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## BANKRUPTCY DYNAMICS OF COMPANIES IN RUSSIA

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### ABSTRACT

Economic instability is embodied in the dynamics of company bankruptcies. This process is gaining theoretical and practical importance. The paper performs a structural analysis of Russian company bankruptcies for 2011-2019 by the types of ownership. The research results show that the relative number of bankruptcies among state-owned enterprises does not exceed the same indicator for private ones. However, there are dissimilarities within the group of state-owned enterprises: the share of municipal unitary enterprises declared bankrupt is significantly greater than that of federal state and regional unitary enterprises. This study finds that bankruptcies are becoming more frequent as the lifespan (age) of state-owned enterprises and their authorized capital are increasing. The same trend is predominantly typical of private companies revealing a significant proportion of insolvent enterprises with a small-authorized capital. The largest share of bankruptcies in the public commercial sector falls on companies aged 25-30, and the lifespan of private companies is 10-15 years. The findings conclude that the effect of the type of ownership on the dynamics of company bankruptcies in Russia is statistically insignificant. At the same time, there are notable disproportions at the threshold of the economic viability of state-owned companies over private ones.

**Disciplinary:** Enterprises Economics and Management.

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## 1. INTRODUCTION

Aggravating global uncertainty makes the problem of bankruptcies especially urgent. Crises, price shocks, and a general deterioration in market conditions in foreign markets resulted in a situation where less diversified export-oriented economies quickly lost their sustainability

(Garškaite-Milvydiene, 2012; Ali & Ur Rehman, 2018). In this context, the issue of company bankruptcies has become one of the most acute problems in Russia. According to the statistical bulletin of the Russian Unified Federal Register of Bankruptcy Information (EFRSB, 2019), there were 12,401 bankruptcies in the country in 2019, which is 5.5% less than in 2018, but almost twice the level of 2011. The rapid growth in the number of insolvent and liquidated enterprises in Russia stimulates the search for causes and factors contributing to such trends (Zakirova et al., 2018).

A wide array of studies on the problem of company bankruptcies indicates the magnitude of the problem and the need for finding solutions to it as early as possible. At the same time, not enough research is being undertaken on the statistical assessment and determination of the level of company bankruptcy by the type of ownership. This issue has been beyond the scope of the research interest. For a long time, state-owned enterprises managed to stay afloat and kept functioning despite their negative performance indicators. Subsequently, public funding cutbacks caused some state enterprises to go bust. The nature of these bankruptcies leaves open the question of the ultimate sustainability threshold for companies partly or fully owned by the state. The current research is designed to clarify the threshold of the economic viability of state-owned companies over private ones and establish to which extent the type of ownership affects the bankruptcies dynamics. This fact determines the applied nature of the topic under discussion.

This study's purpose is to analyze the scale and dynamics of bankruptcies taking into account the types of ownership. We aim to accomplish the following objectives: To assess the share of bankruptcies among state-owned enterprises; to investigate how the lifespan of enterprises affects the frequency of bankruptcies, and to establish if there is a correlation between the number of bankruptcies and the size of authorized capital by the types of ownership.

## 2. LITERATURE REVIEW

Examining the problems associated with the dynamism and variability of the economic environment revealed a plethora of unresolved issues in the field of sustainable development of entrepreneurship in Russia (Smirnov, 2017; Litau, 2019; Ponomarev & Petrov, 2019). One of them is the task of preventing insolvency (bankruptcy).

Azizov and Dzhumaniyazova (2016) explore the changes in the number of bankruptcies in Russia in 2005-2015. They identify the positive dynamics of bankruptcies of legal entities, which takes place since 2007 and pinpoint the regions, where the growth of bankruptcies is above the national average. Karzaeva (2017) presents the analysis of insolvency dynamics for a shorter period of 2010-2016. The data obtained indicate that the number of bankruptcies in Russia has doubled over 7 years, and, given the decrease in the number of registered enterprises, this can result in an economic recession.

Many authors (Kovalev & Mnatsakanyan, 2016; Poleshchuk & Markova, 2016) perform a statistical analysis of bankruptcies by the industries and regions of the Russian Federation. The researchers conclude that more than half of all bankrupt enterprises operate in trade, construction, and real estate. As Marina (2018) puts it, among the industries that are most disposed to go bust are wholesale and retail trade, construction, commercial services, agriculture and forestry, transport and

communications, electric power industry, financial services, food production, mechanical engineering, and metallurgy. Other studies (Stroganova, 2016; Melay & Ustinkova, 2017; Kuzmin & Guseva, 2016; Kuzmin, 2018) support these conclusions.

As practice demonstrates, there are principal differences in the bankruptcy of state-owned and private companies. The advantages of companies with state participation over private ones can take the form of direct subsidies, concession financing, guarantees, preferential regulation, exemptions from antitrust laws or bankruptcy laws, etc. (Kowalski et al., 2013; OECD, 2004). In many scenarios, state-owned enterprises enjoy soft budget constraints and use direct or indirect state funding (Bai & Wang, 1998; MacCarthaigh, 2011; Liu, Tian & Wang, 2011). Specific features of state participation in the corporate segment may reduce management efficiency and impair the economic performance of companies (Batkovskiy et al., 2016; 2018). In this regard, it is relevant to study the scale and dynamics of the bankruptcies of state-owned enterprises in comparison with private ones.

The public sector remains an important part of the Russian economic system. According to various estimates, its share equals 60-70% (CDB, 2019). Enterprises and associations are termed state-owned when 50% or more of their capital is owned by the state, regional or local authorities (Kozlova, Bratchenko & Zvyagintsev, 2019).

There is research (Panfilova, 2013; Mogilat, 2015; Tantsarin, 2018) dedicated to the analysis of bankruptcies of state-owned and private companies in Russia. Based on a statistical examination of bankruptcies in 2010-2017, Tantsarin (2018) states that the share of unitary enterprises declared insolvent demonstrates an upward trend. Mogilat (2015) highlights that bankruptcies among private companies and those with foreign ownership are less intense if compared with the public sector.

Panfilova (2013) emphasizes that bankruptcies of state-owned enterprises exhibit the following peculiarities: the majority of state-owned enterprise bankruptcies are initiated by the creditor; in state-owned companies, accounts payable are many times greater than accounts receivable; in contrast to the private sector, in the bankruptcy proceedings of a state-owned enterprise, reorganization procedures prevail over liquidation ones.

According to Bazunova (2016), the disproportionality of the functions of the institution of bankruptcy is manifested in the uneven use of procedures and the dominance of liquidation procedures (bankruptcy proceedings) over recovery ones (financial rehabilitation and receivership). The main trend in bankruptcies in Russia was revealed: in most insolvency cases, where the debtor was a state-owned and municipal unitary enterprise, the procedure of bankruptcy proceedings was not initiated, while the cases were closed at the stage of supervision or going into receivership was considered, even if the chances for the debtor's solvency recovery were minimal. In bankruptcy cases of state-owned enterprises, accounts payable usually many times exceed both accounts receivable and the book value of the property. Such selectivity is largely explained by the fact that the state, as the owner of organizations in which public funds are invested, is interested in them to work efficiently and not be at risk of alienation of property in bankruptcy proceedings (Kovan, 2009).

The literature review indicates that no comprehensive research is being undertaken on identifying the factors and establishing the scale, major trends, and particularities of bankruptcies of

state-owned and private enterprises in Russia. The issues that have not been debated in detail are the following: the analysis of the share of bankruptcies among state-owned enterprises, the analysis of the effect of enterprises' age on the frequency of bankruptcies, and the analysis of how the size of companies' authorized capital affects the frequency of bankruptcies.

### 3. METHOD

The purpose and objectives of the present research imply conducting a multi-stage analysis which includes the following operations:

- a) analyzing statistical data on Russian company bankruptcies in 2011-2019;
- b) analyzing summary statistical data on the activities of arbitration courts in 2014-2019 on the insolvency (bankruptcy) of legal entities (companies);
- c) evaluating the distribution of company bankruptcies by the types of ownership.

Based on data from the SPARK-Interfax, we obtain a statistical sample of 1,432 bankrupt enterprises of all types of ownership. The data demonstrate that 37.6% of the enterprises were owned by regional authorities (subjects of the Russian Federation (RF)), 27.9% were under the joint ownership of the RF subjects and foreign partners, 27.7% were owned by federal authorities, 5.87% were private companies, and the share of companies with other types of ownership was under 1%.

Statistics of the arbitration practice in Russia on insolvency (bankruptcy) of companies for the period of 2014-2019 allows one to arrange bankruptcy applications received and bankruptcy decisions made (Table 1).

**Table 1:** Number of bankruptcy applications received and bankruptcy decisions made by arbitration courts in Russia according to the types of ownership (SCRF, 2019).

Type of ownership	Bankruptcy applications received/bankruptcy decisions made					
	2014	2015	2016	2017	2018	2019*
1. Private enterprises	41,905	44,697	42,833	42,676	40,964	46,950
	15,081	14,846	12,822	16,241	15,542	14,690
2. State-owned enterprises, including	702	605	530	652	575	426
	236	186	186	161	160	160
State unitary enterprises	186	108	132	198	134	76
	37	25	39	31	17	30
Municipal unitary enterprises	516	497	398	454	441	350
	199	161	147	130	143	130
Total	42,607	45,302	43,363	43,328	41,539	47,376
	15,317	15,032	13,008	16,402	15,702	14,850

Note: (\*) is a projection based on data for the 1<sup>st</sup> half of 2019.

The statistical data obtained allow us to test the following hypotheses for each research stage:

*H1:* due to the relatively low efficiency of state-owned enterprises, the share of bankruptcies among such companies will be higher than among private enterprises.

*H2:* the number of insolvencies decreases as the lifespan of enterprises grows. At that, the largest share of bankruptcies should occur among relatively "young" companies (with a lifespan under 10 years).

*H3:* the number of insolvencies decreases as the size of companies' authorized capital grows. At that, the largest share of bankruptcies should occur among companies with small authorized capital.

To test the hypotheses, the following methods are applied: statistical analysis of the dynamics and structure; structural-dynamic analysis, which consists in determining individual and generalizing indicators of structural changes (coefficients of absolute and relative structural shifts with a variable and constant comparative base (Sivelkin & Kuznetsova, 2002)).

The structural indicator is calculated from

$$d_i = \frac{x_i}{s} \times 100 \quad (1),$$

where  $d_i$  denotes the share of the  $i$ -th structural element;  $i = N, 1$ ;  $x_i$  denotes absolute value by the  $i$ -th element;  $s$  denotes a total of absolute values of the  $i$ -th structural elements.

The individual indicator of absolute structural shifts with a variable comparative base is determined by

$$\Delta = d_j - d_{j-1} \quad (2),$$

where  $d_j$  is the proportion of the group in the  $j$ -th period;  $d_{j-1}$  is the proportion of the group in the period  $j - 1$ .

The individual indicator of absolute structural shifts with a constant comparative base is calculated by

$$\Delta = d_j - d_0 \quad (3),$$

where  $d_0$  is the proportion of the group in the basis period.

The individual indicator of relative structural shifts with a variable comparative base is determined by

$$J_d = \frac{d_j}{d_{j-1}} \quad (4).$$

The individual indicator of relative structural shifts with a constant comparative base is calculated by

$$J_d = \frac{d_j}{d_0} \quad (5),$$

where  $d_j$  refers to the proportion of the group in the  $j$ -th period;  $d_0$  refers to the proportion of the group (element) in the basis period.

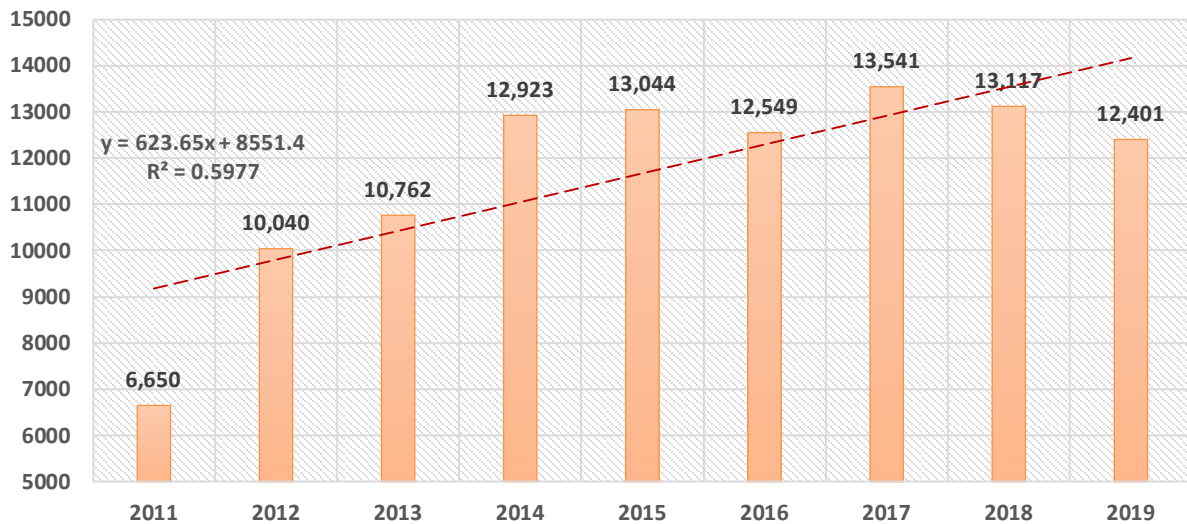
The linear coefficient of absolute structural shifts with a variable comparative base (chain-weighted) is calculated in percent using

$$L_z^{Ab} = \frac{\sum_{i=1}^n |d_j - d_{j-1}|}{n} \quad (6),$$

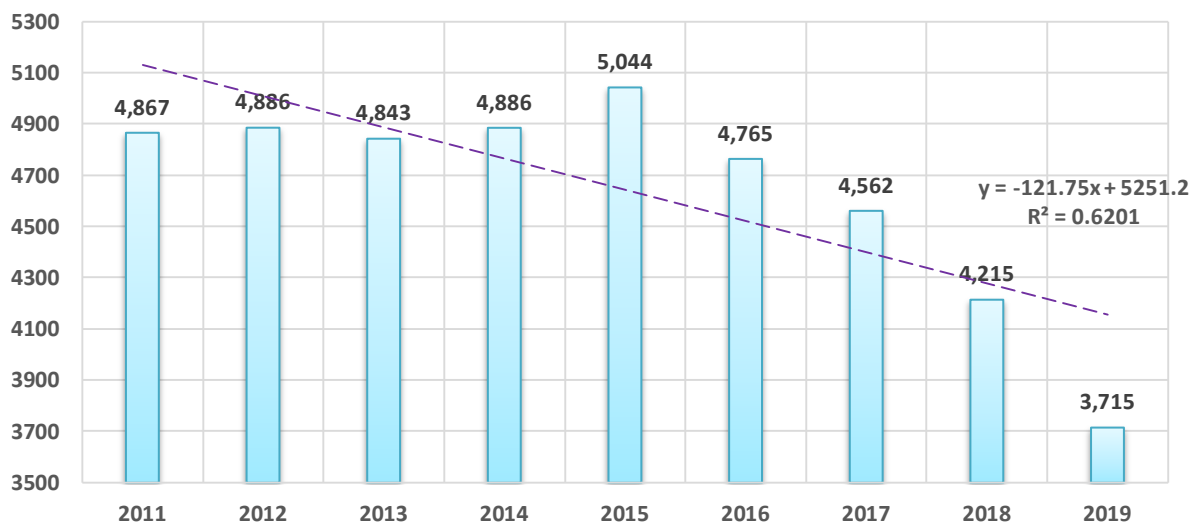
where  $L_z^{Ab}$  is the linear coefficient of absolute structural shifts (chain-weighted or with a variable comparative base);  $d$  is the proportions of attributes;  $n$  is the number of gradations in the structures;  $j$  is the periods compared.

## 4. RESULT AND DISCUSSION

In 2011-2019, the number of Russian company bankruptcies increased by 86.48% (Figure 1). The basis growth rates of bankruptcies exceeded the chain-weighted ones, which was attributed to the financial and economic instability in 2013-2014. The progressive increase in the number of insolvencies in 2011-2017 was due to the low efficiency of the institution of subsidiary liability. The reforms enacted improved the situation. As a result, controlling entities were more often held liable for the company debts, and the number of bankruptcies reduced.



**Figure 1:** Dynamics of Russian company bankruptcies in 2011-2019, (number of bankruptcies) (Source: EFRSB (2019)).



**Figure 2:** Dynamics of the number of legal entities in Russia in 2011-2019, thousands (Source: (Rosstat, 2016; 2018; 2019))

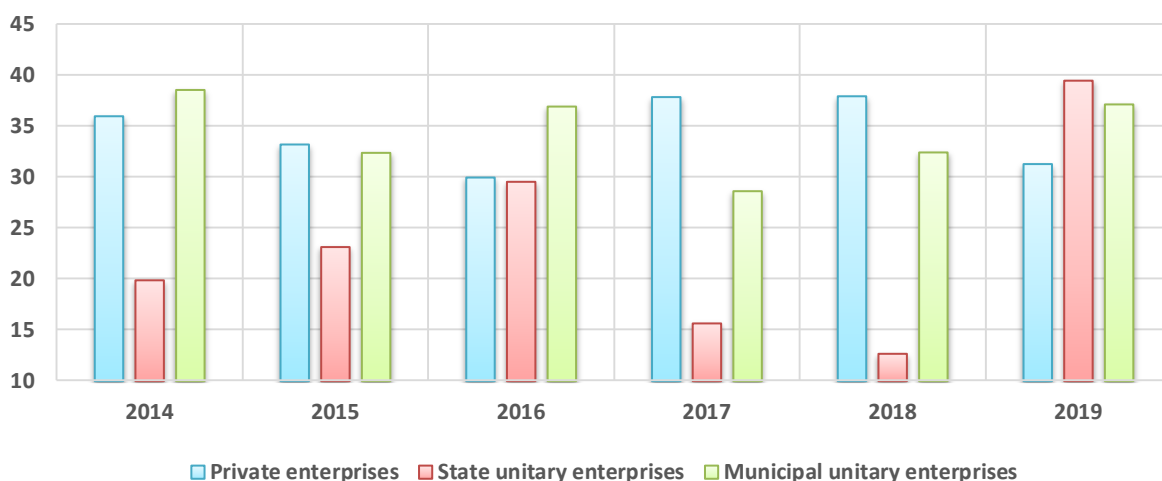
Figure 2 presents the dynamics of changes in the number of legal entities (companies and associations) in Russia in 2011-2019. There is a steady downward trend in the number of organizations amounting to 1,151.3 thousand entities, or 31%, during the same period. Lately, the

international audit and consulting network FinExpertiza has detected a tendency towards the number of liquidated companies to prevail over the number of newly established ones. In 2019, the number of dissolved companies exceeded the number of start-ups 2.3 times. As a whole in Russia in 2019, every fifth company closed (FinExpertiza, 2020).

When assessing the scale of bankruptcies, it can be noted that their share increased from 0.14% in 2011 to 0.33% in 2019, or 2.4 times (EFRSB, 2019; Rosstat, 2016; 2018; 2019). A growing number of insolvencies is an extremely adverse trend indicating an unfavorable business climate and declining entrepreneurial activity. Every second bankruptcy in Russia occurs in trade, construction, and real estate, which is caused by the high base effect: these industries are leaders in the number of companies operating in them. If one juxtaposes the number of bankruptcies and the number of enterprises working in the sector, then the cases of insolvency will be under 2% (Almakunova, 2019).

Table 1 presents an analysis of summary statistical data on activities of federal arbitration courts in Russia in 2014-2019. The data show that the number of private and state-owned companies filing for bankruptcy in 2014 equaled 41,905 and 702, respectively. Of these, 15,081 (35.98%) and 236 (33.61%) cases were closed declaring the companies to be insolvent. In 2014, the share of bankruptcies among state unitary enterprises (SUEs) was 19.89%, and among municipal unitary enterprises (MUEs) - 38.56%. In 2019, the number of applications for declaring companies insolvent amounted to 47,376, and 14,850 (31.34%) of them were approved. At that, the share of private enterprises was equal to 31.29%, and the share of state-owned enterprises declared bankrupt - 37.56% (including SUEs (39.47%) and MUEs (37.14%)).

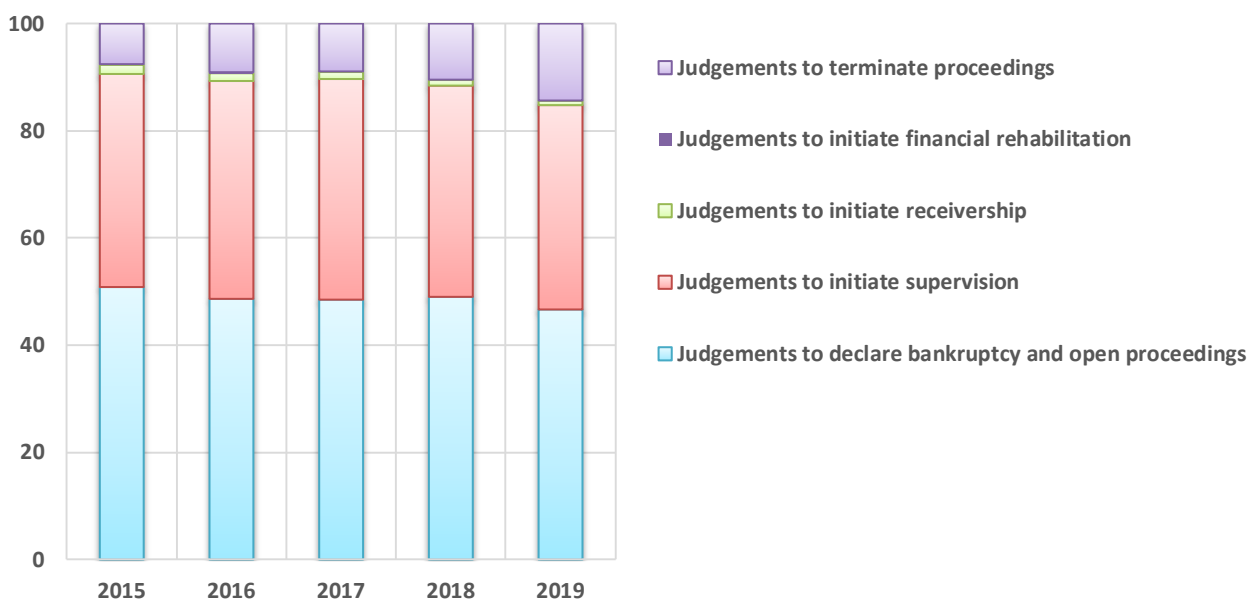
Figure 3 provides a summary of the data from Table 1. We can conclude that the share of bankruptcies among state-owned enterprises in 2016 and 2019 was higher than among private enterprises. The opposite situation was observed in the rest of the periods.



**Figure 3:** Percentage of arbitration court judgments with respect to state-owned and private enterprise bankruptcies, % (Source: SCRF (2019)).

Under Russia's laws, the following procedures can be used when considering a bankruptcy case (Federal Law No. 127-FZ): supervision; financial rehabilitation; receivership; bankruptcy

proceedings; and settlement. Almost half of all judgments made by courts were about declaring enterprise bankruptcy and starting bankruptcy proceedings. At that, in 2015 this indicator amounted to 50.84%, and by 2019 it decreased to 46.66%. The proportion of judgments to introduce supervision decreased to 38.13% by 2019 from 39.75% in 2015. The greatest change occurred in the number of judgments to terminate proceedings: the share of such judgments grew from 7.57% in 2015 to 14.36% in 2019 (Figure 4).



**Figure 4:** Structure of court judgments with respect to Russian companies' insolvency (%) (Source: EFRSB, (2019))

In 2019, the main claimants in bankruptcy cases were creditors in insolvency proceedings (78.1% of claims), debtors (companies) themselves (12.6%), and the Russian Federal Tax Service (8.7%). The share of employees' claims amounted to 0.6%.

To analyze the structure of bankruptcies by the type of ownership, we calculate the number of court-approved bankruptcies in relative terms. The share of approved bankruptcies of private enterprises was more than 98%, and for state-owned companies, this share was under 2%. Bankruptcy cases of other organizations took the largest share of approved insolvencies - 85.15% in 2014, and 82.41% in 2019. The share of SUEs bankruptcies was 0.24% in 2014, and it declined to 0.20% by the end of 2019. The share of MUEs bankruptcies accounted for 1.30% in 2014, and it dropped to 0.88% by the end of 2019.

Using the statistical data, we determine the linear coefficient of absolute structural shifts in the dynamics of bankruptcy judgments ( $L_{2015/2014}=0.105$ ;  $L_{2016/2015}=2.05$ ;  $L_{2017/2016}=2.05$ ;  $L_{2018/2017}=0.35$ ;  $L_{2019/2018}=0.53$ ). The largest amount of shifts in the structure of Russian enterprise bankruptcies was observed in 2015-2017. During 2018-2019, subtle structural shifts were noted. During the entire period under consideration, the coefficient of absolute structural shifts was 8.18. The major structural shifts were noticed in such types of enterprises as peasant farms, agricultural organizations, city-forming enterprises, and other organizations.

Table 2 shows the results of the distribution of bankruptcies by the types of ownership in 2019



based on the sample from the SPARK-Interfax information system.

**Table 2:** Distribution of bankruptcies of Russian companies by the types of ownership in 2019, Source: (EFRSB, 2019).

Type of ownership	Enterprise Status				Total
	In bankruptcy	Active	Under liquidation	Inactive	
Private ownership	23	1	42	18	84
Federal ownership	109	0	274	14	397
Joint ownership of Russia's subjects and foreign ownership	110	0	275	14	399
Ownership of Russia's subjects	94	0	416	29	539
Mixed Russian ownership with a share of federal ownership	0	0	0	6	6
Mixed Russian ownership with the share of federal ownership and ownership of Russia's subjects	0	0	0	6	6

Of the sample presented, 23 private enterprises were in bankruptcy, which was 27.38% of their total and 1.6% of the entire sample. As for enterprises owned by the federal government, 109 of them were in bankruptcy, which made up 27.45% of their total and 27.72% of the sample. 110 enterprises jointly owned by Russia's subjects and foreign countries were in bankruptcy, which amounted to 27.56% of all enterprises of this type of ownership or 27.86% of the total sample. 94 enterprises owned by Russia's subjects (constituent territories) were in bankruptcy, which equaled 17.39% of their total or 37.64% of the sample. As a whole, 313 state-owned enterprises of the sample presented were in the state of bankruptcy. The distribution of the frequency of companies' bankruptcies according to their lifespan (age) is given in Table 3.

The majority (45%) of state-owned enterprises at the stage of bankruptcy were at the age of 25-30 years; 18% were between 20-25 years, and 15% were between 10-15 years. Private enterprises going bust demonstrated the opposite trend. Most of them (35%) were between 10-15 years; 22% - 25-30 years; and 17% - 5-10 years.

**Table 3:** Distribution of the frequency of bankruptcies of state-owned and private enterprises in Russia according to their lifespan (age) in 2019 (Source: (EFRSB (2019); SPARK-Interfax (2019)).

Lifespan (age (years))	State-owned enterprises, %*	Private enterprises, %
Under 5	3.2	4.3
5 to 10	5.3	17.4
10 to 15	14.6	34.8
15 to 20	10.5	8.7
20 to 25	18.2	13.0
25 to 30	44.9	21.7
30 to 35	1.6	-
35 to 40	0.0	-
40 to 45	0.4	-
45 to 50	0.4	-
50 to 55	0.4	-
55 to 60	0.0	-
Over 60	0.4	-

Note: (\*) denotes enterprises of the types of ownership, such as federal ownership; joint ownership of Russia's subjects and foreign countries; ownership of Russia's subjects; mixed Russian ownership with a share of federal ownership; mixed Russian ownership with shares of federal ownership and ownership of Russia's subjects.

At the following stage, the frequency of bankruptcies was analyzed depending on the size of

authorized capital (Table 4).

**Table 4:** Distribution of the frequency of bankruptcies in Russia by the size of enterprises' authorized capital in 2019 (Source: SPARK-Interfax, 2019).

Size of authorized capital, rubles	State-owned enterprises, %*	Private enterprises, %
Up to 100,000	10.3	34.8
100,000 to 1,000,000	21.4	8.7
1,000,000 to 5,000,000	13.2	0.0
5,000,000 to 10,000,000	7.0	0.0
10,000,000 to 15,000,000	5.3	8.7
15,000,000 to 20,000,000	3.3	0.0
20,000,000 to 25,000,000	2.1	0.0
25,000,000 to 30,000,000	4.1	8.7
30,000,000 to 35,000,000	1.6	0.0
35,000,000 to 40,000,000	0.8	0.0
40,000,000 to 45,000,000	1.2	0.0
45,000,000 to 50,000,000	1.2	0.0
Over 50,000,000	28.4	39.1

Table 4 indicates that the largest share of state-owned enterprise bankruptcies (28.4%) was recorded among those with an authorized capital of more than 50 million rubles, followed by state-owned enterprises with an authorized capital of between RUR 100,000 to RUR 1,000,000 (21.4%). 39.1% of bankruptcies were recorded among private companies with an authorized capital of more than 50 million rubles. The second-largest share of insolvencies (34.8%) was registered among private companies with an authorized capital of fewer than 100,000 rubles.

Having analyzed the statistical data on bankruptcies of state-owned and private enterprises, we can conclude that the scale of insolvencies is modest, which is evidenced by the low share of bankruptcies in the total number of registered enterprises. At the same time, over the last 6 years, there has been a negative upward trend in the number and the share of bankruptcies, which indicates an unfavorable business environment. Its deterioration is due to both an increase in the tax burden and an objective worsening of macroeconomic conditions caused by the sanctions policy and the chaotic situation in commodity markets.

**Table 5:** Regression statistics

Index	Hypothesis 1	Hypothesis 2	Hypothesis 3
F	10.401	11.404	0.242
Significance F	0.0145	0.0118	0.637
p value (Y)	0.151	0.106	0.668
p value (X1)	0.145	0.117	0.637
Standard error (Y)	389642.343	72635.014	75845.310
Standard error (X)	193.3707	36.047	37.640
t-statistics (Y)	-3.195	3.440	-0.447
t-statistics (X)	3.225	-3.377	0.492
alpha	0.05	0.05	0.05

For hypothesis testing data, Table 5 gives regression statistics. The share of bankruptcies among state-owned and private companies is somewhat equal. Hypothesis *H1* was not confirmed (confidence level 95%). Private and municipal unitary enterprises exhibit a downward trend in the

proportion of bankruptcies in the total number of applications filed; however, for state unitary enterprises, this share demonstrates a significant growth. The majority of enterprises at the state of liquidation are recorded among those owned by Russia's constituent territories (regional authorities). There are approximately equal numbers of enterprises under liquidation with a mixed type of ownership of Russia's constituent territories and foreign countries, as well as federal ownership.

The frequency of bankruptcies in the sample shows that the largest share of insolvencies is registered among state-owned enterprises with a lifespan of 25-30 years, followed by enterprises aged 20-25 and 10-15. Private companies going bankrupt are significantly younger: about a third of private companies included in the sample is at the age of 10-15, almost a quarter - from 25 to 30, and nearly a fifth - from 5-10 years old. The hypothesis *H2* was not confirmed (confidence level 95%).

Hypothesis *H3* about the correlation between the number of bankruptcies and the small size of authorized capital was not confirmed (confidence level 95%). The largest proportion of state-owned enterprise bankruptcies was recorded among those with an authorized capital of more than 50 million rubles. This conclusion is true for private companies as well. However, they also have a large share of bankrupt enterprises with a small size of authorized capital (less than 100,000 rubles).

## 5. CONCLUSION

The scale of the Russian company bankruptcies is relatively modest. Nevertheless, there is an alarming tendency towards an increase in the number of insolvencies against the background of a general decrease in the number of legal entities (enterprises and associations) in Russia. Negative shifts in the dynamics can be traced for 2013-2014. The analysis of the general structure of bankruptcies by ownership types indicates that the vast majority (over 98%) of court-approved insolvencies is recorded among private enterprises. For state-owned companies, this share was under 2%. From the structural and dynamic analysis of bankruptcy cases, the fundamental structural shifts were observed for 2015-2017; no significant changes occurred before and after this period.

All the hypotheses were not confirmed. The research results prove that the relative number of bankruptcies among state-owned enterprises does not exceed the same indicator for private companies. However, there are dissimilarities within the group of state-owned enterprises: the share of MUEs declared bankrupt is significantly greater than that of SUEs. With the extension of the lifespan of state-owned enterprises, the number of bankruptcies grows. The largest share of bankruptcies falls on companies aged 25-30. In contrast to state-owned enterprises, most private bankrupt companies were at the age of 10-15. Depending on the increase in the size of authorized capital, the number of bankruptcies does not decrease but grows. The largest share of bankruptcies was recorded among enterprises with an authorized capital of over 50 million rubles.

Thus, the study of the dynamics and the nature of enterprise bankruptcies by the types of ownership (state-owned and private) did not reveal significant differences between them.

## 6. AVAILABILITY OF DATA AND MATERIAL

Information can be made available by contacting the corresponding author.

## 7. ACKNOWLEDGEMENT

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## 8. REFERENCES

- Ali, A., & Ur Rehman, H. (2018). Macroeconomic instability and its impact on the gross domestic product: An empirical analysis of Pakistan. *Journal of Eurasian Economic Dialogue*, 1(3), 43-62.
- Almakunova, R. (2019). Businesses for liquidation: Half of the bankruptcies of legal entities take place in three sectors. <http://iz.ru/981019/roza-almakunova/dela-na-vyilet-polovina-bankrotstv-iurlitc-prikhoditsia-na-tri-sfery> Accessed November 2019.
- Azizov, A.V., & Dzhumaniyazova, S.R. (2016). A brief analysis of the dynamics of bankruptcies in the Russian Federation, individual regions and by forms of business. *NovaInfo.Ru*, 1(45), 73-82.
- Bai, C.E., & Wang, Y. (1998). Bureaucratic control and soft budget constraints. *Journal of Comparative Economics*, 26(1), 41-61. DOI: 10.1006/jcec.1997.1506
- Batkovskiy, A.M., Efimova, N.S., Kalachanov, V.D., Semenova, E.G., Fomina, A.V., & Balashov, V.M. (2018). Evaluation of the efficiency of industrial management in high-technology industries. *Entrepreneurship and Sustainability Issues*, 6(2), 577-590. DOI: 10.9770/jesi.2018.6.2(8)
- Batkovskiy, A.M., Fomina, A.V., Semenova, E.G., Khrustalev, E.Y., & Khrustalev, O.E. (2016). Models and methods for evaluating operational and financial reliability of high-tech enterprises. *Journal of Applied Economic Sciences*, 11(7), 1384-1393.
- Bazunova, E.V. (2016). Comparative analysis of bankruptcy of private and state-owned organizations. *Youth and Science*, 4, 118.
- CDB. (2019). Competition Development Bulletin. The public sector in the Russian Economy (March 2019). <http://ac.gov.ru/archive/files/publication/a/21642.pdf> Accessed November 2019.
- EFRSB. (2019). The Russian Unified Federal Register of Bankruptcy Information (EFRSB) statistical bulletin. December, 31. <http://clck.ru/MmLSK>
- Federal Law No. 127-FZ. (2002). On insolvency (bankruptcy). *Russian Federation Code*, October 28, 2002, No. 43, Article 4190.
- FinExpertiza. (2020). Every fifth company closed in Russia in 2019. <http://finexpertiza.ru/press-service/researches/2020/zakrylas-kazhdaya-pyataya-kompaniya> Accessed: January 2020.
- Garškaite-Milvydiene, K. (2012). Diagnostics of bankruptcy threat to enterprises. *Journal of Security and Sustainability Issues*, 1(3), 197-203. DOI: 10.9770/jssi/2012.1.3(5)
- Karzaeva, E.A. (2017). The analysis of the bankruptcy procedures of legal entities in Russia in the years 2010-2016. *Accounting. Analysis. Auditing*, 5, 70-77.
- Kovalev, E.V., & Mnatsakanyan, A.G. (2016). Analysis of bankruptcy statistics in the Russian Federation. *Baltic Economic Journal*, 2(16), 69-74.
- Kovan, S. E. (2009). *Bankruptcy prevention*. Moscow: INFRA-M. 78-82.
- Kowalski, P., Büge, M., Sztajerowska, M., & Egeland, M. (2013). State-owned enterprises: Trade effects and policy implications. *OECD Trade Policy Papers*, No. 147. DOI: 10.1787/5k4869ckqk7l-en
- Kozlova, S.V., Bratchenko, S.A., & Zvyagintsev, P.S. (2019). *Management of state property in modern Russia: The evolution of concepts, tools, mechanisms*. Moscow: Institute of Economics of the RAS. P. 24.

- Kuzmin, E. A. (2018). Data on empirically estimated corporate survival rate in Russia. *Data in Brief*, 16, 850-864. DOI: 10.1016/j.dib.2017.12.011
- Kuzmin, E.A., & Guseva, V.E. (2016). Survival rate and lifecycle in terms of uncertainty: Review of companies from Russia and Eastern Europe. *Journal of Advanced Research in Law and Economics*. DOI: 10.14505/jarle.v7.7(21).23
- Litau, E. Y. (2019). Concept of entrepreneurship anti-ideology. *Entrepreneurship and Sustainability Issues*, 7(2), 1308-1318. DOI: 10.9770/jesi.2019.7.2(35)
- Liu, Q., Tian, G., & Wang, X. (2011). The effect of ownership structure on leverage decision: New evidence from Chinese listed firms. *Journal of the Asia Pacific Economy*, 16(2), 254-276. DOI: 10.1080/13547860.2011.564755
- MacCarthaigh, M. (2011). Managing state-owned enterprises in an age of crisis: An analysis of Irish experience. *Policy Studies*, 32(3), 215-230. DOI: 10.1080/01442872.2011.561688
- Marina, M.M. (2018). Analysis of the structure and dynamics of the bankruptcies of Russian companies in 2007-2017. *Science and Education Development Trends*, 39(2), 16-18. DOI: 10.18411/lj-06-2018-21
- Melay, E.A., & Ustinkova, A.S. (2017). Dynamics and analysis of bankruptcy of legal entities in the Russian Federation. *Bulletin of the Tula Branch of the Financial University*, 1, 37-39.
- Mogilat, A. N. (2015). Bankruptcy of companies in the real sector in Russia: Main trends and financial “portrait” of a typical bankrupt. *Scientific works: Institute of Economic Forecasting of the RAS*, 13, 156-186.
- OECD. (2004). Comparative report on corporate governance of state-owned enterprises. Retrieved from: DAFFE/CA/PRIV(2004)2/REV2.
- Panfilova, E.A. (2013). Comparative analysis of bankruptcy of state-owned and private business entities. *The Russian Journal of Entrepreneurship*, 18(240), 2-11.
- Poleshchuk, T.A., & Markova, D.A. (2016). Bankruptcy of legal entities in Russia. *Society: Politics, Economics, Law*, 8, 63-67.
- Ponomarev, V.A., & Petrov, M. V. (2019). Territorial interaction is the basis for the development of a small innovative enterprise and other territorial enterprises. *Radio Industry (Russia)*, 29(1), 61-66. DOI: 10.21778/2413-9599-2019-29-1-61-66
- Rosstat. (2016). Russia in Figures. Concise statistical book of the Russian Federal State Statistics Service. Moscow.
- Rosstat. (2018). Russia in Figures. Concise statistical book of the Russian Federal State Statistics Service. Moscow.
- Rosstat. (2019). Russia in Figures. Concise statistical book of the Russian Federal State Statistics Service. Moscow.
- SCRF. (2019). Judicial Department at the Supreme Court of the Russian Federation. Retrieved from: <http://www.cdep.ru/index.php?id=79>
- Sivelkin, V.A., & Kuznetsova, V.E. (2002). *Statistical analysis of the structure of socio-economic processes and phenomena*. Orenburg, Russia: OGU Publ. P. 6.
- Smirnov, R.O. (2017). Issues of commercialization of innovative technologies in the Russian Federation in the field of entrepreneurial activities. *Radio Industry (Russia)*, 3, 110-112. DOI: 10.21778/2413-9599-2017-3-110-112

SPARK-Interfax. (2019). Bankruptcy data. <http://www.spark-interfax.ru/ru/features/bankruptcy>. Accessed: November 2019.

Stroganova, E.A. (2016). The analysis of statistical data on bankruptcy of the enterprises in the Russian Federation for 2012-2015. *Scientific Almanac*, 4-1(18), 235-243.

Tantsarin, O.A. (2018). A brief analysis of the dynamics of bankruptcies in the Russian Federation and its individual regions for 2010-2017. *Scientific-Analytical Economic Journal*, 4(27), 33.

Zakirova, D.F., Panteleev, D.S., and Zakirova, E.F. (2018). Estimating Bankruptcy Probability of Credit Organizations. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies*, 9(4), 307-315.

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