth*, in the case of extremely unprofitable production, some enterprises were closed down in the monotowns as Krasavino, Zhireken, Petrovskiy, etc. *Finally*, the ecological situation was unfavorable for some monofunctional towns specializing in heavy industries as metallurgical mining and processing as well as machinery and chemical industry. For instance, Norilsk, a manufacturing and mining monotown, is among ten most polluted towns in the world ([The Moscow Times 2013](#)).

Although many monofunctional towns and their dominant enterprises met these common difficulties, however, it is not possible to conclude that the listed problems are inherent to all monotowns to the same extent. One possibility to identify how the settlements differ in their development should lie in analyzing the monotown categories.

As mentioned before, the official list of monotowns contains the monotown categorization according to their socio-economic situation ([Government Executive Order from 29.07.2014 № 1398-р](#)). Table 5-1 provides the general statistics on three categories.

Table 5-1. Considering the Population and Town Sizes of Monotowns across Different Categories

Category (socio-economic situation)	Number of monotowns	Total population	Town Population Size		
			Minimum	Geometric Mean	Maximum
1 (unstable)	75	2 659 268	1 622	18 073	316 758
2 (with risks of worsening)	147	5 058 762	1 003	20 327	188 420
3 (stable)	89	5 778 772	2 717	27 002	718 127
<b>All monotowns:</b>	<b>311</b>	<b>13 496 802</b>	<b>1 003</b>	<b>21 432</b>	<b>718 127</b>

As it can be seen, the majority of monofunctional towns belong to the category 2 (with risks of worsening), yet the population majority lives in the monotowns of the category 3 (with stable socio-economic situation). Accordingly, the average monotown size in the category 3 is larger than in the other two. The last category includes almost all of the largest monofunctional towns (with over 250,000 inhabitants) as Tolyatti, Novokuznetsk, Naberezhnye Chelny, Magnitogorsk and Nizhniy Tagil (Table A-1). In general, while comparing the town sizes, this categorization might demonstrate that settlements could be less susceptible to economic changes and possess more stable socio-economic conditions, when their sizes are larger.

While analyzing this categorization together with the general problems inherent to town-forming enterprises, the difference between the categories 1 and 3 seems to be the most apparent. For instance, monofunctional towns, assigned to the category 1, usually suffer from such difficulties as bankruptcy and shutdowns, whereas settlements of the category 3, at the average, experience mass lay-offs and production reduction - the challenges, which characterize the majority of monotowns. However monofunctional towns in the category 2 struggle with various types of problems, and it is difficult to see the distinct ones. The difference is blurred between the category 2 and two other. Therefore the following analysis and monotown taxonomy are developed regarding the categories 1 and 3 as two extremes in the given categorization.

Considering functional classes of monotowns, Table A-2 shows the distribution of towns and population among three categories. In overall, the shares of two functional classes – manufacturing and mining – are the largest among all other classes (Figure 5-4). By comparing their proportions within three categories, some differences can be noticed. For instance, the share of manufacturing towns is the largest (77 %) in the category 1 (with unstable situation), and it slightly decreased in the categories 2 and 3. The highest share of mining towns (22 %) can be observed among the monotowns in the category 2 (with risks of worsening), and the lowest – in the category 1. Monotowns with two activities and of other classes (scientific, transportation, etc.) exist in all categories. However, as noted above, there are present in rather small numbers, which makes it difficult to generate patterns and draw conclusions about them. Hence in the following monotown taxonomy the major functions of monotowns – *mining and manufacturing* – are considered.

## 5.2.2. Developing Monotown Taxonomy in an Attempt to Identify Problems/Lock-Ins

Due to the mentioned above reasons, the monotown taxonomy is developed regarding two dimensions: (1) categorization of the socio-economic development (categories 1 and 3), and (2) monotown functional classification (mining and manufacturing functions).

Hence monotowns are divided into four groups: (i) mining towns with unstable socio-economic situation, (ii) manufacturing towns with unstable socio-economic situation, (iii) mining towns with stable socio-economic situation, and (iv) manufacturing towns with stable socio-economic situation. The following aspects are considered in the taxonomy: (1) general statistical data, (2) industrial specialization, (3) historical roots, and (4) geographical location. The taxonomy is shown in Table 5-2.

Table 5-2. Monotown Taxonomy

i. Mining Monotowns with Unstable Socio-Economic Situation	iii. Mining Monotowns with Stable Socio-Economic Situation
<p>1. <i>General statistics:</i> Number of towns = 13 (18 % of all towns in the category 1) Total population = 498 398 Average town size (geometric) = 18 370</p> <p>2. <i>Industrial specialization:</i> the monotowns primarily specialize in mining of metal ores (about 2/3 of all mining towns in the category 1) and coal mining.</p> <p>3. <i>Historical roots:</i> the settlements mainly emerged during the 20<sup>th</sup> century. Many were declared towns/urban-type settlements during the 1940s.</p> <p>4. <i>Geographical location:</i> the monotowns are spread across the country, but most of them are located in the Asian part of Russia (9 out of 13).</p>	<p>1. <i>General statistics:</i> Number of towns = 17 (19 % of all towns in the category 1) Total population = 543 133 Average town size (geometric) = 18 758</p> <p>2. <i>Industrial specialization:</i> 1/3 of all mining monotowns in the category 3 specializes in mining of other minerals, another 1/3 – in mining of metal ores and the last 1/3– in coal mining.</p> <p>3. <i>Historical roots:</i> the settlements mainly emerged during the 20<sup>th</sup> century. Many were declared towns/urban-type settlements during the 1950-60s.</p> <p>4. <i>Geographical location:</i> the monotowns are spread across the country, but many of them are located in the Asian part of Russia (9 out of 17).</p>
ii. Manufacturing Monotowns with Unstable Socio-Economic Situation	iv. Manufacturing Monotowns with Stable Socio-Economic Situation
<p>1. <i>General statistics:</i> Number of towns = 57 (77 % of all towns in the category 1) Total population = 2 009 004 Average town size (geometric) = 18 231</p> <p>2. <i>Industrial specialization:</i> the monotowns primarily specialize in metallurgical production, timber and machine industries. The rest industries have shares less than 7 % of all manufacturing towns in the category 1.</p> <p>3. <i>Historical roots:</i> most of the settlements emerged</p>	<p>1. <i>General statistics:</i> Number of towns = 65 (73 % of all towns in the category 1) Total population = 4 677 144 Average town size (geometric) = 28 618</p> <p>2. <i>Industrial specialization:</i> the monotowns primarily specialize in machine and chemical industries as well as metallurgical production and manufacturing of other non-metallic products. The rest industries have shares less than 8 % of all manufacturing towns in the category 3.</p> <p>3. <i>Historical roots:</i> most of the settlements emerged</p>

<p>during the 18<sup>th</sup>-20<sup>th</sup> centuries. Many were declared towns/urban-type settlements during the 1930s-40s.</p> <p>4. <i>Geographical location:</i> the monotowns are spread across the country with the big concentrations in the Urals, central part of European Russia and further to the North (closer to the border with Finland).</p>	<p>during the 17<sup>th</sup>-20<sup>th</sup> centuries. Many were declared towns/urban-type settlements during the 1930s and 1950s.</p> <p>4. <i>Geographical location:</i> the monotowns are spread across the country with the big concentration in the central part of European Russia and Volga federal district.</p>
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*The first aspect*, which provides the general statistics on the groups of monotowns, shows that the population majority lives in manufacturing towns with stable socio-economic situation. At the average, the size of these towns is bigger than manufacturing towns with unstable situation. Mining towns, on average, are also smaller regardless the type of socio-economic situation. This fact might demonstrate that generally larger towns possess opportunities for diversification and more successful development. This taxonomy allows to conclude that, at least in regard to manufacturing towns, *the larger is a settlement, the more stable socio-economic situation it has*.

*The second element* in the taxonomy presents the industrial specialization of the settlements according to the International Standard Industrial Classification of All Economic Activities (2008).

Analyzing mining function, Lappo (2013) notes that, to some extent, all *mining monofunctional towns* have a chance to “luck out”. This could occur in case if they do not obtain a new function or diversify. However mining monotowns are present in both categories (with unstable and stable socio-economic situation). Thus their industrial specialization might explain the differentiation in their development. Figure 5-12 shows the percentage distribution of monofunctional towns of three industrial divisions (mining of coal and lignite, mining of metal ores, and mining of minerals) among the investigated categories of socio-economic development. For instance, mining of metal ores is predominant in the category 1: about 62 % of mining monotowns with unstable socio-economic situation specialize in the extraction of metal ores. This prevalence can be explained by the situation at the metal market after the crisis 2007-2008. It is characterized by the decline in domestic demand and world market prices (Rossiyskaya Gazeta 2014). At the same time, the share of settlements specializing in mining of metal ores goes down in the category 3: 1/3 of mining monofunctional towns with stable socio-economic situation extract metal ores.

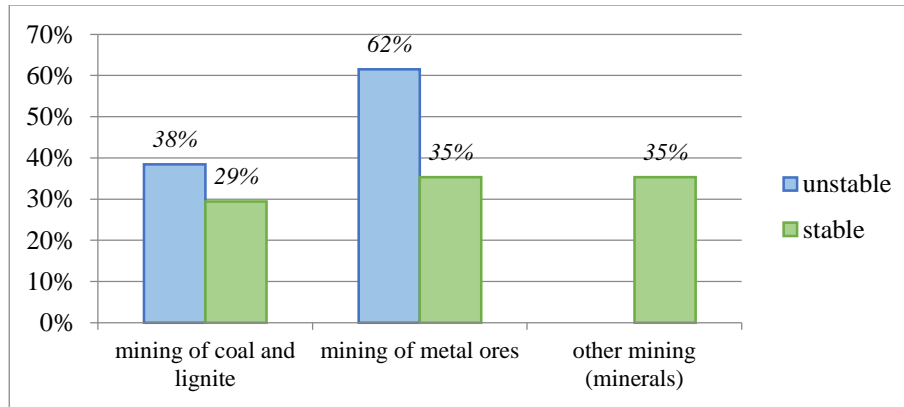


Figure 5-12. Specialization of Mining Monotowns in the Categories 1 and 3

Another 1/3 of mining monotowns of the category 3 specialize in mining of minerals. Several of these towns have export-oriented specialization (e.g. mining of gem stones), which experiences increase in demand and prices. Notably, this division is not present among settlements of the category with unstable situation.

Considering coal and lignite mining, these monotowns are included in both categories 1 and 3 and their shares equal to 38 % and 29 % accordingly. Russian coal market generally can be characterized by decline of domestic consumption and a big concentration of coal mining in one region (Kemerovo Oblast). In addition, some monotowns of the category 1 experience the problem of growing production costs due to their remote location to markets and increasing transportation costs ([the official website of Federal Ministry of Energy](#)).

*Manufacturing monofunctional towns* specialize in a number of industries, as it can be seen at Figure 5-13. Considering the category 1, in overall, metallurgical production (in particular, manufacturing of basic metals) and timber industry are dominant. Thus more than 50 % of manufacturing monofunctional towns with unstable socio-economic situation tend to specialize in more traditional industry sectors.

The category 3 has dominant industrial divisions as chemical and manufacturing of other non-metallic products (mainly presented as construction materials production). The former is one of a few industries, which demonstrates steady increase after the crisis 2007-2008 ([center of economic research “RIA-Analitika” 2011](#)). The latter has such market tendencies as growing demand and rising prices (Consultancy “Bespalov i Partneri” 2013).

Monotowns with stable socio-economic situation also specialize in metallurgical production, yet in less extent than monofunctional towns of the category 1. The possible explanation lies in the consideration of average town size (geometric). Thus, on average, metallurgical monotowns with unstable situation are twice smaller in their population size than the settlements with stable development (33 172 against 68 897).

The same tendency can be observed regarding the machine industry, one of dominant specializations of monotowns in both categories. At the average, machine-industrial towns of the category 3 are larger than monotowns of the category 1 (49 754 against 33 531).

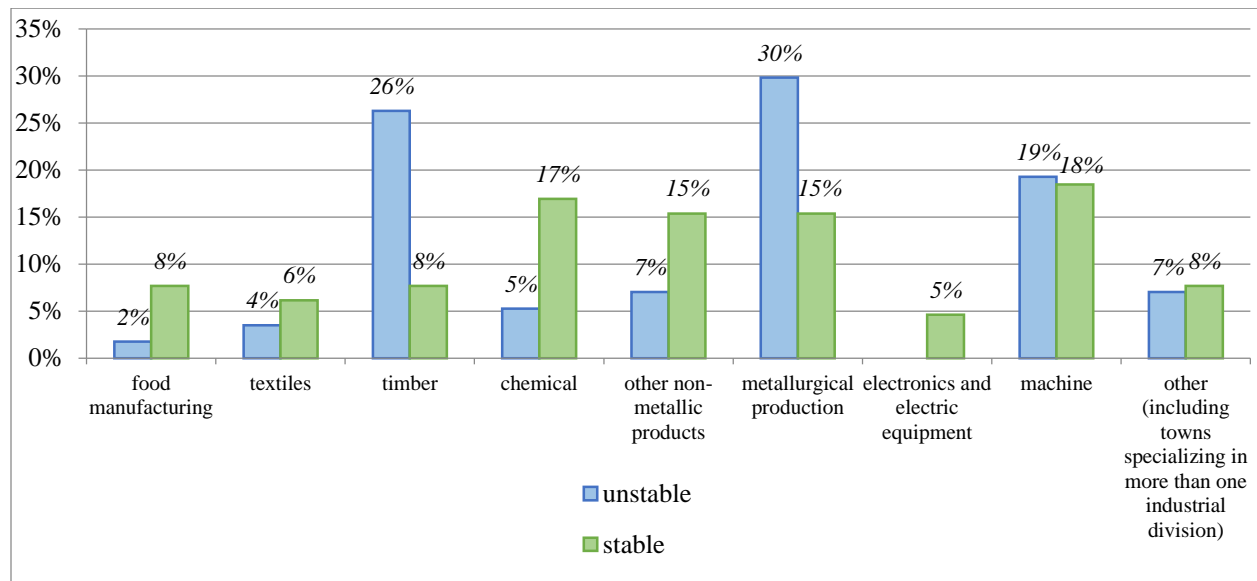


Figure 5-13. Specialization of Manufacturing Monotowns in the Categories 1 and 3

In general, it can be concluded that *industrial specialization of monotowns together with average town size creates preconditions for a type of socio-economic situation (stable/unstable)*.

**The third aspect** of the taxonomy is the historical foundation of monotowns. In order to get a clear picture on this issue, the following graphs are provided.

First, Figure 5-13 is based on the information on years when the mining settlements were declared towns/urban-type localities. As discussed above, this information reflects on when the settlements received impetus for their further development. Thus mining monofunctional towns developed primarily during the 20<sup>th</sup> century. Numerous mining monotowns with unstable socio-economic situation became towns/urban-type settlements during the 1940s (5 settlements out of 13) and the following decade (3 out of 13). The majority of settlements, assigned to the category 3, got a new status in the post-war 1950s and 1960s (12 settlements out of 17).

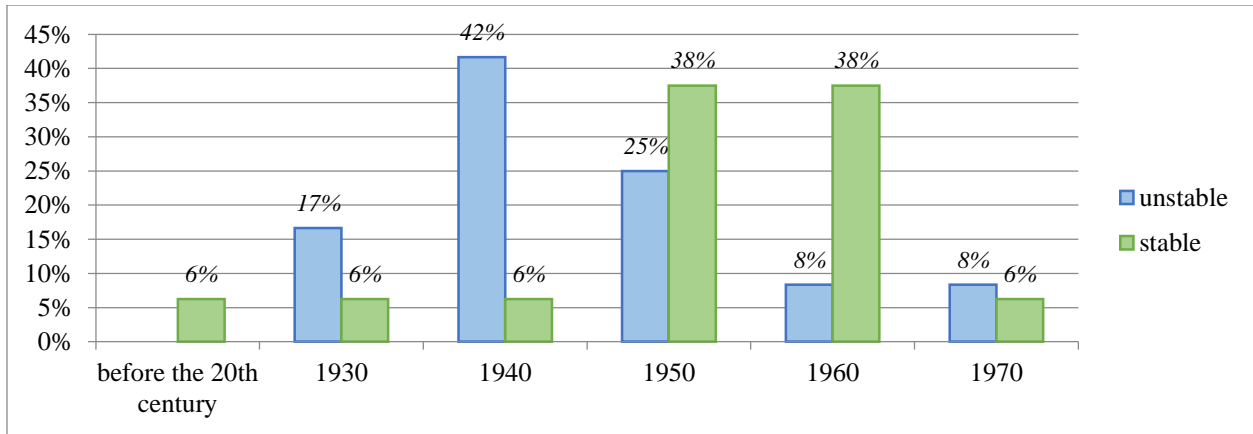


Figure 5-14. Periods when the Mining Settlements were Declared Towns/Urban-Type Settlements

Second, Figure 5-14 demonstrates when manufacturing settlements became towns/urban-type localities. Thus, as mining towns, most manufacturing monotowns also received their development impetus during the Soviet times. Monofunctional towns with unstable socio-economic situation got new status during the 1930s-1940s, and monofunctional towns of the category 3 – in the 1930s and 1950s.

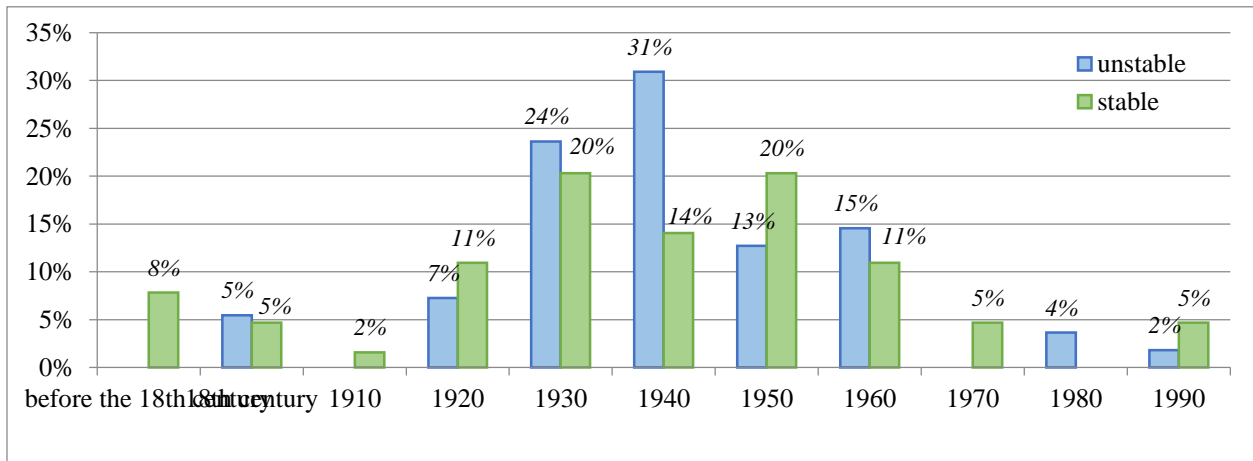


Figure 5-15. Periods when the Manufacturing Monotowns were Declared Towns/Urban-Type Settlements

Nonetheless, in overall, it is not possible to state that the historical roots of settlements as towns/urban-type localities correlate with the level of their socio-economic development. *Yet one general tendency can be observed for all considered monofunctional towns* (both mining and manufacturing): they have received impetus for further development during the Soviet era, in particular, the 1930s-1960s.

**The last element** in the taxonomy presents the geographical location of monotowns. The following map presents the geographical distribution of towns (Figure 5-15).



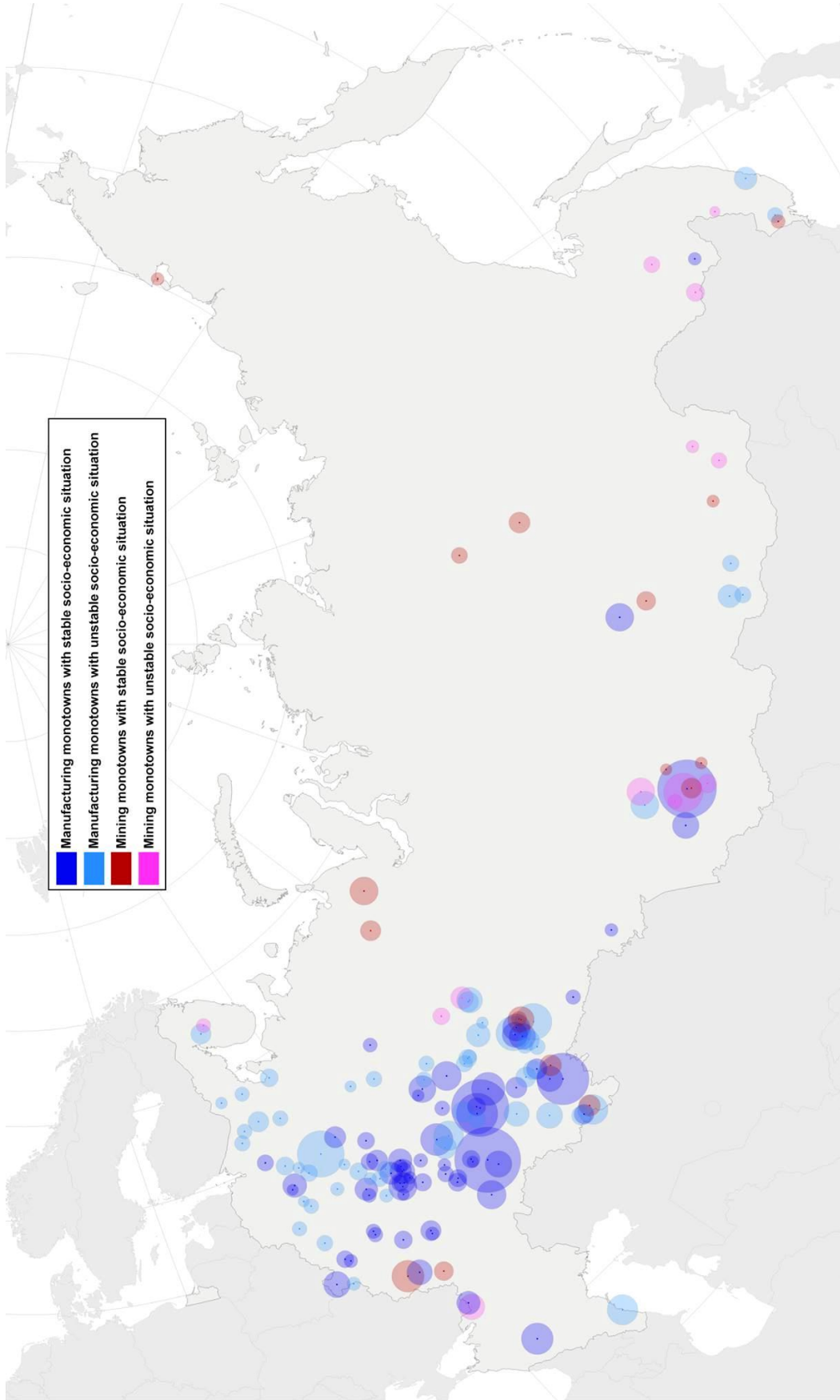


Figure 5-16. Monotown Taxonomy

All maps are created by Anton Andersson, a student enrolled in “Information and Communication Technology” Program at LTH  
 To get better quality picture, click the link: <http://tejp.github.io/monotowns/?tsxonomy>



As it can be seen at the map, all monotowns are spread across the whole country. The location of mining towns is conditioned by the presence of resources' deposits, and it can be remote from big markets. Many mining monofunctional towns of both categories are situated along the Ural Mountains, in Siberia with a big concentration in Kemerovo Oblast (coal mining belt), and Russian Far East.

Manufacturing towns tend to locate closer to big markets. Majority of these settlements is located in the European part, where the higher population density and demand exist. Large concentrations of manufacturing monotowns with unstable socio-economic situation can be observed in the Urals (metallurgical belt), Central Russia and further to North (timber industrial belt). Monofunctional towns of the category 3 are spread across Central Russia and Volga federal district (machine-industrial belt).

*While considering the geography of the monotowns, we obtain the general picture on where monofunctional towns tend to locate.* Mining monotowns can have remote locations depending on deposits of natural resources, while manufacturing towns are usually situated in populated areas. In addition, some mining and manufacturing might belong to geographical belts, which can possess stable or unstable socio-economic development. For instance, manufacturing monotowns in the Northern-West part of Russia and the Urals might suffer from unstable situation, and monofunctional towns in the Volga federal district has better development.

In overall, the monotown taxonomy allows to see that certain aspects create preconditions for more or less stable socio-economic development. Do they also condition the presence of specific problems and lock-ins? In order to investigate it, the particular examples of monofunctional towns are considered (Table 5-3).

Table 5-3. Considering the Particular Monotowns across Different Categories

No.	Monotown	Specialization	Population	Category	What characterizes the monotown	
					Grabher's lock-ins	Geographical lock-in
Manufacturing Class						
1	Krasnoturyinsk (Sverdlovsk Oblast)	Manufacturing of basic metals	64 120	1	<i>Presence of the lock-in:</i> a) town-forming enterprise belong to OJSC "RUSAL", one of the largest aluminium producer; due to the obsolete facilities and lack of investments the dominant aluminium production was shut down; b) Net migration in 2010-2014 – (-774), mostly of the working-age population	Absence of the lock-in: <ul style="list-style-type: none"> <li>• The Urals;</li> <li>• Density of population in the region – 22,27 pop. per km<sup>2</sup>;</li> <li>• Distance to the regional capital Ekaterinburg – 370 km;</li> <li>• Has railway connection</li> </ul>

2	Kaspiysk (Dagestan)	Machine industry (watercrafts motors); Electronics (navigational instruments)	105 106	1	<i>Presence of the lock-in:</i> a) both town-forming enterprises belong to the military-industrial complex and fill defense orders which in the 1990s decreased sharply; b) presence of the spare production facilities at the town-forming enterprises; c) net migration in 2013 – (+784)	Absence of the lock-in: • The Caucasus; • Density of population in the region – 59,48 pop. per km <sup>2</sup> ; • Distance to the regional capital Makhachkala – 14 km (Kaspiysk is its satellite-town); • Has railway connection
Mining Class						
1	Salair (Kemerovo Oblast)	Mining of metal ores	8 171	1	a) the town-forming enterprise bankrupted in the 2000s due to unprofitable production; b) Net migration in 2014 – (-65)	<i>Presence of the lock-in:</i> • The South Fo the Western Siberia; • Density of population in the region – 28,47 pop. per km <sup>2</sup> ; • Distance to the regional capital Kemerovo – 210 km; • Has no railway connection (25 km apart)

Based on the information about the difficulties, faced by the dominant enterprises, and the geographical location of the monofunctional towns, an attempt to indicate the possible lock-ins is made. Doubtless, this data does not give a full picture of the phenomenon, however the aim is to see whether the lock-in concept might be applicable in order to explain the difference in economic development.

As it can be seen, the geographical lock-in can be considered as the inherent feature to the mining town *Salair* with unstable socio-economic situation. Its remote location (in the areas with low population density) and absence of transport junctions negatively influence the development. Local residents are geographically “locked in”, and hence the low levels of outmigration can be observed. This problem is also highlighted in the World Bank Report (2010).

While analyzing the information about the town-forming enterprises, the following some evidence of Grabher’s lock-ins can be observed. First, the plants which belong to the strategic industrial complexes (e.g. military-industrial) as *Kaspiysk*, could possibly experience the functional lock-in. This is conditioned by the fact that their major consumer is the state. After the collapse of the USSR the demand from the state considerably declined, hence the town-forming enterprises do not operate full out and their production capacities stand idle. Consequently, these spare facilities are not kept up to date.

Second, such monotowns as *Krasnoturyinsk* might face the cognitive lock-in. The latter is conditioned: (1) the negative net migration, mainly at the expense of leaving working-age

population, (2) the absence of firm refresh and consequent aging of the staff at the town-forming enterprise, (3) the low investments in production process, which at the plant in Krasnoturyinsk have led to the shutdown of its dominant activity – aluminum manufacturing. It may demonstrate the outcome when the management and its “groupthink” does not favor strategic rationality, highlighted by Grabher (1993), and is not willing to leave a technological trajectory to more promising markets. Other two preconditions exclude the opportunity to bring new zest into functioning of the town-forming plants.

Finally, in general, the institutional/political lock-in might take place in most Russian monotowns since in the planned Soviet economy town-forming plants used to fulfill the state orders. However, after 1991 the strong linkages among plants and with the state broke, and the companies experienced serious difficulties as bankruptcy, production decline and mass lay-offs (Table A-1).

In overall, considering the formulated research question and basing on the conducted analysis, it can be seen that affiliation to a particular functional class does not necessarily condition successful or unsuccessful development of a monotown. Both manufacturing and mining towns are present in the categories with unstable and stable socio-economic situation. However, some aspects can characterize a certain monotown class (e.g. average town size, geographical location or industrial specialization). Thus mining monofunctional towns might be smaller and have more remote locations in regard to markets than manufacturing settlements. This, for instance, may condition the presence of the geographical lock-in. A position in the industrial structure might lead to Grabher’s or similar lock-ins. These are, of course, generalizations, and certain exceptions may take place. Nonetheless such attempt in relating town functions and specific problems might shed a light on a new perspective, from which the phenomenon of Russian monofunctional towns can be explored.

## 6. CONCLUSIONS

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Russian monofunctional towns represent the extreme case of specialization. It is interesting to explore this phenomenon, because, first, there is no universal approach to investigate monotowns, and, second, their numerous number and large population condition the need in developing such study.

While considering the previous research, done on the investigated issue, it is possible to underline the following aspects. First of all, the long tradition in the foundation of monotowns can be observed in Russia. Over centuries the monofunctional towns have been emerging, and at each historical era they have been performing particular functions. The foundation and development of monotowns were conditioned by the specific needs of the state.

Second, monotowns respond to economic changes faster and stronger. Thus after the collapse of the USSR monofunctional towns met severe problems as the decreased demand, production decline, mass lay-offs, bankruptcy and closures of the dominant enterprises.

Third, since the 2000s the differentiation in socio-economic development among monotowns was revealed. For instance, the monofunctional towns with export-oriented production were better off than other monotowns. The crisis 2007-2008 only strengthened this differentiation.

Taking into account these aspects, the question arises: what lies in such differentiation among monofunctional towns? In order to explore it, this study attempts to provide a new insight to the problem by building an analytical framework, which connects two concepts. On one hand, monofunctional towns might be considered as the agglomeration localized economies. They possess certain advantages as well as shortcomings. The latter imply particular types of lock-ins, which according to Grabher (1993) transform the specialization pros to cons. On the other hand, monotowns can be analyzed from the functional classification concept, which would allow to gain more systemized picture on the phenomenon. Thus the settlements can be grouped according to their dominant functions. By analyzing these two concepts, the research question is formulated: *“Can affiliation to a certain functional class of monotowns affect the socio-economic development and cause specific types of lock-ins?”*

In order to answer this question, the empirical analysis was performed in the step-wise manner. First, the monotown matrix was developed, which included the general information on the settlements as well as their functional classification. As the base, the governmental list of monotowns was taken. It led to a certain limitation in the analysis as inability to distinguish non-economic functions (e.g. defense, administration). At this stage it was possible to analyze the issues on the emergence and functional classes of monotowns. The second step assumed developing the monotown taxonomy through two dimensions: categorization and functional classes. Based on it, an attempt to answer the formulated research question was made. What conclusions can be drawn from the analysis?

First, the monotowns were indeed emerging due to the particular needs in different historical eras. The most important stage is associated with the rapid industrialization in the Soviet Union.

Second, it is possible to apply the functional classification approach to the investigated phenomenon. Thus several functional classes can be distinguished, except non-economic functions.

Third, by developing the monotown taxonomy, it is possible to attempt answering to the research question. The taxonomy underlines the aspects and features possibly inherent to certain functional classes. For instance, remote location, average town size and industrial specialization can condition the presence of specific problems and lock-ins for different monofunctional towns. Thus the taxonomy shows some evidence of possible relation between problems and functional monotowns classes.

To conclude, this study might not provide the comprehensive research on the monofunctional towns of Russia, yet it sheds a light on new perspective, through which further analysis might be done. Thus monotown functional classification can be considered as the helpful tool to start a research. By considering classes, we can get a good representation of the phenomenon: the monotowns' structure. The developed taxonomy might become an example in handling the problem of the lack in available statistics on numerous monofunctional towns by systemizing and generalizing the knowledge about the phenomenon. In general, the attempt to check the relation between the class affiliation and socio-economic development of monotowns can capture further investigation in this direction: the application of the classification approach together with the lock-in concept as the way to explore Russian monofunctional towns.

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## 8. APPENDICES

Table A-1. Russian Monofunctional Towns (data matrix)

No.	Name <sup>1</sup>	Type of settlement <sup>1</sup>	Region <sup>1</sup>	Population <sup>2</sup>	Foundation <sup>3</sup>			Town-forming enterprises <sup>4</sup> ***	Specialization	Industrial Sectors according to the classification of UNSD <sup>5</sup> ****	Functional Classification
					Year of foundation	Year when was declared a town	Events with which the foundation and development of settlements can be associated				
<b><u>Category 1. Monotowns with the most difficult socio-economic situation (incl. due to the problems related to functioning of dominant enterprises)<sup>1</sup></u></b>											
1	Raychikhinsk	urban district	Amur Oblast	20 865	1932	1944	development of the coal deposit	CJSC "Amursky Ugol"	coal mining	mining and quarrying (05)	Mining
2	Svobodnyy	urban district	Amur Oblast	56 246	1912	1912	construction of Amur railway	OJSC "RZD" Zabaykalskaya Zheleznaya Doroga	transport services	transportation and storage (49)	Transportation
3	Kizema	rural settlement	Arkhangelsk Oblast	2 698	1951	-	-	OJSC "Dmitrievsky LPK"	timber industry	manufacturing (16)	Manufacturing
4	Onega	urban settlement	Arkhangelsk Oblast	20 284	14th century	1780	location on the riverside; uyezd town in 1784	OJSC "Onezhskiy LDK", OJSC "Onegales", OJSC "Onega-Energia"	timber industry	manufacturing (16)	Manufacturing
5	Belaya Berezka	urban settlement	Bryansk Oblast	6 001	1915	1940**	foundation of the woodworking integrated plant	OJSC "Seletsky DOK", LLC "Bryansky Fanerny Kombinat" - <b>both are in the bankruptcy process</b>	timber industry	manufacturing (16)	Manufacturing
6	Kameshkovo	urban settlement	Vladimir Oblast	12 731	beginning of the 20th century	1951	foundation of the textile plant	Kameshkovky branch LLC "Detskaya Odezhda"	textile industry	manufacturing (14)	Manufacturing
7	Kurlovo	urban settlement	Vladimir Oblast	6 378	1811	1998	foundation of the glass-manufacturing plant	CJSC "FIRMA "Simvol" - <b>bankrupted</b>	glass industry	manufacturing (23)	Manufacturing

8	Sazonovo	urban settlement*	Vologda Oblast	3 075	1860	1947**	foundation of the glass-manufacturing plant in 1860	JSC "Ruscam Pokrovsky" (belongs to the turkish group "Sisecam")	glass industry	manufacturing (23)	Manufacturing
9	Krasavino	urban settlement	Vologda Oblast	6 864	1848	1947	foundation of the textile plant in 1848	OJSC "Krasavinskiy Lnokombinat imeni V. Griбанова" - <b>closed down</b> Branch GEP "Vologda-Kommunenergo" - <b>dominant since 2013</b>	electroenergetics	electricity, gas, steam and air conditioning supply (35)	Power generation
10	Cherepovets	urban district	Vologda Oblast	316 758	1777	1777	location at the confluence of two rivers (Sheksna and Yagorba); uyezd town in 1780; foundation of the largest metallurgic plant in 1948-55	OJSC "Cherepovets Steel Mill" (belongs to PAO "Severstal") <b>difficult ecological situation</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
11	Zhireken	urban settlement*	Zabaykalsky Krai	4 673	1954	1972**	discovery of the molybdenum deposit in 1954	OJSC "Zhirekenskiy GOK" - <b>closed down in 2013</b> , LLC "Zhirekenskiy Ferromolibdenovyy Zavod" (founded in 2005)	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
12	Pervomayskiy	urban settlement*	Zabaykalsky Krai	11 536	1937	1951**	opening of the rare-metal ore deposit in 1937	OJSC "Zabaikalskiy GOK" - <b>in the risk (to be closed down)</b>	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
13	Petrovskiy	urban settlement*	Ivanovo Oblast	4 283	1938	1938**	-	OJSC "Spirtzavod "Petrovskiy"" - <b>closed down in 2010</b>	food-manufacturing industry	manufacturing (11)	Manufacturing
14	Yuzha	urban settlement	Ivanovo Oblast	13 944	1628	1925	foundation of the spinning factory in the 1860s	OJSC "Yuzhskaya Pryadilno-tkatskaya Fabrika" - <b>closed down</b> LLC "Manufaktura Balina" (founded in 2006)	textile industry	manufacturing (13)	Manufacturing
15	Baykalsk	urban settlement	Irkutsk Oblast	13 721	1961	1966	foundation of the pulp-paper plant in 1961	OJSC "BCBK" - <b>closed down</b>	pulp-paper industry	manufacturing (17)	Manufacturing

16	Shelekhov	urban settlement	Irkutsk Oblast	46 775	1953	1962	foundation of the aluminum plant	OJSC "Sual" branch Irkaz Sual (belongs to JSC "RUSAL")	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
17	Yurga	urban district	Kemerovo Oblast	81 446	1898	1949	construction of the railway; foundation of the machine-building plant in 1943	LLC "Yurginskiy Machzavod"	machine industry (machinery for mining, quarrying and construction)	manufacturing (28)	Manufacturing
18	Anzhero-Sudzhensk	urban district	Kemerovo Oblast	80 248	1928	1931	construction of the railway; development of the coal deposit	OJSC "Shakhtoupravlenie Anzherskoe", LLC "Obogotitelnaya Fabrika Anzherskaya"	coal mining	mining and quarrying (05)	Mining
19	Prokopyevsk	urban district	Kemerovo Oblast	202 672	1918	1931	discovery and development of the coal deposit in the 1920s	LLC "Prokopyevskugol" (belongs to the holding company "Siberian Business Union")	coal mining	mining and quarrying (05)	Mining
20	Salair	urban settlement	Kemerovo Oblast	8 171	1626	1941	development of the silver deposit in the end of the 19th century	OJSC "Salairskiy GOK" - <b>bankrupted</b>	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
21	Tashtagol	urban settlement	Kemerovo Oblast	22 953	1939	1963	development of the iron ore deposit	Tashtagolsky rudnik (belongs to Evraz Group) - <b>in the risk (to be closed down due to the exploitation)</b>	ferrous metal industry (mining)	mining and quarrying (07)	Mining
22	Luza	urban settlement	Kirov Oblast	11 878	1899	1944	construction of the railway in the 19th century; location on the riverside (r. Luza); became a logway base for forerst products	OJSC "Luzsky LPK" - <b>closed down operations in 2008, now has a new owner</b>	timber industry	manufacturing (16)	Manufacturing

23	Vyatskiye Polyany	urban district	Kirov Oblast	33 584	1596	1942	exploration of new areas; construction of railway in 1915; foundation of the textile plant (which after World War II was changed to machinery plant)	OJSC "VPMZ "Molot" - declared bankrupt in 2012	hunting and sporting weapons production	manufacturing (25)	Manufacturing
24	Kirs	urban settlement	Kirov Oblast	10 809	1729	1965	foundation of the iron-foundry in 1729	OJSC "Kirskabel"	machine industry (cables production)	manufacturing (25)	Manufacturing
25	Belaya Kholunitsa	urban settlement	Kirov Oblast	11 751	1764	1965	foundation of the ironworks in 1764	OJSC "Belokholunitskiy machstroyzavod"	machine industry (conveyors production)	manufacturing (28)	Manufacturing
26	Pikalyovo	urban settlement	Leningrad Oblast	20 864	1932	1954	foundation of the cement plant in 1935-1941	CJSC "BazelCement-Pikalyovo", CJSC "Pikalyovsky cement" (belongs to Eurocement Group), OJSC "Pikalyovskaya soda"	cement industry, chemical industry	manufacturing (20, 23)	Manufacturing
27	Revda	urban settlement*	Murmansk Oblast	7 979	1950	1950**	development of the loparite ore deposit in the 1950s	LLC "Lovozersky GOK"	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
28	Kirovsk	urban district	Murmansk Oblast	29 878	1929	1931	discovery and development of the apatite deposit in the 1920s	OJSC "Apatit" (belongs to "Fosagro")	chemical industry (phosphate manufacturing)	manufacturing (20)	Manufacturing
29	Pestovo	urban settlement	Novgorod Oblast	15 824	1918	1965	construction of Oktyabrskaya railway; foundation of the saw-mill in 1924	"Lesnaya Innovatsionnaya Kompaniya (LIK)" - closed down operations in 2012, resumed operation in 2013	timber industry	manufacturing (16)	Manufacturing

30	Kuvandyk	urban settlement	Orenburg Oblast	24 990	the end of the 19th century	1953	foundation of the railway station in 1912	OJSC "Yuzhno-Uralsky Kriolitovy Zavod" (belongs to JSC "Rusal")- <b>in the risk (to be closed down)</b>	non-ferrous metal industry (mining)	manufacturing (24)	Manufacturing
31	Svetliy selsovet	rural settlement	Orenburg Oblast	3 319	-	-	-	-	-	-	-
32	Novotroitsk	urban district	Orenburg Oblast	100 758	1945	1945	discovery of the brown iron ore deposit in 1929; construction of the metallurgical complex in 1930-40s	OJSC "Uralskaya Stal" (belongs to the holding company "Metalloinvest")	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
33	Tyoplaya Gora	rural settlement*	Perm Krai	3 025	1880	1928**	foundation of the iron foundry	OJSC "Teliem" - <b>bankrupted</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
34	Krasnovishersk	urban settlement	Perm Krai	16 362	1894	1942	foundation of the metallurgical plant in 1894-97	CJSC "Uralalmaz", OJSC "Visherabumprom" - <b>both bankrupted</b>	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
35	Nytva	urban settlement	Perm Krai	19 624	1756	1942	foundation of the copper-smelting plant in 1756	OJSC "Nytva" NMZ - <b>was in the bankruptcy process duiing 2009-2010</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
36	Ochyor	urban settlement	Perm Krai	14 051	1759	1950	foundation of the iron works in 1759	OJSC "Ochyor Machine Building Plant"	machine industry (oil-field pumps production)	manufacturing (28)	Manufacturing
37	Chusovoy	urban settlement	Perm Krai	50 451	1874	1933	construction of the railway in 1874; foundation of the metallurgical plant in 1879	OJSC "Chusovoy Metallurgical Works (CMW)"	ferrous metal industry (metallurgical production)	manufacturing (25)	Manufacturing

38	Uralskiy	urban settlement*	Perm Krai	8 014	1948	1961**	foundation of the plywood mill in 1948	LLC "SVEZA Uralsky" (belongs to LLC "SVEZA")	timber industry (plywood production)	manufacturing (16)	Manufacturing
39	Yaroslavskiy	urban settlement*	Primorsky Krai	10 549	1951	1957**	founded as the settlement for construction workers and miners	LLC "Yaroslavskaya Gornorudnaya Kompaniya" (belongs to OJSC "RUSAL") - <b>stopped functioning</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
40	Svetlogorye	rural settlement	Primorsky Krai	1 622	1985	-	foundation of the mining processing plant with the base on the wolframium deposit	LLC "Lermontovsky GOK" - <b>closed down operations in 2008, resumed its work in 2009</b>	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
41	Dalnegorsk	urban district	Primorsky Krai	44 446	1899	1989	discovery of the zinc-lead ore deposit in 1897; founded as the settlement for miners	OJSC "Gornokhimicheskaya kompaniya "Bor" - <b>closed down operations in 2014, difficult ecological situation</b>	chemical industry	manufacturing (20)	Manufacturing
42	Belebey	urban settlement	The Republic of Bashkortostan	59 533	1715	1781	uyezd town in 1781; foundation of the machine-buiding plant in 1942; discovery of the oil deposit in 1953	OJSC "Belzan"	machine industry (production of parts for automobiles)	manufacturing (29)	Manufacturing
43	Kumertau	urban district	The Republic of Bashkortostan	66 159	1948	1953	development of the brown coal deposit in 1948	OJSC "Bashkirugol" - <b>closed down in 2009</b> , OJSC "Iskra" - <b>bankrupted</b> , OJSC "KumAPP" (helicopters production) - currently dominant	machine industry (helicopters)	manufacturing (30)	Manufacturing
44	Selenginsk	urban settlement*	The Republic of Buryatia	14 126	1961	1961**	foundation of the cellulose and paper production plant in 1956-1973	OJSC "Selenginsky CKK" - <b>closed down operations in 2013</b>	pulp-paper industry	manufacturing (17)	Manufacturing

45	Kaspiysk	urban district	The Republic of Dagestan	105 106	1932	1947	foundation of the engine-building plant in 1932	OJSC "Zavod Dagdizel" - <b>in the risk (to bankrupt)</b> , OJSC "Kaspiysky Zavod Tochnoy Mekhaniki"	machine industry (watercrafts motors) electronics (navigational instruments)	manufacturing (26, 28)	Manufacturing
46	Nadvoitsy	urban settlement*	The Republic of Karelia	8 057	16th century	1942**	development of the copper and gold deposits in the 18th century; construction of the railway in 1916; foundation of the aluminum factory in 1964	OJSC "NAZ-SUAL" (belongs to JSC "RUSAL") - <b>in the risk (to be closed down) in 2012</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
47	Pudozh	urban settlement	The Republic of Karelia	10 520	1382	1785, 1943	uyezd town in 1785; processing of glass plants in the 18th century; processing of saw-mills in the 19th century	LLC "Pudozhlesprom" - <b>bankrupted and closed down operations</b>	timber industry	manufacturing (16)	Manufacturing
48	Muizerskiy	urban settlement*	The Republic of Karelia	3 034	the 1930s, 1965 - was refounded after World War II	1965**	founded as the settlement for lumberers	OJSC "Muezersky Lespromkhoz" - <b>closed down operations</b>	timber industry	manufacturing (16)	Manufacturing
49	Pitkyaranta	urban settlement	The Republic of Karelia	11 224	the middle of the 19th century	1940	processing of pulp-paper and glass plants in the beginning of the 20th century; the town was almost destroyed during World War II	OJSC "CZ "Pitkyaranta" - <b>bankrupted</b>	pulp-paper industry	manufacturing (17)	Manufacturing



50	Kondopoga	urban settlement	The Republic of Karelia	32 279	1563	1938	discovery of the marble deposit in the 18th century; foundation of the hydro-electric power plant and the pulp-paper plant in 1923-29	OJSC "Kondopoga" - mass reduction of the employees in 2012-14	pulp-paper industry	manufacturing (17)	Manufacturing
51	Suoyarvi	urban settlement	The Republic of Karelia	9 270	16th century	1940	in 1926 the timber and the cardboard mills were founded	CJSC "Kartonnaya Fabrika Suoyarvi" - bankrupted, CJSC "ZAPKARELLES"	pulp-paper industry	manufacturing (17)	Manufacturing
52	Kamskie Polyany	urban settlement*	The Republic of Tatarstan	15 774	18th century	1981**	construction of the nuclear power station in 1981	LLC "Industrial Park "Kamskie Polyany" (since 2008), LLC "Termakom" - in bankruptcy process in 2014, LLC "KamDetalProekt"	machine industry (pumps production)	manufacturing (28)	Manufacturing
53	Zelenodolsk	urban settlement	The Republic of Tatarstan	98 120	19th century	1932	became the backwater wintering area and vessels' repair in the end of the 19th century	OJSC "Zelenodolskiy Zavod imeni A.M.Gorkogo", OJSC "PO "Zavod imeni Sergo"	ship-buiding industry	manufacturing (30)	Manufacturing
54	Chernogorsk	urban district	The Republic of Khakassia	75 656	1907	1936	development of the coal deposit in 1907	LLC "SUEK-Khakassia", CJSC "Rostvogormach", CJSC "Gukovpogruztrans"	coal mining, machine industry (machinery for mining, quarrying and construction)	mining and quarrying (05), manufacturing (28)	Monotowns with two activities

55	Gukovo	urban district	Rostov Oblast	65 264	1878	1955	development of the coal deposit in the end of the 19th century	OJSC "Gukovugol" (belongs to JSC "Russky Ugol") - <b>closed down in 2010</b> , OJSC "COF "Gukovskaya" CJSC "Rostovgormach", CJSC "Gukovpogruztrans", OJSC MC "Almaznaya" - <b>in the risk (to bankrupt)</b> , OJSC "Zamchalovskiy antracit", CJSC "GukovTelekom"	coal mining	mining and quarrying (05)	Mining
56	Krasnoturyinsk	urban district	Sverdlovsk Oblast	64 120	1758	1944	construction of the copper mines in 1748; development of the iron ore deposit since 1800; development of the gold deposit in 1823; discovery of the fire-clay deposit in 1930s	"Bogoslovskiy Aluminevy Zavod" (belongs to OJSC "RUSAL") - <b>closed down operations in 2013</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
57	Volchansk	urban district	Sverdlovsk Oblast	9 790	18th century	1956	discovery of the brown-coal deposit in 1859	LLC "Vochanskiy Ugol" - <b>in the bankruptcy process, will be closed down in 2017</b> , "Volchanskiy Mechanical Plant" - Branch of the OJSC "Scientific and Production Corporation" Uralvagonzavod" LLC "Volchanskiy Transport"	coal mining, machine industry (machinery components, lifting containers, etc.)	mining and quarrying (05), manufacturing (28)	Monotowns with two activities

58	Karpinsk	urban district	Sverdlovsk Oblast	30 891	1759	1941	foundation of the ironworks in 1759-1774	OJSC "Karpinskiy Electromachinostroitel'nyy Zavod", LLC "Zavod Gornogo Machinostroeniya", LLC "Machinostroitel'nyy Zavod "Zvezda"	machine industry (lifting equipment, machinery for mining, quarrying and construction, etc.)	manufacturing (28)	Manufacturing
59	Severouralsk	urban district	Sverdlovsk Oblast	42 619	1758	1944	processing of the cast iron and cooper-smelting plant in 1758-1827; discovery of the bauxite deposit in 1931	OJSC "Severalboksitruda" (belongs to JSC "RUSAL")	ferrous metal industry (mining)	mining and quarrying (07)	Mining
60	Kamensk-Uralskiy	urban district	Sverdlovsk Oblast	173 316	1682	1935	foundation of the iron foundry in 1701	OJSC "Sinarskiy Trubniy Zavod" (belongs to OJSC "TMK"), OJSC " Kamensk Uralskiy Metallurgical Works"	ferrous and non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
61	Pervouralsk	urban district	Sverdlovsk Oblast	149 580	1732	1933	foundation of the ironworks in 1727	OJSC "Pervouralskiy Novotrubniy Zavod" (belongs to ChTPZ) - <b>in the risk (to bankrupt)</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
62	Verkhnedneprovskiy	urban settlement*	Smolensk Oblast	12 392	1952	1956**	construction of the thermal power plant in 1952; foundation the nitrogen fertilizer plant in 1963	OJSC "Dorogobuzh"	chemical industry	manufacturing (20)	Manufacturing
63	Spirovo	urban settlement*	Tver Oblast	5 979	16th century	1932**	foundation of the glass plant in 1886	LLC "Industria" - <b>in the risk (to bankrupt)</b>	glass industry	manufacturing (23)	Manufacturing
64	Velikooktyabrskiy	urban settlement*	Tver Oblast	2 335	1832	1941**	foundation of the glass plant	OJSC "Velikooktyabrskoe steklo" - <b>closed down operations in 2010</b>	glass industry	manufacturing (23)	Manufacturing

65	Zapadnaya Dvina	urban settlement	Tver Oblast	8 630	1900	1937	foundation of the railway station in 1901	OJSC "Deveroobrabotchik" - <b>declared bankrupt in 2012</b>	timber industry	manufacturing (16)	Manufacturing
66	Kuvshinovo	urban settlement	Tver Oblast	9 574	17th century	1938	foundation of the pulp-paper plant in 1829	OJSC "Kamenskaya Bumazhno-kartonnaya Fabrika"	pulp-paper industry	manufacturing (17)	Manufacturing
67	Chegdomyn	urban settlement*	Khabarovsk Krai	13 425	1939	1949**	development of the coal deposit in 1941	OJSC "Urgapugol" (belongs to JSC "SUEK")	coal mining	mining and quarrying (05)	Mining
68	Ust-Katav	urban district	Chelyabinsk Oblast	26 285	1758	1928	foundation of the ironworks in 1758	FSUE "Ust-Katavsky Railcar named by Sergey Kirov" - branch of "Khrunichev State Research and Production Space Center"	machine industry (wagons production)	manufacturing (30)	Manufacturing
69	Nyazepetrovsk	urban settlement	Chelyabinsk Oblast	12 098	1747	1944	construction of the iron-foundry and ironworks in 1744	LLC "Liteyno-Mekhanicheskiy Zavod" - <b>declared bankrupt in 2010</b>	machine industry	manufacturing (28)	Manufacturing
70	Verkhniy Ufaley	urban district	Chelyabinsk Oblast	33 366	1761	1940	foundation of the iron-foundry and ironworks in 1761	OJSC "Ufaleynickel" - <b>in the risk (to bankrupt) in 2012, employees were sent in enforced leave in 2008</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
71	Karabash	urban district	Chelyabinsk Oblast	12 140	1822	1933	founded as the settlement of goldminers; discovery of the copper-sulphide gold ore deposit in 1934	CJSC "Karabashmed" - <b>declared bankrupt in 2002, difficult ecological situation</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
72	Asha	urban settlement	Chelyabinsk Oblast	30 714	1898	1933	foundation of the iron-foundry	OJSC "Ashinsky Metallurgichesky Zavod"	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing

73	Kanash	urban district	The Chuvash Republic	45 819	1891	1925	foundation of the railway station	CJSC "Promtraktor-Vagon", OJSC "Kanashsky Avtoagregatny Zavod"	machine industry (wagons production and production of parts for buses)	manufacturing (29, 30)	Manufacturing
74	Pesochnoe	rural settlement	Yaroslavl Oblast	2 505	18th century	-	foundation of the porcelain factory in 1884	CJSC "Pervomaysky Farfor" - <b>declared bankrupt in 2013</b>	porcelain producing	manufacturing (32)	Manufacturing
75	Gavrilov-Yam	urban settlement	Yaroslavl Oblast	17 468	1545	1938	foundation of the textile plant in 1872	OJSC "Gavrilov-Yamsky Lnokombinat" - <b>declared bankrupt in 2013</b> , OJSC "Gavrilov-Yamsky machstroyzavod "Agat"	machine industry (production of the details for aircraft motors)	manufacturing (30)	Manufacturing
<b>Category 2. Monotowns with risks of worsening socio-economic situation<sup>1</sup></b>											
76	Zarinsk	urban district	Altai Krai	47 579	1952	1979	foundation of the railway station in 1952; foundation of the chark-chemical process plant in 1981	OJSC "Altai-Koks" (belongs to NMLK group)	chemical industry (coke production)	manufacturing (19)	Manufacturing
77	Aleysk	urban district	Altai Krai	28 493	the 18th century	1939	town is located on the riverside (r. Aley); foundation of the sulfitation factory in 1931	CJSC "Aleyskzernoproduct" imeni S.N.Starovoytova	food-manufacturing industry	manufacturing (10)	Manufacturing
78	Yarovoye	urban district	Altai Krai	18 167	1944	1993	the bromine plant was moved to the town from Crimea	OJSC "Altaikhimprom" - <b>declared bankrupt in 2011</b>	chemical industry	manufacturing (20)	Manufacturing
79	Stepnoozerskiy possovet	urban settlement*	Altai Krai	6 497	1960	1984**	-	OJSC "Kuchuksulfat"	chemical industry	manufacturing (20)	Manufacturing

80	Severodvinsk	urban district	Arkhangelsk Oblast	188 420	1936	1938	founded as the settlement for shipbuilders	OJSC "PO "Sevmash", OJSC "CS "Zvezdochka"	machine industry (ship-building, nuclear-powered submarines)	manufacturing (30)	Manufacturing
81	Oktyabrskiy	urban settlement*	Arkhangelsk Oblast	10 484	1950	1958**	construction of the logway base	OJSC "Ustyales", OJSC "Oktyabrsky DSK"	timber industry	manufacturing (16)	Manufacturing
82	Novodvinsk	urban district	Arkhangelsk Oblast	39 613	1936	1977	foundation of the paper-pulp plant in 1935-41	OJSC "Arkhangelsk CBK" (belongs to Pulp Mill Holding)	pulp-paper industry	manufacturing (17)	Manufacturing
83	Koryazhma	urban district	Arkhangelsk Oblast	38 006	1535	1985	construction of the church in 1535; foundation of the paper-pulp plant in 1961	Branch of OJSC "Ilim Group" - <b>planned mass reduction of the employees in 2009</b>	pulp-paper industry	manufacturing (17)	Manufacturing
84	Surazh	urban settlement	Bryansk Oblast	11 186	17th century	1781	uyezd town in 1781; foundation of the paper-board plant in 1894	CJSC "Proletariy"	pulp-paper industry	manufacturing (17)	Manufacturing
85	Fokino	urban district	Bryansk Oblast	13 333	1899	1964	foundation of the cement plant in 1899	OJSC "Malcovsky portlandcement" (belongs to Eurocement group)	cement industry	manufacturing (23)	Manufacturing
86	Karachev	urban settlement	Bryansk Oblast	25 602	1146	1146	founded as the defense settlement; construction of the railway in the 18th century; was destroyed during World War II	CJSC "Karachevmolprom"	food-manufacturing industry	manufacturing (10)	Manufacturing
87	Pogar	urban settlement*	Bryansk Oblast	9 210	1155	1938**	the cigarette factory was moved to the town in 1910; foundation of another cigar factory in 1913-	OJSC "Pogarskaya Sigaretnaya Fabrika"	tobacco industry	manufacturing (12)	Manufacturing

							1915				
88	Bytosh	urban settlement*	Bryansk Oblast	5 083	1626	1929**	foundation of the glass plant in 1912	OJSC "Kvarcit" - declared bankrupt in 2011	glass industry	manufacturing (23)	Manufacturing
89	Ivot	urban settlement*	Bryansk Oblast	7 759	1805	1930**	foundation of the glass plant in 1785	OJSC "Ivotsteklo" - declared bankrupt in 2013	glass industry	manufacturing (23)	Manufacturing
90	Melenki	urban settlement	Vladimir Oblast	14 490	18th century	1778	foundation of the linen factory in 1733; foundation of the iron-foundry in 1920s	LLC "LitMach-M"	ferrous metal industry (iron casting) naukograd	manufacturing (24)	Manufacturing
91	Gorokhovets	urban settlement	Vladimir Oblast	13 326	1239	1239	uyezd town in 1778; foundation of the ship-building plant in 1902; foundation of the bakery plant in 1937	OJSC "Gorohovetsky Sudostroitelny Zavod" - was town-forming enterprise in the USSR, closed down, OJSC "Pizhevnik" - was town-forming enterprise recently, closed down in 2011	food-manufacturing industry	manufacturing (10)	Manufacturing
92	Frolovo	urban district	Volgograd Oblast	38 585	1859	1936	foundation of the railway station in 1870s	CJSC "Volga-FEST" - bankruptcy petition was filed in 2009	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
93	Mikhaylovka	urban district	Volgograd Oblast	88 806	1762	1948	became a rearward area during World War II; foundation of the cement plant and slate factory in 1953 and 1955 accordingly	OJSC "Sebryakovcement", JSCOT "SIPCCA"	cement industry	manufacturing (23)	Manufacturing

94	Semiluki	urban settlement	Voronezh Oblast	26 505	1926	1954	development of limestone, sandstone and clay deposits in the 19th century; construction of the railway station in 1894; foundation of the refractory plant in 1926	OJSC "Semilukskiy Ogneuporny Zavod" - <b>in the risk (to bankrupt)</b>	refractory industry	manufacturing (23)	Manufacturing
95	Elan-Kolenovskiy	urban settlement*	Voronezh Oblast	3 712	1936	1939**	foundation of the sugar-making factory	OJSC "Elan-Kolenovskiy Saharniy Zavod" (belong to Prodimeks Group)	food-manufacturing industry	manufacturing (10)	Manufacturing
96	Sherlovaya Gora	urban settlement*	Zabaykalsky Krai	12 385	1932	1938**	development of the tin ore deposit in 1932; development of the brown-coal deposit	OJSC "Razrez Kharanorskiy"	coal mining	mining and quarrying (05)	Mining
97	Krasnokamensk	urban settlement	Zabaykalsky Krai	54 608	1967	1969	discovery of the uranium deposit in 1963; foundation of the chemical plant in 1968	PJSC "Priargunskiy Mining and Chemical Union" (belongs to Rosatom Group) - <b>decline of production in 2015</b>	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
98	Vershino-Darasunskiy	urban settlement*	Zabaykalsky Krai	5 686	1865	1932**	discovery of the gold deposit in 1865	LLC "Darasunskiy Rudnik" (belongs to the gold mining company UGC) - <b>closed down operations in 2008, resumed its work in 2009</b>	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
99	Novoorlovsk	urban settlement*	Zabaykalsky Krai	3 034	1969	1982**	foundation of the ore mining and processing plant in 1940	CJSC "Novoorlovskiy GOK" - <b>production decline after 2008</b>	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining



100	Kokuy	urban settlement*	Zabaykalsky Krai	7 355	18th century	1938**	founded as the settlement for peasants who worked at the silver melt plant; construction of the river craft in the end of the 19th century for the purpose of Amur River Region territory development; foundation of the ship-building plant in 1935	LLC "Sretenskiy Sudostroitelny Zavod" - <b>bankruptcy process started in 2002, bankruptcy administration started in 2015</b>	ship-building industry	manufacturing (30)	Manufacturing
101	Novopavlovka	urban settlement*	Zabaykalsky Krai	3 782	1868	1938**	development of the coal mining in 1905	LLC "Mebelnyy Kombinat "Rassvet" - <b>mass reduction of the employees in 2007, bankruptcy petition was filed in 2014</b>	furniture industry	manufacturing (31)	Manufacturing
102	Kolobovo	urban settlement*	Ivanovo Oblast	3 552	middle of the 19th century	1941**	foundation of the weaving factory in 1873	OJSC "Kolobovskaya Tkatskaya Fabrika" - <b>declared bankrupt in 2010</b>	textile industry	manufacturing (13)	Manufacturing
103	Savino	urban settlement*	Ivanovo Oblast	5 240	1869	1938**	foundation of the railway station	LLC "Savinsky Pekar"	food-manufacturing industry	manufacturing (10)	Manufacturing
104	Navoloki	urban settlement	Ivanovo Oblast	13 011	1880s	1938	foundation of the textile factory in the 1880s	LLC "KhBK "Navteks" - <b>in bankruptcy process in 2009-2013</b>	textile industry	manufacturing (13)	Manufacturing
105	Furmanov	urban settlement	Ivanovo Oblast	35 367	1918	1918	founded as the joint of the factory settlements	OJSC "Furmanovskaya Fabrika №2" - <b>in bankruptcy process since 2011</b> , OJSC "Furmanovskaya Fabrika №1" - <b>in bankruptcy process since 2013</b> , OJSC "KhBK "Shuyskie Sitsy"	textile industry	manufacturing (13)	Manufacturing

106	Teykovo	urban district	Ivanovo Oblast	33 782	17th century	1918	foundation of the textile factory in 1787	OJSC "Teykovskiy KhBK" - <b>bankruptcy petition was filed, monitoring procedure was introduced in 2009</b>	textile industry	manufacturing (13)	Manufacturing
107	Kamenka	urban settlement*	Ivanovo Oblast	3 809	1868	1938**	foundation of the dyeing and finishing plant in 1868	LLC PP "Krasniy Oktyabr" - <b>declared bankrupt, in the process of winding-up in 2015</b>	textile industry	manufacturing (13)	Manufacturing
108	Tulun	urban district	Irkutsk Oblast	42 336	18th century	1927	construction of the railway	"Tulunskiy Gidrolizniy Zavod" - <b>bankrupted, closed down operations in 2005</b>	timber industry	manufacturing (16)	Manufacturing
109	Cheremkhovo	urban district	Irkutsk Oblast	51 324	1772	1917	discovery of the coal deposit in the end of the 19th century	Branch "Razrez CheremkhovUgol" of LLC "VostSibUgol"	coal mining	mining and quarrying (05)	Mining
110	Sayansk	urban district	Irkutsk Oblast	39 198	1970	1985	foundation of the chemical plant	OJSC "Sayankhimplast"	chemical industry	manufacturing (20)	Manufacturing
111	Usolye-Sibirskoe	urban district	Irkutsk Oblast	80 331	1669	1925	discovery of the saline in 1669	LLC "Usolyekhimprom" - <b>closed down in 2014</b>	chemical industry	manufacturing (20)	Manufacturing
112	Sosenskiy	urban district	Kaluga Oblast	11 583	1952	1991	discovery of the coal deposit in 1948; foundation of the automation and instrument-engineering plant in 1968-1975	"Sosenskiy Priborostroitelny Zavod" - Branch of FSUE "NPCAP" - "SPZ"	electronics	manufacturing (26)	Manufacturing
113	Mednogorskiy	urban settlement*	The Karachay-Cherkess Republic	5 654	1961	1981**	foundation of the mining and processing plant	CJSC "Urubskiy GOK"	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining

114	Mariinsk	urban settlement	Kemerovo Oblast	39 850	1698	1856	discovery of the stream gold deposit	OJSC "Spirtovoy Kombinat" - <b>bankrupted and closed down operations in 2011, resumed its work in 2013</b> , OJSC "Mariinskiy Likerovodochny Zavod" - <b>production decline in 2014</b> , LLC "Sibirskaya Vodochnaya Kompaniya" - <b>production decline in 2014</b>	food-manufacturing industry (spirits production)	manufacturing (11)	Manufacturing
115	Guryevsk	urban settlement	Kemerovo Oblast	24 137	1815	1938	foundation of the silver-smelting plant in 1816 (was changed to ironworks in 1820)	OJSC "Guryevskiy Metallurgichesky Zavod" <b>supervision procedure was introduced since 2009</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
116	Topki	urban settlement	Kemerovo Oblast	28 044	1914	1933	construction of Trans-Siberian railway; discovery of the limestone deposit; foundation of the cement plant in 1966	LLC "Topkinsky Cement" (belongs to "Sibirsky Cement") - <b>bankrupted in 1999-2001</b>	cement industry	manufacturing (23)	Manufacturing
117	Yashkino	urban settlement*	Kemerovo Oblast	14 244	1898	1928**	construction of Trans-Siberian railway; foundation of the limestone plant (was changed to cement plant in 1912, currently is not functioning) development of food-producing factories in 1960-80s	LLC "KDV "Yashkino"	food-manufacturing industry	manufacturing (10)	Manufacturing

118	Sheregesh	urban settlement*	Kemerovo Oblast	10 373	1914	1933**	discovery (in 1908-12) and development of the iron ore deposit	"Sheregeshsky Rudnik" (belongs to Evraz Group)	ferrous metal industry (mining)	mining and quarrying (07)	Mining
119	Myski	urban district	Kemerovo Oblast	44 840	1826	1956	discovery (in 1948) and development of the coal deposit	OJSC "Yuzhny Kuzbass" Razrez "Sibirginsky", OJSC "Yuzhny Kuzbass" - shakhta "Sibirginskaya", OJSC "Yuzhny Kuzbass"-COF "Sibir" (belong to OJSC "Mechel") - <b>bankruptcy petitions were filed regarding OJSC "Mechel" companies, OJSC "Mechel" in the high risk (to bankrupt)</b>	coal mining	mining and quarrying (05)	Mining
120	Tayga	urban district	Kemerovo Oblast	27 057	1898	1925	foundation of the railway station in 1898	Branches and structural subdivisions of OJSC "RZD"	transport services	transportation and storage (49)	Transportation
121	Mezhdurechensk	urban district	Kemerovo Oblast	101 038	1948	1955	development of the coal deposit	CJSC "Raspadskaya Ugolnaya Kompaniya"(belongs to Evraz Group), OJSC "Yuzhny Kuzbass" (belongs to OJSC "Mechel") - <b>bankruptcy petitions were filed regarding OJSC "Mechel" companies, OJSC "Mechel" in the high risk (to bankrupt), OJSC "Mezhdurechye" (belongs to LLC "Sibuglemet")</b>	coal mining	mining and quarrying (05)	Mining
122	Osinniki	urban district	Kemerovo Oblast	48 980	1926	1938	construction of the colliery	OJSC "Yuzhkuzbassugol" branch "Shakhta Osinnikovskaya"	coal mining	mining and quarrying (05)	Mining

								(belongs to Evraz Group)			
123	Leninsk-Kuznetskiy	urban district	Kemerovo Oblast	101 473	the 1880s	1925	discovery (in the 1880s) and development of the coal deposit	OJSC "SUEK-Kuzbass"	coal mining	mining and quarrying (05)	Mining
124	Berezovskiy	urban district	Kemerovo Oblast	49 396	1965	1965	development of the coal deposit	OJSC TsOF "Berezovskaya" (belongs to "Industrial Metallurgic Holding"), OJSC "Ugolnaya kompania "Severniy Kuzbass" (belongs to LLC "NTK")	coal mining	mining and quarrying (05)	Mining
125	Polysayevo	urban district	Kemerovo Oblast	30 262	1950	1989	development of the coal deposit in Leninsk-Kuznetskiy (was a part of this town); demerged in 1989	OJSC "SUEK-Kuzbass" shakhta "Polysayevskaya", OJSC "Shakhta "Zarechnaya" - <b>bankruptcy petition was filed in 2013, bankruptcy process was dismissed in 2015</b>	coal mining	mining and quarrying (05)	Mining
126	Krasnobrodskiy	urban district*	Kemerovo Oblast	14 665	1931	2006**	development of the coal deposit	"Krasnobrodsky Ugolny Razrez" (branch of OJSC UK "Kuzbassrazrezugol")	coal mining	mining and quarrying (05)	Mining

127	Belovo	urban district	Kemerovo Oblast	130 712	1726	1938	development of the coal deposit in 1851-55	LLC "Shakhta "Gramoteinskaya", LLC "Shakhta Chertinskaya Koksovaya" (belongs to Magnitogorsk Iron and Steel Works) - <b>bankrupted in 2004</b> , LLC "Shakhta Chertinskaya-Yuzhnaya" (belongs to Magnitogorsk Iron and Steel Works) - <b>planned temporary closing in 2015</b> , "Bachatskiy Ugolny Razrez" (branch of OJSC MC "Kuzbassrazrezugol"), LLC "Shakhta Listvyazhnaya"	coal mining	mining and quarrying (05)	Mining
128	Mundybash	urban settlement*	Kemerovo Oblast	4 854	1932	2006**	construction of the railway; foundation of the ore-dressing plant in 1931-35; development of the iron ore deposit in 1941 (ended in 1965)	LLC "Mundybashskaya Obogatitel'naya Fabrika" (belongs to LLC "Ruda Khakassii") - <b>was closed down in 2013 by its previous owner Evraz Group, resumed its work in 2014, stopped functioning in 2015</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
129	Kiselyovsk	urban district	Kemerovo Oblast	99 592	1917	1936	development of the coal deposit	LLC "Shakhta "Kiselyovskaya" - <b>closed down in 2014</b>	coal mining	mining and quarrying (05)	Mining
130	Krasnaya Polyana	urban settlement*	Kirov Oblast	6 407	1928	1949**	-	OJSC "Domostroitel"	timber industry	manufacturing (16)	Manufacturing
131	Demyanovo	urban settlement*	Kirov Oblast	6 403	-	1960**	foundation of the lumber factory in 1960	LLC "Poleko" - <b>supervision procedure was introduced</b>	timber industry	manufacturing (16)	Manufacturing

132	Murygino	urban settlement*	Kirov Oblast	7 471	1785	1938**	foundation of the paper plant	LLC "Elikon" - <b>bankrupted in 2010-11, a supervision procedure was introduced</b>	pulp-paper industry	manufacturing (17)	Manufacturing
133	Omutninsk	urban settlement	Kirov Oblast	23 246	1773	1921	foundation of the ironworks in 1773	OJSC "Omutninsk Metallurgical Plant"	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
134	Manturovo	urban district	Kostroma Oblast	16 400	1617	1958	construction of the railway station in 1906; foundation of the plywood mill in 1915	"SVEZA Manturovo" - <b>was in the risk (to be closed down) in early 2000s</b>	timber industry (plywood production)	manufacturing (16)	Manufacturing
135	Zheleznogorsk	urban district	Krasnoyarsk Krai	97 601	1950s	1954	construction of the carbon-uranium reactors in the 1950s; foundation of the integrated mining and chemical plant in 1958; foundation of the nuclear-waste disposal in 1989	FSUE "Gorno-Khimicheskiy Kombinat" (belongs to Rosatom Group), FSUE "GUSST №9 Pri Spetsstroye Rossii", "Khimzavod" (branch OJSC "Krasnoyarsky MachZavod"), OJSC "Information Satellite Systems - Reshetnev Company"	naukograd of the nuclear complex (CATU): chemical industry, machine industry (satellites production)	manufacturing (20, 30)	Manufacturing
136	Lesosibirsk	urban district	Krasnoyarsk Krai	65 229	1975	1975	foundation of saw-mills after the World War II	OJSC "Lesosibirskiy LDK №1" - <b>in the risk (to bankrupt) in 2013</b> , CJSC "Novoeniseyskiy Lesokhimicheskiy Komplex" - <b>in the risk (to bankrupt), temporary closed production in 2013</b>	timber industry	manufacturing (16)	Manufacturing
137	Borodino	urban district	Krasnoyarsk Krai	16 522	1949	1981	development of the coal deposit	OJSC "SUEK" branch "Razrez Borodinskiy"	coal mining	mining and quarrying (05)	Mining

138	Zelenogorsk	urban district	Krasnoyarsk Krai	64 343	1956	1956	founded as the CATU; foundation of the uranium-enrichment plant in the 1950s	JSC «PA «Electrochemical Plant» (belongs to Rosatom Group)	naukograd of the nuclear complex (CATU); chemical industry, electroenergetics	manufacturing (20), electricity, gas, steam and air conditioning supply (35)	Monotowns with two activities
139	Norilsk	urban district	Krasnoyarsk Krai	177 326	1935	1953	foundation of the mining and smelting plant	MMC "Norilsk Nickel" <b>difficult ecological situation</b>	non-ferrous metal industry (mining and metallurgical production)	mining and quarrying (07), manufacturing (24)	Monotowns with two activities
140	Petukhovo	urban settlement	Kurgan Oblast	10 628	1892	1944	construction of Trans-Siberian Railway; foundation of the casting and mechanical plant in 1903	OJSC "Petukhovskiy Liteyno-Mekhanicheskiy Zavod" - <b>production decline in 2014</b>	machine industry (production of parts for the railway transport)	manufacturing (30)	Manufacturing
141	Dalmatovo	urban settlement	Kurgan Oblast	13 743	1644	1947	uyezd town in 1781; foundation of the machine-buiding plant in 1945-46	OJSC "Zavod Start"	machine industry (tankers production)	manufacturing (29)	Manufacturing
142	Kataysk	urban settlement	Kurgan Oblast	13 169	1655	1944	founded as a fort; the pump-producing plant was moved to the town from Melitopol (Ukraine) during World War II	CJSC "Katayskiy Nasosniy Zavod"	machine industry (pumps production)	manufacturing (28)	Manufacturing
143	Zheleznogorsk	urban district	Kursk Oblast	97 601	1957	1962	development of the iron ore deposit	OJSC "Mikhaylovsky GOK" (belongs to MetallInvest MC LLC)	ferrous metal industry (mining and metallurgical production)	mining and quarrying (07), manufacturing (24)	Monotowns with two activities



144	Slantsy	urban settlement	Leningrad Oblast	34 069	1934	1949	discovery of the shale deposit in 1926-27	OJSC "Slantsevy Zavod "Cesla" (belongs to HeidelbergCement), OJSC "Zavod "Slantsy" - <b>declared bankrupt in 2013</b> , OJSC "Leningradslanets" - <b>declared bankrupt in 2011</b> , LLC "Cement"	shale mining	mining and quarrying (08)	Mining
145	Susuman	urban settlement	Magadan Oblast	5 157	1936	1964	development of the gold deposit in 1937	OJSC "Susumansky GOK "Susumanzoloto"	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
146	Monchegorsk	urban district	Murmansk Oblast	46 628	1934	1937	development of the copper-nickel deposit in 1934	OJSC "Kolskaya GMK" (belongs to MMC "Norilsk Nickel")	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
147	Kovdor	urban district	Murmansk Oblast	19 791	1953	1965	development of the iron ore deposit; foundation of the mining and processing plant 1938-55	OJSC "Kovdorsky GOK" (belongs to EuroChem Group)	ferrous metal industry (mining)	mining and quarrying (07)	Mining
148	Nikel	urban settlement*	Murmansk Oblast	12 548	1944	1945**	foundation of the plant in the 1930s (when the territory belonged to Finland); was almost destroyed during World War II, the rehabilitation started in 1944-45	OJSC "Kolskaya GMK" (belongs to MMC "Norilsk Nickel")	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing

149	Zapolyarnyy	urban settlement	Murmansk Oblast	15 424	1956	1963	development of the copper-nickel deposit in 1956	OJSC "Kolskaya GMK" (belongs to MMC "Norilsk Nickel")	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
150	Olenegorsk	urban district	Murmansk Oblast	29 577	1916	1957	construction of the railway in 1916	OJSC "Olenegorsky GOK" (belongs to PJSC "Severstal") - closed down operations in 2008, resumed its work in 2009	ferrous metal industry (mining)	mining and quarrying (07)	Mining
151	Zavolzhye	urban settlement	Nizhny Novgorod Oblast	39 344	1947	1964	construction of the hydro-electric power plant in 1947; foundation of the engine-building plant in 1958	OJSC "Zavolzhsky Motorny Zavod" (ZMZ) (belongs to OJSC "Sollers") - in the risk of mass reduction of the employees in 2014 due to the demand decrease	machine industry (motors production)	manufacturing (07)	Manufacturing
152	Gruzinskoe	rural settlement	Novgorod Oblast	2 836	2004	-	founded as the joint of 35 small settlements	LLC "Novgorodskaya Farforovaya Manufaktura" - declared bankrupt in 2013	porcelain producing	manufacturing (32)	Manufacturing
153	Parfino	urban settlement*	Novgorod Oblast	7 227	1495	1938**	foundation of the plywood plant in 1910	OJSC "Parfinsky Fanerny Kombinat" - bankrupted and closed down operations in 2008, planned to resume its work in 2013	timber industry (plywood production)	manufacturing (16)	Manufacturing
154	Linevo	urban settlement*	Novosibirsk Oblast	19 330	1974	-	foundation of the electrode plant in 1967-74	CJSC "ENERGOPROM - Novosibirsky Electroodniy Zavod" (belongs to ENERGOPROM Group) - bankrupted in 1999, still functioning	machine industry (electrodes production)	manufacturing (27)	Manufacturing

155	Gorny	urban settlement*	Novosibirsk Oblast	9 732	1953	1969**	construction of Novosibirskaya hydro-electric power plant; foundation of the prefabricate plant in 1974	Gornovskiy Zavod SpecZhelezoBetona (Branch OJSC "BET")	concretes production	manufacturing (23)	Manufacturing
156	Sol-Iletsk	urban settlement	Orenburg Oblast	27 338	1754	1945	development of the salt deposit in the 18th century	OJSC "IletskSol" (belongs to LLC "RusSol")	salt mining	mining and quarrying (08)	Mining
157	Yasnyy	urban settlement	Orenburg Oblast	15 598	1961	1979	discovery of the asbestos deposit; foundation of the mining and processing plant	OJSC "Orenburgskkiye Mineraly"	chrysolite mining	mining and quarrying (08)	Mining
158	Mtsensk	urban district	Oryol Oblast	39 783	1146	1146	founded as a fort and trade center; faded in its defense importance in the 17th century with the territory expansion; uyezd town in 1778; specialized in lacemaking in the 19th century; was occupied during the World War II; foundation of the foundry in 1965-67	OJSC "Mtsenskiy Liteyniy Zavod (MLZ)" (belonged to OJSC "ZIL") OJSC "Mtsensk Engineering Plant - Kommash"	ferrous metal industry (metallurgical production), machine industry (sanitation trucks)	manufacturing (25, 29)	Manufacturing
159	Serdobsk	urban settlement	Penza Oblast	33 992	1699	1780	founded as a fort; uyezd town in 1780; new factories emerged after World War II	CJSC "Serdobskiy Machinostroitelny Zavod"	machine industry (trailers production)	manufacturing (29)	Manufacturing

160	Zarechnyy	urban district	Penza Oblast	64 095	1958	1958	foundation of the instrument-engineering plant in 1954-58 (primarily was producing complementary parts for nuclear weapons); creation of the restricted area in 1962	FSUE FNPC "PO "Start"	naukograd of the nuclear complex (CATU); electronics	manufacturing (26)	Manufacturing
161	Gornozavodsk	urban settlement	Perm Krai	12 097	1947	1965	foundation of the cement plant in 1947-55	OJSC "GornozavodskCement "	cement industry	manufacturing (23)	Manufacturing
162	Alexandrovsk	urban settlement	Perm Krai	14 244	1783	1951	foundation of the metallurgical plant in 1808	OJSC "Alexandrovsk Machine Building Plant (AMZ)" - <b>unpaid wages in 2014-2015</b>	machine industry (conveyors production)	manufacturing (28)	Manufacturing
163	Pashiya	rural settlement*	Perm Krai	4 031	1786	1929**	foundation of the ironworks in 1782-86	OJSC "Pashiyskiy Metallurgicheskoye Cementniy Zavod" - <b>bankruptcy petition was filed in 2010-2011</b>	cement industry, ferrous metal industry (metallurgical production)	manufacturing (23, 25)	Manufacturing
164	Yugo-Kamskiy	rural settlement*	Perm Krai	9 315	1746	1929**	foundation of the cooper-smelting plant in 1746	LLC "Yugo-Kamskiy Machinostroytelnyy Zavod" - <b>closed down operations in 2009, declared bankrupt in 2010</b>	machine industry (fasteners, armature and crans production)	manufacturing (28)	Manufacturing
165	Luchegorsk	urban settlement*	Primorsky Krai	19 886	1966	1966**	discovery of the brown-coal deposit in 1893; foundation of the thermal power plant in 1968	CJSC "Luchegorskiy TEK", incl. "Luchegorskiy Ugolnyy Razrez" (belongs to OJSC "Dalnevostochnaya Generiruyuschaya Kompaniya (DGK)") - <b>bankruptcy petition was filed in 2006, bankruptcy process</b>	electroenergetics	coal mining (07), electricity, gas, steam and air conditioning supply (35) - dominant	Power generation

								was dismissed			
166	Arsenyev	urban district	Primorsky Krai	54 085	1902	1952	foundation of the aircraft-repair plant	OJSC "Arsenyevskaya Aviatsionnaya Kompaniya "Progress"	aircraft industry (military helicopters production)	manufacturing (30)	Manufacturing
167	Novoshakhtinskiy	urban settlement*	Primorsky Krai	8 103	1963	1967**	discovery of the brown coal deposit	RazrezUpravlenie "Novoshakhtinskoe" (belongs to OJSC "Primorskugol") - production decline and reduction of the employees in 2013	coal mining	mining and quarrying (05)	Mining
168	Vostok	urban settlement*	Primorsky Krai	3 914	1968	1980**	discovery of the non-ferrous metals deposit in 1961	The group of companies OJSC "Primorsky GOK" (Primorsky) and OJSC "A&IR Mining" (A&IR)	non-ferrous metal industry (mining)	mining and quarrying (08)	Mining
169	Spassk-Dalnyy	urban district	Primorsky Krai	42 491	1886	1917	construction of Trans-Siberian railway; foundation of the cement plants in 1907, 1932-34, and 1976	OJSC "SpasskCement" - the old plant was closed down due to pollution in 2008	cement industry	manufacturing (23)	Manufacturing

170	Zakamensk	urban settlement	The Republic of Buryatia	11 455	1934	1944	discovery of the wolframium deposit in 1932-34	CJSC "Zakamensk", LLC "Liteyschik" <b>difficult ecological situation</b>	non-ferrous metal industry (mining), machine industry (machinery for mining, quarrying and construction)	mining and quarrying (08), manufacturing (28)	Monotowns with two activities
171	Gusinoozersk	urban settlement	The Republic of Buryatia	24 774	1939	1953	development of the brown-coal mining in 1939; foundation of the thermal power plant in 1968-76	OJSC "Gusinoozersk SDPP"	electroenergetics	electricity, gas, steam and air conditioning supply (35)	Power generation
172	Kamensk	urban settlement*	The Republic of Buryatia	7 866	1949	1961**	foundation of the cement plant in the 1940s	LLC "TimluyCement" - <b>bankrupted and closed down in 2004, resumed its work</b> , LLC "Timluykiy Zavod"	cement industry	manufacturing (23)	Manufacturing
173	Dagenstanskiye Ogni	urban district	The Republic of Dagestan	28 132	1914	1990	foundation of the glass plant in 1914	LLC "Dagsteklotara"	glass industry	manufacturing (23)	Manufacturing
174	Segezha	urban settlement	The Republic of Karelia	28 117	1914	1943	construction of the railway station in 1914; foundation of the pulp-paper plant in 1939	OJSC "Segezhskiy CBK" - <b>mass reduction of the employees in 2008, temporarily closed down in 2008 and 2012, possible reduction of the employees in 2015</b>	pulp-paper industry	manufacturing (17)	Manufacturing
175	Pindushi	urban settlement*	The Republic of Karelia	5 040	1933	1950**	construction of the ship-yard	OJSC "Kareliya DSP" - <b>closed down in 2012</b>	timber industry (wood-processing)	manufacturing (16)	Manufacturing
176	Lakhdenpokhya	urban settlement	The Republic of Karelia	7 539	1600	1945	belonged to Finland untill 1924	Lahdenpohja Plywood Mill "Bumex" - <b>in the risk (to be closed down) in 2013</b>	timber industry (plywood production)	manufacturing (16)	Manufacturing

177	Kostomuksha	urban district	The Republic of Karelia	29 586	1977	1983	foundation of the mining processing plant with the base on the iron ore deposit	OJSC "Karelskiy Okatysh" (belongs to PJSC "Severstal") - <b>production decline after 2008</b>	ferrous metal industry (mining)	mining and quarrying (07)	Mining
178	Vyartsilya	urban settlement*	The Republic of Karelia	3 013	1499	1946**	belonged to Sweden, Russia and Finland in different time periods; foundation of the metallurgical plant in 1851; joined Russia during Russian-Finnish War 1939-40	CJSC "Vyartsilya Metal Products Plant" (belongs to OJSC "Mechel") - <b>reduction of the employees since 2014, JSC "Mechel" in the high risk (to bankrupt)</b>	metallurgical production	manufacturing (25)	Manufacturing
179	Yemva	urban settlement	The Komi Republic	13 773	1941	1985	-	LLC "Knyazhpogostskiy Zavod DVP" - <b>in the bankruptcy process, bankruptcy administration was introduced in 2010</b>	timber industry (wood-processing)	manufacturing (16)	Manufacturing
180	Umet	urban settlement*	The Republic of Mordovia	2 849	17-18th century	1959**	foundation of the saw-mill in 1896	CJSC "Plyterra"	timber industry (wood-processing)	manufacturing (16)	Manufacturing
181	Ruzaevka	urban settlement	The Republic of Mordovia	46 437	1631	1937	construction of the railway in 1893; foundation of the machine-building plant in 1959-61	OJSC "Ruzkhimmash" - <b>unpaid wages in 2014</b>	machine industry (production of railway rolling stocks)	manufacturing (30)	Manufacturing
182	Kadoshkino	urban settlement*	The Republic of Mordovia	4 542	1893	1968**	foundation of the electrotechnical plant in 1965	OJSC "Kadoshkinskiy Electrotekhnicheskiy Zavod"	electrical manufacturing industry (lighting production)	manufacturing (27)	Manufacturing
183	Atyashevo	urban settlement*	The Republic of Mordovia	6 119	1894	1963**	construction of the railway in 1894	LLC "Myasopererabativayuschiy Complex"	food-manufacturing industry	manufacturing (10)	Manufacturing

								"Atyashevskiy"			
184	Neryungri	urban settlement	The Sakha Republic (Yakutia)	58 846	1975	1975	development of the coal deposit	OJSC "Yakutugol" (belongs to JSC "Mechel") - JSC "Mechel" in the high risk (to bankrupt)	coal mining	mining and quarrying (05)	Mining
185	Mokhsogollokh	urban settlement*	The Sakha Republic (Yakutia)	6 248	1958	1964**	foundation of the cement plant in 1959	OJSC PO "YakutCement"	cement industry	manufacturing (23)	Manufacturing
186	Udachny	urban settlement	The Sakha Republic (Yakutia)	11 636	1968	1987	discovery (in 1955) and development of the pipe-diamond deposit	Udachny Mining and Processing Division (belongs to ALROSA Group)	diamond mining	mining and quarrying (08)	Mining
187	Nizhniy Kuranakh	urban settlement*	The Sakha Republic (Yakutia)	6 559	1947	1950**	discovery and development of the gold-placer deposit; foundation of the mining and processing plant in 1965	OJSC "AldanZoloto GRK"	non-ferrous metal industry (mining)	mining and quarrying (08)	Mining
188	Elabuga	urban settlement	The Republic of Tatarstan	72 435	16th century	1780	uyezd town in 1780	the group of companies OJSC Sollers (CJSC "SOLLERS-ISUZU", OJSC "PO ELAZ", LLC "SOLLERS Elabuga", LLC "ZASS Alabuga", LLC "Avtomaster", LLC "Ansan Alabuga", LLC "D PLASTEFTK RT")	machine industry (automobiles production)	manufacturing (29)	Manufacturing



189	Abaza	urban district	The Republic of Khakassia	16 238	1867	1966	discovery (in 1856) and development of the iron ore deposit; foundation of the ironworks in 1867; mining works stopped in 1926 and resumed after 1957	Abakan Branch of OJSC "Evrazruda" (belongs to Evraz Group) - <b>reduction of the employees in 2013</b>	ferrous metal industry (mining)	mining and quarrying (07)	Mining
190	Tuimskiy selsoviet	rural settlement	The Republic of Khakassia	3 873	1925	-	foundation of the non-ferrous metal working plant (started its work in 1987)	LLC "Tuimskiy Zavod OCM" - <b>closed down in 2014</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
191	Sayanogorsk	urban district	The Republic of Khakassia	62 001	1975	1975	construction of Sayano-Shushenskaya hydro-electric power plant; foundation of the aluminum plant	OJSC "RUSAL "Sayanogorsk Aluminium Smelter" - <b>production decline in 2013-2014</b> , JSC "RUSAL SAYANAL"	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
192	Zverevo	urban district	Rostov Oblast	22 664	1819	1989	founded as the settlement for coal-miners	OJSC "Shakhtoupravlenie "Obukhovskaya"	coal mining	mining and quarrying (05)	Mining
193	Skopin	urban district	Ryazan Oblast	29 141	12th century	1663	founded as a fort; uyezd town in 1778; was a coal mining town since the second half of the 19th century till 1989; foundation of the machine-building plant in 1962	OJSC "Skopinskiy Avtoagregatniy Zavod"	machine industry (vehicle components production)	manufacturing (29)	Manufacturing

194	Petrovsk	urban settlement	Saratov Oblast	30 147	end of the 17th century	1780	founded as a fort; uyezd town in 1780; foundation of the electromechanical plant in 1938	FSUE "Petrovskiy Electromekhanicheskiy Zavod "MOLOT" - <b>in the bankruptcy process in 2006-10, unpaid wages in 2013</b>	electronics	manufacturing (26)	Manufacturing
195	Krasnouralsk	urban district	Sverdlovsk Oblast	24 414	1925	1932	discovery and development of the copper deposit; foundation of the copper-smelting plant	OJSC "Svyatogor" - <b>reduction of the employees in 2009</b>	ferrous metal industry (mining and metallurgical production)	mining and quarrying (07), manufacturing (24)	Monotowns with two activities
196	Kachkanar	urban district	Sverdlovsk Oblast	42 520	1958	1968	development of the titanium magnetite ore deposit; foundation of the mining and processing plant in 1963	OJSC "Evraz Kachkanarskiy GOK" (belongs to Evraz Group) - <b>expected mass reductions of the employees in 2013, 2015</b>	ferrous metal industry (mining and metallurgical production)	mining and quarrying (07), manufacturing (24)	Monotowns with two activities
197	Verkhnyaya Tura	urban district	Sverdlovsk Oblast	9 205	1737	1941	foundation of the ironworks in 1737	FSUE "Vekhneturinskiy Mashinostroitelny Zavod" (belongs to Rostech Corporation) - <b>production decline, bankruptcy petition was filed in 2013</b>	ammunition supplies production	manufacturing (25)	Manufacturing
198	Serov	urban district	Sverdlovsk Oblast	107 165	1894	1926	foundation of the metallurgical plant	OJSC "Metallurgic plant named after A.K.Serov" (belongs to Ural Mining and Metallurgical Company) - <b>mass reduction of the employees in 2014</b> , OJSC "Serov Ferro-alloy Plant", OJSC "Serovskiy Mekhanicheskiy Zavod"	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing

199	Verkhnyaya Salda	urban district	Sverdlovsk Oblast	47 530	1778	1938	foundation of the ironworks in 1778; foundation of the constructional ironworks in 1931	OJSC "Corporation VSMPO-AVISMA" (belongs to Rostech Corporation) - <b>switch to half-time week after 2008</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
200	Zharkovskiy	urban settlement*	Tver Oblast	3 905	1920s	1950**	development of the timber industry; construction of the railway in the 1930; foundation of the wood-working intergate plant in 1943	LLC "Zharkovskiy DOC"	timber industry (plywood production)	manufacturing (16)	Manufacturing
201	Likhoslavl	urban settlement	Tver Oblast	12 544	1624	1925	construction of the railway station in 1849; foundation of the instrument-engineering plant in 1947	LLC "Likhoslavskiy Zavod" Svetotekhnika"	electrical manufacturing industry (lighting production)	manufacturing (27)	Manufacturing
202	Seversk	urban district	Tomsk Oblast	115 472	1949	1954	construction of Siberian nuclear-power plant; foundation of the chemical plant	OJSC "Sibirskiy Khimicheskiy Kombinat" (belongs to Rosatom Group)	naukograd of the nuclear complex (CATU): chemical industry	manufacturing (20)	Manufacturing
203	Aleksin	urban settlement	Tula Oblast	59 157	1298	1348	founded as a fort; foundation of the ironworks in 1728; uyezd town in 1777	OJSC "Tyazhpromarmatura"	metallurgical production (pipelines valves)	manufacturing (24)	Manufacturing

204	Efremov	urban settlement	Tula Oblast	37 608	1637	1637	founded as a fort; uyezd town in 1777; foundation of the chemical plants in 1933, 1970 and 1982	OJSC "Efremovskiy Zavod Sinteticheskogo Kauchuka (EZSK)", Efremovskiy Khimicheskii Zavod (belongs to OJSC "Shchekinoazot"), OJSC "Efremovskiy Biokhimicheskii Zavod"	chemical industry	manufacturing (20)	Manufacturing
205	Votkinsk	urban district	The Udmurt Republic	98 045	1759	1935	foundation of the ironworks in 1759	OJSC "Votkinskiy Zavod"	machine industry (military rocketry production and machine-tool manufacturing)	manufacturing (30)	Manufacturing
206	Sarapul	urban district	The Udmurt Republic	99 869	1596	1596	uyezd town in 1780; foundation of the machine-building plants in 1941, 1942 and 1968	OJSC "Sarapulskiy Elektrogeneratorni Zavod", OJSC "Elecond", OJSC "Sarapulskiy Radiozavod" - <b>bankruptcy petition filed in 2010, bankruptcy process was dismissed</b>	machine industry (aircraft equipment, condensers)	manufacturing (30)	Manufacturing
207	Dimitrovgrad	urban district	Ulyanovsk Oblast	118 513	beginning of the 18th century	1919	foundation of the distillery; foundation of the experimental station for nuclear reactors in 1956	OJSC "State Scientific Center - RIAR" (belongs to Rosatom Group)	naukograd: research and advanced development center	professional, scientific and technical activities (72)	Scientific
208	Elban	urban settlement*	Khabarovsk Krai	11 639	1936	1951**	foundation of the mechanical plant	FSUE "DVPO "Voskhod"	chemical industry	manufacturing (20)	Manufacturing
209	Minyar	urban settlement	Chelyabinsk Oblast	9 885	1771	1943	foundation of the ironworks in 1784	CJSC "Minyarskiy Metizno-Metallicheskiy Zavod"	ferrous metal industry (metallurgical production)	manufacturing (25)	Manufacturing

210	Sim	urban settlement	Chelyabinsk Oblast	13 753	1759	1942	foundation of the ironworks in 1759-61	OJSC "Agregat"	aircraft industry (aeroplane units)	manufacturing (30)	Manufacturing
211	Bakal	urban settlement	Chelyabinsk Oblast	20 412	1757	1951	development of the iron ore deposit in 1757	LLC "Bakalskoe Rudoupravlenie" - <b>bankruptcy petition was filed in 2014</b>	ferrous metal industry (mining)	mining and quarrying (07)	Mining
212	Satka	urban settlement	Chelyabinsk Oblast	44 863	1756	1937	foundation of the ironworks in 1756; discovery of the magnesite deposit in the end of the 19th century; foundation of the processing plant	OJSC "Kombinat "Magnesit" - <b>planned mass reduction of the employees in 2008</b>	refractory industry	manufacturing (23)	Manufacturing
213	Ozersk	urban district	Chelyabinsk Oblast	91 276	1945	1994	foundation of the nuclear ammunition plant in 1945	FSUE "PO "Mayak" (belongs to Rosatom Group)	naukograd of the nuclear complex (CATU): isotope production	manufacturing (25)	Manufacturing
214	Miass	urban district	Chelyabinsk Oblast	166 564	1773	1926	foundation of the copper-smelting plant in 1773 (closed in the 1820s); discovery of the gold deposit in the 19th century; foundation of the machine-building plants in 1941, 1942, 1947 and 1959	OJSC "URAL" Automobile Works" - <b>mass reduction of the employees in 2015</b> , OJSC "MiassElektroApparat" , OJSC "Academian V.P.Makeyev State Rocket Centre", OJSC "Miasskiy Mashinostroitelny Zavod" - <b>bankruptcy petition was filed in 2011, bankruptcy process was dismissed</b>	machine industry (commercial vehicles, rocketry, defense production)	manufacturing (29, 30)	Manufacturing

215	Zlatoust	urban district	Chelyabinsk Oblast	173 137	1754	1865	foundation of the ironworks in 1754; foundation of the weapon factory in 1815 and steelworks in 1857; foundation of the metallurgical plant in 1902	OJSC "Zlatoust Metallurgical Works" - <b>declared bankrupt in 2013</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
216	Chebarkul	urban district	Chelyabinsk Oblast	40 892	1736	1951	founded as a fort; the metallurgical plant was moved to the town during World War II (changed its specialization)	OJSC "Uralskaya Kuznitsa" (belongs to OJSC "Mechel") - <b>JSC "Mechel" in the high risk (to bankrupt)</b>	ferrous metal industry (metallurgical production)	manufacturing (25)	Manufacturing
217	Alatyr	urban district	The Chuvash Republic	36 610	1552	1552	founded as a fort; uyezd town in 1780; construction of the railway in 1893; foundation of the electrical manufacturing plants in the 1950-60s	OJSC "Electropribor" - <b>in the risk (to bankrupt) in 2015</b> , OJSC "Alatyrskiy Mekhanicheskiy Zavod", OJSC "Electroavtomat", OJSC "5 Arsenal"	electrical manufacturing (production of relays), machine industry (production of spare-parts for trucks)	manufacturing (27, 29)	Manufacturing
218	Shumerlya	urban district	The Chuvash Republic	30 536	1916	1937	construction of the railway	OJSC "Kombinat Avtomobilnikh Furgonov", OJSC "Shumerlinskiy Zavod Specializirovannikh Avtomobiley"	automobile industry	manufacturing (30)	Manufacturing
219	Mariinskiy Posad	urban settlement	The Chuvash Republic	8 778	1620	1856	-	LLC "Khlebokombinat "Marposadskiy", Branch of FSUE "Rosspirtrom" - Alcohol Plant "Marposadskiy" - <b>closed down in 2010</b>	food-manufacturing industry	manufacturing (10)	Manufacturing

220	Beringovskiy	urban settlement*	Chukotka Autonomous Okrug	1 003	1941	1957**	discovery(in 1826) and development (in the 1930s) of the coal deposit	OJSC "Shakhta "Nagornaya"	coal mining	mining and quarrying (05)	Mining
221	Rostov	urban settlement	Yaroslavl Oblast	30 923	862	862	was an administrative and cultural center; uyezd town in 1777; construction of the railway in 1870; foundation of the optical-mechanical plant in 1968-75	OJSC "Rostovskiy Optiko-Mekhanicheskiy Zavod"	instrument-manufacturing industry	manufacturing (26)	Manufacturing
222	Tutaev	urban settlement	Yaroslavl Oblast	40 380	13th century	1822	was an administrative center; uyezd town in 1777; foundation of the engine-building plant in 1973	OJSC "Tutaevskiy Motorniy Zavod" - <b>bankruptcy process was dismissed in 2005, planned reduction of the employees in 2008</b>	engine-building industry	manufacturing (29)	Manufacturing
<b>Category 3. Monotowns with the stable socio-economic situation<sup>1</sup></b>											
223	Novoaltaysk	urban district	Altai Krai	70 988	1736	1942	construction of the railway in 1915; foundation of the wood-processing plant in 1934; the wagon-building plant was moved to the town in 1941	OJSC "Altaivagon" - <b>production decline and temporarily closed down operations in 2015</b>	machine industry (wagons production)	manufacturing (30)	Manufacturing
224	Tinda	urban district	Amur Oblast	34 169	1917	1975	founded as the staging post for goldminers and explorers of Russian Far East; construction of the railway	Branch of OJSC "Russian Railways" - Dalnevostochnaya Zheleznaya Doroga - <b>services decline and planned mass reduction of the employees in</b>	transport services	transportation and storage (49)	Transportation

								2009			
225	Belogorsk	urban district	Amur Oblast	68 041	1860	1926	construction of the railway station in 1913; foundation of the construction company in 1991	The SK MOST Group of companies	construction industry (roads, bridges, etc.)	construction (42)	Service
226	Gubkin	urban district	Belgorod Oblast	120 577	1931	1955	development of the iron ore deposit in the 1930s	OJSC "Lebedinsky GOK" (belongs to the holding company "Metalloinvest")	ferrous metal industry (mining)	mining and quarrying (07)	Mining
227	Selso	urban district	Bryansk Oblast	17 140	1870	1990	construction of the railway in the 1860-70s	FSUE "Bryanskiy Khimicheskiy Zavod 50-letiya SSSR"	chemical industry (military and industrial explosives)	manufacturing (20)	Manufacturing
228	Klintsi	urban district	Bryansk Oblast	69 593	1707	1925	textile industrial center in the 1830s; foundation of the cranmobile-producing plant in 1929	OJSC "Klintsovskiy Avtokranoviy Zavod"	machine industry (cranmobile production)	manufacturing (28)	Manufacturing
229	Lyubokhna	urban settlement*	Bryansk Oblast	6 215	1626	1939**	foundation of the iron-foundry in 1755	OJSC "Santehlit" - production decline after 2008	heat radiators production	manufacturing (25)	Manufacturing



230	Stavrovo	urban settlement*	Vladimir Oblast	7 727	1450	1958**	development of the textile industry in the 18-19th century; foundation of the engine-building plant in 1946 (has become the industrial park recently)	LLC "STiS-Vladimir"	multiple glazed units production	manufacturing (23)	Manufacturing
231	Kolchugino	urban settlement	Vladimir Oblast	44 918	1871	1931	foundation of the wireworks in 1871; construction of the railway in 1896	CJSC "Kolchugcvetmet" (belongs to UGMK) - mass reduction of the employees in 2009	non-ferrous metal industry (metallurgical production)	manufacturing (25)	Manufacturing
232	Vyazniki	urban settlement	Vladimir Oblast	43 957	1608	1608	was a trade and religious center; uyezd town in 1778; became a textile industrial center in the 19th century (recently has lost its dominance)	LLC "Oswar" - in the risk (to be closed down) in 2009	electrical manufacturing industry (lighting production)	manufacturing (27)	Manufacturing
233	Sokol	urban settlement	Vologda Oblast	37 723	1615	1932	foundation of the pulp-paper factory in 1897	OJSC "Sokolskiy DOK" - reduction of the employees in 2012, OJSC "Sokolskiy CBK" - reduction of the employees in 2012, LLC "Sukhonskiy CBK"	timber industry, pulp-paper industry	manufacturing (16, 17)	Manufacturing
234	Pavlovsk	urban settlement	Voronezh Oblast	25 148	1709	1709	founded as a fort; uyezd town in 1779; development of the granite deposit; foundation of the processing plant in 1976	OJSC "Pavlovskgranit" - closed down and reorganized in 2014	granite mining	mining and quarrying (08)	Mining

235	Rossosh	urban settlement	Voronezh Oblast	62 538	the end of the 17th century	1923	location on the riverside; foundation of the chemical plant in 1974	OJSC "Minudobreniya"	chemical industry	manufacturing (20)	Manufacturing
236	Teploozersk	urban settlement*	Jewish Autonomous Oblast	5 138	1949	1958**	foundation of the cement plant in 1949	OJSC "Teploozerskiy Cementniy Zavod" - production decline in 2009	cement industry	manufacturing (23)	Manufacturing
237	Vichuga	urban district	Ivanovo Oblast	36 100	1925	1925	founded as the joint of industrial localities; foundation of the foundry in 1877	LLC "Machinostroitelny Zavod" - mass reduction of the employees in 2014	machine industry (lifting equipment)	manufacturing (28)	Manufacturing
238	Privolzhsk	urban settlement	Ivanovo Oblast	16 358	1485	1938	became a textile industrial center in the 18-19th century	LLC "Yakovlevsky Manufacture"	textile industry	manufacturing (13)	Manufacturing
239	Zheleznogorsk-Ilimskiy	urban settlement	Irkutsk Oblast	24 505	1957	1965	discovery (in 1948) and development of the iron ore deposit; foundation of the ironworks in 1965	OJSC "Korshunovskiy GOK" (belongs to OJSC "Mechel") - JSC "Mechel" in the high risk (to bankrupt)	ferrous metal industry (mining)	mining and quarrying (07)	Mining
240	Ust-Ilimsk	urban district	Irkutsk Oblast	83 635	1966	1973	construction of Ust-Ilimskaya hydro-electric power plant in 1966	Branch of OJSC "Ilim Group" - production decline in 2009	pulp-paper industry	manufacturing (17)	Manufacturing
241	Novokuznetsk	urban district	Kemerovo Oblast	550 213	1618	1931	foundation of the metallurgical plants in 1929-31 and 1942	OJSC "Kuznetskie Ferrosplavy" - production decline in 2008, OJSC "EVRAZ ZSMK" - production decline in 2013 difficult ecological situation	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing

242	Kaltan	urban district	Kemerovo Oblast	31 403	1946	1959	construction of the thermal power plant; development of the coal deposit	OJSC "Yuzhkuzbassugol" branch "Shakhta Alardinskaya" (belongs to Evraz Group)	coal mining	mining and quarrying (05)	Mining
243	Belogorsk	urban settlement*	Kemerovo Oblast	2 898	-	1962**	development of the nepheline ore deposit	Kiya-Shaltyrskiy Nephelinoviy Rudnik OJSC "RUSAL "Achinskij Glinozemniy Kombinat" - production decline in 2014	nepheline mining	mining and quarrying (08)	Mining
244	Urzhum	urban district	Kirov Oblast	10 080	1584	1584	founded as a fort; uyezd town in 1780; foundation of the distillery in 1833	OJSC "Urzhum Distillery"	food-manufacturing industry (spirits production)	manufacturing (11)	Manufacturing
245	Kirovo-Chepetsk	urban district	Kirov Oblast	75 963	15th century	1955	foundation of the match-producing factory in 1873; construction of the thermal station in the 1930s; foundataion of the chemical plant in the 1930s	LLC "Halopolymer Kirovo-Chepetsk" - bankruptcy petition was filed in 2012, OJSC "Plant fertilizer Kirovo-Chepetsk Chemical Plant"	chemical industry	manufacturing (20)	Manufacturing
246	Strizhi	urban settlement*	Kirov Oblast	3 528	1937	1943**	discovery and development of the sand deposit; foundation of the brick factory in 1936	LLC "Silworld-Strizhi"	construction materials industry (bricks production)	manufacturing (23)	Manufacturing

247	Galich	urban district	Kostroma Oblast	16 934	1238	1238	founded as a fort; uyezd town in 1178; construction of the railway in the beginning of the 20th century; foundation of the cranmobile-producing plant in 1945	OJSC "Galich Mobile Crane Plant"	machine industry (cranmobile production)	manufacturing (28)	Manufacturing
248	Vargashinskiy possovet	urban settlement*	Kurgan Oblast	9 196	beginning of the 18th century	1924**	founded as a fort; construction of the railway station in 1893-94; foundation of the fire-protecting machine and equipment manufacturing plant in 1941	OJSC "Vargashinskiy Zavod PPSO"	machine industry (fire-protecting machine and equipment production)	manufacturing (28)	Manufacturing
249	Syasstroy	urban settlement	Leningrad Oblast	14 292	1926	1992	foundation of the pulp-paper plant in 1928	OJSC "Syassky Pulp and Paper Mill"	pulp-paper industry	manufacturing (17)	Manufacturing
250	Lebedyan	urban settlement	Lipetsk Oblast	20 241	1605	1613	founded as a fort; uyezd town in 1779; foundation of the canning plant in 1967	LLC "Lebedyanskiy" (belongs to PepsiCo)	food-manufacturing industry	manufacturing (10)	Manufacturing
251	Balakhna	urban settlement	Nizhny Novgorod Oblast	50 107	1474	1474	development of the salt deposit; founded as a fort; uyezd town in 1779; construction of the thermal power plant in 1925; foundation of the pulp-paper plant in 1925	OJSC "Volga" - planned mass reduction of the employees in 2015	pulp-paper industry	manufacturing (17)	Manufacturing

252	Kulebaki	urban settlement	Nizhny Novgorod Oblast	34 142	1719	1932	foundation of the metallurgical plant in 1866	OJSC "Ruspolymet"	ferrous metal industry (metallurgical production)	manufacturing (25)	Manufacturing
253	Knyaginino	urban settlement	Nizhny Novgorod Oblast	7 214	1569	1998	uyezd town in 1779	OJSC "Knyagininskoe Moloko"	food-manufacturing industry	manufacturing (10)	Manufacturing
254	Pavlovo	urban settlement	Nizhny Novgorod Oblast	59 029	1566	1919	founded as a fort; uyezd town in 1919; foundation of the machine-building plant in 1932	OJSC "Pavlovskiy Avtobus", CJSC "Pavlovskiy Avtobusniy Zavod" - mass reduction of the employees in 2014 (both belongs to GAZ Group)	machine industry (buses production)	manufacturing (29)	Manufacturing
255	Volodarsk	urban settlement	Nizhny Novgorod Oblast	10 074	1862	1956	construction of the railway in 1862	OSJC "Agrofirma "Pitsefabrika Seymovskaya"	agriculture (production of eggs)	agriculture, forestry and fishing (01)	Agriculture
256	Pervomaysk	urban district	Nizhny Novgorod Oblast	19 370	middle of the 19th century	1951	foundation of the ironworks in 1853 (later was changed to brake-producing plant)	OSJC "Transpnevmatika"	machine industry (brakes production)	manufacturing (28)	Manufacturing
257	Vorsma	urban settlement	Nizhny Novgorod Oblast	10 989	1588	1955	became the metallurgical center in the 18th century; foundation of the instrument-engineering plant in 1820	OSJC "Medikoinstrumentalni y Zavod imeni V.I. Lenina" - monitoring procedure was introduced	medical and dental instruments and supplies	manufacturing (32)	Manufacturing
258	Mukhtolovo	urban settlement*	Nizhny Novgorod Oblast	4 957	16th century	1946**	foundation of the apparel factory in 1974	LLC "Mukhtulovskaya Specodezhda"	textile industry (clothing production)	manufacturing (14)	Manufacturing

259	Reshetikha	urban settlement*	Nizhny Novgorod Oblast	6 889	1810	1927**	foundation of the net-making factory in 1908	OJSC "Setka" - production decline in 2008	fishing gear (nets) production	manufacturing (13)	Manufacturing
260	Viksa	urban district	Nizhny Novgorod Oblast	83 881	1767	1934	foundation of the ironworks in 1767	OJSC "Vyksa Steel Works" - mass reduction of the employees in 2014	ferrous metal industry (pipes and railway wheel production)	manufacturing (24, 30)	Manufacturing
261	Navashino	urban settlement	Nizhny Novgorod Oblast	15 521	1957	1957	foundation of the ship-building plant in 1907; founded as the joint of the factory settlements	OJSC "Okskaya Sudoverf (Shipyard Oka)" - expected production decline in 2015	ship-building industry	manufacturing (30)	Manufacturing
262	Uglovka	urban settlement*	Novgorod Oblast	2 717	1495	1938**	development of the limestone deposit in the 18th century	OJSC "Uglovskiy Izvestnyakoviy Kombinat" - production decline in 2008	limestone processing	manufacturing (23)	Manufacturing
263	Borovichi	urban settlement	Novgorod Oblast	52 687	15th century	1770	uyezd town in 1776	OJSC "Borovichi Refractories Plant"	non-metallic mineral production (refractory manufacturing)	manufacturing (23)	Manufacturing
264	Krasny Yar	urban settlement	Omsk Oblast	5 240	1749	1957**	founded as a fort in the 18th century; foundation of the dairy factory in 1939	CJSC "Lyubinskiy Molochno-Konservniy Kombinat"	food-manufacturing	manufacturing (10)	Manufacturing
265	Mednogorsk	urban district	Orenburg Oblast	28 141	1933	1939	foundation of the copper-sulphur plant in 1933-39	LLC "Mednogorskiy Medno-Serniy Kombinat" (belongs to UGMK)	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
266	Gay	urban district	Orenburg Oblast	37 123	1959	1979	foundation of the mining and processing plant in 1958-59	OJSC "Gaiskiy GOK" (belongs to UGMK)	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining

267	Nikolsk	urban settlement	Penza Oblast	22 103	1761	1954	founded as the joint of the factory settlements; foundation of the crystalware-producing plant in 1764 (closed down)	CJSC "Nikolsk Lighting Glass Factory"	glass industry	manufacturing (23)	Manufacturing
268	Lipovtsi	urban settlement*	Primorsky Krai	7 045	1906	1950**	discovery (in 1906) and development of the coal deposit	OJSC "Lipovetskoe Shakhtoupravlenie"	coal mining	mining and quarrying (05)	Mining
269	Neftekamsk	urban district	The Republic of Bashkortostan	135 885	1957	1963	discovery of the oil deposit in 1956; foundation of the machine-building plant in 1970-72	OJSC "Neftekamskiy Avtozavod" (belongs to OJSC "KAMAZ") - <b>mass reduction of the employees in 2014</b>	machine industry (buses and tracks production)	manufacturing (29)	Manufacturing
270	Blagoveshchensk	urban settlement	The Republic of Bashkortostan	34 883	1756	1941	foundation of the copper-smelting plant in 1756	OJSC "Polief" (belongs to PJSC "SIBUR Holding")	chemical industry	manufacturing (20)	Manufacturing
271	Uchaly	urban settlement	The Republic of Bashkortostan	37 681	1955	1963	discovery of the copper-zinc deposit in 1939; foundation of the mining and processing plant in 1955-61	OJSC "Uchalinskiy GOK" (belongs to UGMK)	non-ferrous metal industry (mining)	mining and quarrying (07)	Mining
272	Beloretsk	urban settlement	The Republic of Bashkortostan	66 939	1762	1923	foundation of the ironworks in 1762	OJSC "Beloretsk Metallurgical Plant" (belongs to OJSC "Mechel") - <b>OJSC "Mechel" in the high risk (to bankrupt)</b>	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
273	Sagan-Nur	rural settlement	The Republic of Buryatia	4 035	1985	-	-	OJSC "Razrez Tugnuyskiy" (belongs to OJSC "SUEK")	coal mining	mining and quarrying (05)	Mining
274	Severobaykalsk	urban district	The Republic of Buryatia	24 209	1974	1980	construction of Baykal-Amur Mainline (railway)	Branches and structural subdivisions of OJSC "RZD"	transport services	transportation and storage (49)	Transportation

275	Vorkuta	urban district	The Komi Republic	84 707	1936	1943	discovery and development of the coal deposit in the 1930s	OJSC "Vorkutaugol" (belongs to PJSC "Severstal") - <b>mass reduction of the employees in 2009</b>	coal mining	mining and quarrying (05)	Mining
276	Zheshart	urban settlement*	The Komi Republic	7 872	1586	1961**	foundation of the plywood plant in 1946 (former town-forming enterprise)	CJSC "Zheshartskiy Fanerniy Kombinat" - <b>former dominant plant, declared bankrupt in 2013, closed down</b> , LLC "Promyshlenniy Kombinat Drevesnikh Plit" (founded in 2012)	timber industry (plywood production)	manufacturing (16)	Manufacturing
277	Inta	urban district	The Komi Republic	31 344	1940	1954	development of the coal deposit in the 1940s	OJSC "Shakhta "Intaugol" - <b>mass reduction of the employees in 2013</b>	coal mining	mining and quarrying (05)	Mining
278	Turgenevo	urban settlement*	The Republic of Mordovia	4 985	beginning of the 19th century	1960**	foundation of the grist-mill in 1889 (was changed to the lightning-engineering plant in 1949)	OJSC "Ardatovskiy Svetotechnicheskiy Zavod"	electrical manufacturing industry (lighting production)	manufacturing (27)	Manufacturing
279	Komsomolskiy	urban settlement*	The Republic of Mordovia	13 093	1952	1955**	foundation of the cement plant in 1948	OJSC "Mordovcement"	cement industry	manufacturing (23)	Manufacturing
280	Mirny	urban settlement	The Sakha Republic (Yakutia)	34 652	1955	1959	development of the diamond deposit in 1955	OJSC "AK "ALROSA"	diamond mining	mining and quarrying (08)	Mining
281	Aykhal	urban settlement*	The Sakha Republic (Yakutia)	13 459	1961	1962**	discovery of the diamond deposit	Aykhal Mining and Processing Division (belongs to OJSC "ALROSA") - <b>planned mass reduction of the employees in 2015</b>	diamond mining	mining and quarrying (08)	Mining
282	Mendeleevsk	urban settlement	The Republic of Tatarstan	22 131	1868	1967	foundation of the chemical plant in 1868	OJSC "Karpov Chemical Plant", LLC "Mendeleevskazot"	chemical industry	manufacturing (20)	Manufacturing



283	Nizhnekamsk	urban settlement	The Republic of Tatarstan	235 706	1961	1966	foundation of the fuel and chemical refinery plant in the 1960s	OJSC "NizhnekamskNeftekhim", LLC MC "Tatneft-Neftekhim"	chemical industry	manufacturing (20)	Manufacturing
284	Naberezhnye Chelny	urban district	The Republic of Tatarstan	522 048	1626	1930	foundation of the hydro-electric power plant in 1963 and machine-building plants in the 1960s	Group of companies of OJSC "KAMAZ" - <b>planned mass reduction of the employees in 2012 and 2015</b>	machine industry (trucks and power machines production)	manufacturing (29)	Manufacturing
285	Sorsk	urban district	The Republic of Khakassia	11 496	1939	1966	discovery of the molybdenum deposit in 1937	LLC "Sorskiy GOK" - <b>mass reduction of the employees in 2001</b> , LLC "Sorskiy Ferromolybdenoviy Zavod" (both belong to CJSC "MC "Souzmetallresource")	non-ferrous metal industry (mining and metallurgical production)	mining and quarrying (07), manufacturing (24)	Monotowns with two activities
286	Vershina Tei	urban settlement*	The Republic of Khakassia	3 583	1957	1959**	discovery (in the 1930s) and development of the iron ore deposit	Tyoyskiy Rudnik (belongs to LLC "Ruda Khakassii")	ferrous metal industry (mining)	mining and quarrying (07)	Mining
287	Donetsk	urban district	Rostov Oblast	49 170	1681	1951	development of the coal deposit in 1938; development of the textile and machine industries	OJSC "Donetskaya Manufaktura M"	textile industry	manufacturing (13)	Manufacturing
288	Elatma	urban settlement*	Ryazan Oblast	3 393	1381	1958**	uyezd town in 1779; foundation of the instrument-engineering plant in 1980	OJSC "Yelatma Instrument Making Enterprise"	medical and dental instruments and supplies	manufacturing (32)	Manufacturing
289	Chapaevsk	urban district	Samara Oblast	72 410	1909	1927	foundation of the powder-mill in 1909-11 (nowadays produces industrial	OJSC "Promsintez"	chemical industry	manufacturing (20)	Manufacturing

							explosives)				
290	Tolyatti	urban district	Samara Oblast	718 127	1737	1946	founded as a fort; uyezd town in 1780; construction of the hydro-electric power plant in 1950-57; foundation of the machine-building plants in 1957	OJSC "AVTOVAZ" - mass reductions of the employees in 2014 and 2015	machine industry (automobiles production)	manufacturing (29)	Manufacturing
291	Volsk	urban settlement	Saratov Oblast	91 056	1690	1780	uyezd town in 1780; foundation of the cement plants in the end of the 19th century	OJSC "Volskcement"	cement industry	manufacturing (23)	Manufacturing
292	Polevskoy	urban district	Sverdlovsk Oblast	70 704	1708	1942	discovery (in 1702) and development of the copper deposit; foundation of the copper-smelting plant and the ironworks in 1727-28	OJSC "Severskiy Trubniy Zavod"	ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
293	Asbest	urban district	Sverdlovsk Oblast	69 192	1889	1933	discovery (in 1885) and development of the chrysotile-asbestos deposit	OJSC "Uralasbest" - planned mass reduction of the employees in 2015 difficult ecological situation	chrysotile asbestos mining	mining and quarrying (08)	Mining

294	Nizhniy Tagil	urban district	Sverdlovsk Oblast	360 673	1722	1919	development of the magnetite deposit started in 1721; foundation of the ironworks in 1725; foundation of the machine-building plant in 1936	OJSC "Visokogorskiy GOK" (belongs to Holding Company "Ural")- <b>planned mass reduction of the employees in 2014</b> , OJSC "EVRAZ Nizhny Tagil Metallurgical Plant"- <b>mass reduction of the employees in 2014</b> , OJSC "Research and Production Corporation "Uralvagonzavod" - <b>mass reduction of the employees in 2014</b>	ferrous metal industry (mining and processing), machine industry (wagons and railway machines)	mining and quarrying (07), manufacturing (24, 30)	Monotowns with two activities
295	Revda	urban district	Sverdlovsk Oblast	63 594	1734	1935	foundation of the ironworks in 1731	OJSC "Sredneural'skiy Medeplavitel'nyy Zavod" and "UMMC-Non-Ferrous Metals" (both belong to UGMK), OJSC "Nizhneserginskiy Metizno-Metallurgicheskiy Zavod" (belongs to NLMK Group), OJSC "Revdinskiy Kirpichnyy Zavod"	non-ferrous and ferrous metal industries (metallurgical production), construction materials production	manufacturing (division 23, 24)	Manufacturing
296	Verkhnyaya Pishma	urban district	Sverdlovsk Oblast	77 964	1830s	1946	development of the copper deposit in 1854-56	OJSC "Uralelectromed" (belongs to UGMK) - <b>mass reduction of the employees after 2008</b>	non-ferrous metal industry (metallurgical production)	manufacturing (24)	Manufacturing
297	Malysheva	urban district*	Sverdlovsk Oblast	10 868	1834	1967**	discovery and development of the emerald deposit since the 1830s	OJSC "Malyshevskoe Rudoupravlenie"	minerals mining	mining and quarrying (08)	Mining

298	Nevinnomyssk	urban district	Stavropol'skiy krai	117 638	1825	1939	founded as the defense settlement; construction of the railway in 1872-75; foundation of the chemical plant in 1952	OJSC "Nevinnomysskiy Azot" (belongs to EuroChem Group), OJSC "Arnest"	chemical industry	manufacturing (20)	Manufacturing
299	Znamenka	urban settlement*	Tambov Oblast	6 205	1700	1971**	foundation of the sugar-making factory	OJSC "Znamenskiy Sakharniy Zavod" - <b>bankruptcy petition was filed in 2014, bankruptcy process was dismissed</b>	food-manufacturing industry	manufacturing (10)	Manufacturing
300	Kotovsk	urban district	Tambov Oblast	31 220	1912	1940	foundation of the powder-mill in 1915	FFE "Tambov Gunpowder Plant"	chemical industry (propellant powder manufacturing)	manufacturing (20)	Manufacturing
301	Plekhanovo	rural settlement	Tula Oblast	9 165	-	-	-	CJSC "Tulaelectroprivod"	machine industry (valves actuators production)	manufacturing (28)	Manufacturing
302	Pervomayskiy	urban settlement*	Tula Oblast	9 597	1946	1950**	foundation of the chemical plant	OJSC "Shchekinazot"	chemical industry	manufacturing (20)	Manufacturing
303	Glazov	urban district	The Udmurt Republic	94 909	1678	1780	uyezd town in 1780; became a penitentiary place	OJSC "Chepetskiy Mechanical Plant" (belongs to Rosatom Group)	production of uranium and zirconium metals	manufacturing (24)	Manufacturing
304	Novoulyanovsk	urban district	Ulyanovsk Oblast	19 292	1960	1967	foundation of the cement plant	OJSC "Ulyanovskcement" (belongs to Eurocement Group) - <b>mass reduction of the employees in 2009</b> , LLC "Ulyanovskshifer", OJSC "Novoulyanovskiy Zavod ZhBI",	cement industry, construction materials production	manufacturing (23)	Manufacturing

								LLC "Tekhkrom"			
305	Inza	urban settlement	Ulyanovsk Oblast	18 416	1897	1946	construction of the railway station; foundation of the saw-mill in 1905	LLL "Inzensky Woodworking Plant", "Les", OSUE "Inzenskiy Leskhoz", LLC "Diatomit-Invest"	timber industry, construction materials production	manufacturing (16, 23)	Manufacturing
306	Silikatnyy	urban settlement*	Ulyanovsk Oblast	3 304	1951	1975**	foundation of the brick-yard	CJSC "Silikatchik", OJSC "Quartz"	construction materials production	manufacturing (23)	Manufacturing
307	Magnitogorsk	urban district	Chelyabinsk Oblast	414 897	1743	1931	discovery of the iron ore deposit in the 1740s; founded as a fort; foundation of the metallurgical plant in 1929-31	OJSC "Magnitogorskiy Metallurgicheskiy Kombinat (MMK)" - <b>planned mass reduction of the employees after 2008</b> , OJSC "MMK-Metiz" <b>difficult ecological situation</b>	ferrous metal industry (processing)	manufacturing (24)	Manufacturing
308	Trekhgornyy	urban district	Chelyabinsk Oblast	32 789	1952	1955	foundation of the instrument-engineering plant for the production of atomic bombs	FSUE "Priboro-Stroitelnyy Zavod" (belongs to Rosatom Group)	naukograd of the nuclear complex (CATU): instrument-manufacturing industry	manufacturing (26)	Manufacturing

309	Snezhinsk	urban district	Chelyabinsk Oblast	49 833	1955	1993	foundation of the institute for experimental physics scientific research	FSUE "Russian Federal Nuclear Center - Zababakhin All-Russian Scientific Research Institute of Technical Physics" (belongs to Rosatom Group)	naukograd of the nuclear complex (CATU): nuclear research center	professional, scientific and technical activities (72)	Scientific
310	Novocheboksarsk	urban district	The Chuvash Republic	124 288	1960	1965	construction of the hydro-electric power plant ; foundation of the chemical plant in 1960	OJSC "Perkarbonat", PJSC "Khimprom"	chemical industry	manufacturing (2)	Manufacturing
311	Pevek	urban settlement	Chukotka Autonomous Okrug	4 913	1933	1967	founded due to the exploration of the Northern seaway; became a penitentiary town in the 1950s; development of the gold deposit in the 1970s	Mayskoye Mestorozhdenie (belongs to OJSC "Polymetal")	gold mining	mining and quarrying (07)	Mining

### Notes:

\* Settlements are formed around urban-type localities.

\*\* Year when a settlement was declared an urban-type locality.

\*\*\* Text in red represents the information on recent major difficulties which were experienced by monotowns' dominant enterprises. Information sources: news posted on the webpages of Russian quality press and federal news agencies as "Kommersant.Ru", "Vesti.Ru", "RBC.Ru", "RIA.Ru", "FedPress.Ru", etc.

\*\*\*\* Industrial sectors (with the indices for the industrial divisions) are shown in this column.

*Text in red* presents the difficulties, which were faced by the town-forming enterprises of monotowns.

### Sources:

<sup>1</sup> Government Executive Order from 29.07.2014 № 1398-r, Available Online: <http://government.ru/media/files/41d4f68fb74d798eae71.pdf> [Accessed 07.04.2015]

<sup>2</sup> Federal State Statistic Service (2014). Population Figures of Russian Municipalities to the 1st of January 2014. Available Online:

[http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/publications/catalog/afc8ea004d56a39ab251f2bafc3a6fce](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/afc8ea004d56a39ab251f2bafc3a6fce) [Accessed 30.03.2015].

<sup>3</sup> E-source "Public encyclopedia of Russian towns and regions "My Town" (translated from "Народная энциклопедия городов и регионов России "Мой Город"), Available Online: <http://www.mojgorod.ru/cities/listcity.html> [Accessed 11.05.2015]. Note: for missing rural and urban-type settlements the data was collected from the information posted on official webpages of the administrative units.

<sup>4</sup> The Ministry of the Regional Development Order from 26.07.2013 № 312 "About the Approval of the Decision of the Inter-Agency Working Group on the Development of the Territories with the Special Status" (translated from "Об одобрении решения межведомственной рабочей группы по развитию территории с особым статусом"), Available Online:

[http://economics.vologanet.ru/news/monotown/files/Pereen\\_monogorodov\\_po\\_sostoyaniyu\\_na\\_26.07.2013.docx](http://economics.vologanet.ru/news/monotown/files/Pereen_monogorodov_po_sostoyaniyu_na_26.07.2013.docx) [Accessed 07.04.2015]. Note: for monotowns missing in the list of 2013 the data about town-forming enterprises was collected from the information posted on the webpages of Russian quality press and federal news agencies as "[Kommersant.Ru](#)", "[Vesti.Ru](#)", "[RBC.Ru](#)", "[RIA.Ru](#)", etc.

<sup>5</sup>International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4, Available Online: [http://unstats.un.org/unsd/publication/seriesM/seriesm\\_4rev4e.pdf](http://unstats.un.org/unsd/publication/seriesM/seriesm_4rev4e.pdf) [Accessed 11.05.2015].

Table A-2. Considering Monotowns of Different Functional Classes

No.	Functional class	Number of monotowns		Population		Category						Town Population Size		
		Class	Share, %	Class	Share, %	1		2		3		Minimum	Geometric Mean	Maximum
						Number	Share, %	Number	Share, %	Number	Share, %			
1	Manufacturing	226	73	10 045 986	74	57	77	104	71	65	73	2 335	21 629	718 127
2	Mining	63	20	2 132 557	16	13	18	33	22	17	19	1 003	19 161	202 672
3	Monotowns with two activities	10	3	875 274	6	2	3	6	4	2	2	9 790	45 806	360 673
4	Transportation	4	1	141 681	1	1	1	1	1	2	2	24 209	33 496	56 246
5	Power generation	3	1	51 524	0	1	1	2	1	-	0	6 864	15 010	24 774
6	Scientific	2	1	168 346	1		0	1	1	1	1	49 833	76 850	118 513
7	Construction	1	0	68 041	1		0	-	0	1	1	68 041	68 041	68 041
8	Agriculture	1	0	10 074	0		0	-	0	1	1	10 074	10 074	10 074
<b>All monotowns:</b>		<b>310</b>	<b>100</b>	<b>13 493 483</b>	<b>100</b>	<b>74</b>	<b>100</b>	<b>147</b>	<b>100</b>	<b>89</b>	<b>100</b>	<b>1 003</b>	<b>21 561</b>	<b>718 127</b>



Table A-3. Divisions in the Manufacturing Functional Class

Division Index	Industrial Division	Number of Towns		Population		Category						Population size		
		Division	Share, %	Division	Share, %	1		2		3		Minimum	Geometric Mean	Maximum
						Number	Share, %	Number	Share, %	Number	Share, %			
10	Food products	12	5	144 414	1	-	0	8	8	4	6	3 712	9 692	28 493
11	Beverages	3	1	54 213	1	1	2	1	1	1	2	4 283	11 982	39 850
12	Tobacco products	1	0	9 210	0	-	0	1	1	-	0	9 210	9 210	9 210
13	Textiles	9	4	175 882	2	1	2	5	5	3	5	3 552	13 631	49 170
14	Wearing apparel	2	1	17 688	0	1	2	-	0	1	2	4 957	7 944	12 731
16	Wood and of products of cork,except furniture; manufacture of articles of straw and plaiting materials	22	10	282 347	3	9	16	12	12	1	2	2 698	8 954	65 229
17	Pulp and paper products	14	6	362 621	4	6	11	5	5	3	5	7 471	19 694	83 635
19	Coke and refined petroleum products	1	0	47 579	0	-	0	1	1	-	0	47 579	47 579	47 579
20	Chemicals and chemical products	21	9	1 199 142	12	3	5	7	7	11	17	6 497	37 945	235 706
23	Other non-metallic mineral products	27	12	559 371	6	4	7	13	13	10	15	2 335	11 857	91 056

24	Basic metals	35	15	2 930 314	29	14	25	14	13	7	11	3 025	40 280	550 213
25	Fabricated metal products, except machinery and equipment	11	5	334 390	3	3	5	5	5	3	5	3 013	19 753	91 276
26	Computers, electronic and optical products	5	2	169 537	2	-	0	4	4	1	2	11 583	29 592	64 095
27	Electrical equipment	6	3	124 702	1	-	0	4	4	2	3	4 542	14 552	43 957
28	Machinery and equipment n.e.c.	15	7	363 097	4	6	11	3	3	6	9	9 165	18 431	81 446
29	Motor vehicles, trailers and semi-trailers	10	4	1 684 313	17	1	2	5	5	4	6	13 743	76 789	718 127
30	Other transport equipment	15	7	843 669	8	4	7	9	9	2	3	7 355	38 011	188 420
31	Furniture	1	0	3 782	0	-	0	1	1	-	0	3 782	3 782	3 782
32	Other manufacturing	4	2	19 723	0	1	2	1	1	2	3	2 505	4 034	10 989
-	More than one division	12	5	719 992	7	3	5	5	5	4	6	4 031	42 582	166 564
<b>All manufacturing monotowns:</b>		<b>226</b>	<b>100</b>	<b>10 045 986</b>	<b>100</b>	<b>57</b>	<b>100</b>	<b>104</b>	<b>100</b>	<b>65</b>	<b>100</b>	<b>2 335</b>	<b>21 629</b>	<b>718 127</b>

Table A-4. Divisions in the Mining Functional Class

Division Index	Industrial Division	Number of Towns		Population		Category						Population size		
		Division	Share, %	Division	Share, %	1		2		3		Minimum	Geometric Mean	Maximum
						Number	Share, %	Number	Share, %	Number	Share, %			
5	Mining of coal and lignite	26	41	1 332 813	62	5	38	16	48	5	29	1 003	30 827	202 672
7	Mining of metal ores	25	40	544 413	26	8	62	11	33	6	35	1 622	13 226	120 577
8	Other mining and quarrying	12	19	255 331	12	-	0	6	18	6	35	2 898	14 805	69 192
<b>All mining monotowns:</b>		<b>63</b>	<b>100</b>	<b>2 132 557</b>	<b>100</b>	<b>13</b>	<b>100</b>	<b>33</b>	<b>100</b>	<b>17</b>	<b>100</b>	<b>1 003</b>	<b>19 161</b>	<b>202 672</b>