# The Receipt of Grants as a Key Determinant of Venture Investment Size in Russia-based IT Startups

**Ivan Rodionov**
Doctor of Sciences (Economics)
OCRID
E-mail: irodiono@mail.ru

National Research University Higher School of Economics, Moscow, Russia

**Alexander Semenov**
PhD in mathematics, project manager
OCRID
E-mail: semenov.venture@mail.ru

National Research University Higher School of Economics, Moscow, Russia
Innopolis University, Innopolis, Russia

**Aleksey Oskin**
PhD student
OCRID
E-mail: a.a.oskin1201@gmail.com

National Research University Higher School of Economics, Moscow, Russia

**Journal of Corporate Finance Research**, Vol. 14, No. 3, pp. 19-27 (2020)
**DOI:** https://doi.org/10.17323/j.jcfr.2073-0438.14.3.2020.19-27
**Received** 13 April 2020 | **Peer-reviewed** 15 May 2020 | **Accepted** 25 May 2020

## The Receipt of Grants as a Key Determinant of Venture Investment Size in Russia-based IT Startups


# Abstract

Since 2006, Russian policymakers have taken various measures to stimulate the venture capital market. Government venture capital funds have been created, with, for example, the Russian Venture Company being capitalised to the amount of 15 billion rubles. Consequentially, since 2011, state-owned companies have been investing in private venture funds. These measures have led to increased levels of fundraising for startups. The main mechanism of such financing is grant support for young companies. As of 2018, the ratio of grant money provided to the total amount of funds raised in Russia is one of the highest among developed and developing countries (the USA, by comparison, is more than 2.5 times lower). The venture market landscape is such that when deciding whether to invest in a company, investors inevitably turn their attention to the details of previous rounds of company financing. In that context, the purpose of this work is to analyze the effect of grants received on the volume of subsequent financing a company attracts.

To analyze the effect of receiving a grant, the determinant approach was used. Based on a sample of 184 Russian IT startups, two OLS models were built to show the effect of grant size on follow-on investment rounds. Various sets of determinants were considered that explain the volume of investments attracted by startups for both Russian and international markets. In addition, an excursus was conducted to study the effectiveness of government venture funds, which are the main grantors in the Russian venture market.

Our results indicate that investing in startups which have received a grant increases the likelihood of an exit for the investor in the next investment round. Based on the results of previous studies, we show that the size of a received money grant has a positive effect on the amount of funding attracted in both follow-on rounds. For comparison, a number of previous studies of the Russian venture capital market showed that the investment size of the current round was influenced only by the previous instance of fundraising.

The scientific novelty of this article concerns our evidence that the amount of funding attracted by startups is explained by such a specific indicator as grant support. Our results testify to the attractiveness for investors of Russian IT startups that received grant support. These conclusions have clear practical value for those who invest in Russian startups, the startups themselves, and investors in Russia in general.


**Key words:** venture capital, start-up accelerator, determinants, microeconomic factors, macroeconomic factors, investment activity, rounds of investments, grants

**JEL classification:** G32, M13, L25

One of the priority areas for the development of the financial market in Russia is the improvement of the investment environment, including for investments in innovative companies in the early stages – that is, startups. The government has paid great attention to this issue. A large number of start-up accelerators and incubators have been created, and grants are available for potentially significant projects and productive teams.

## Introduction

For the first time after a multi-year recession, a consistent increase in the volume and number of transactions and the expansion of the active investor community can be observed. Despite various geopolitical and internal difficulties, start-ups and funds from Russia continue to make deals. This positive trend is mentioned in various commercial research and market surveys. For example, in the report from "MoneyTreeTM: Venture Market Navigator" (PwC & RVC, 2018) for 2017 and the first half of 2018, it was noted that after negative events associated with unfavourable macroeconomic and political factors, a process of stabilization takes place. Evidence of that can be clearly seen from the fact the total volume of the venture capital ecosystem amounted to 410 million US dollars, as was the case in 2016. Nevertheless, the dynamics of various segments of the venture market at the end of 2017 was multidirectional. While an increase in the total volume of venture capital investments from 165 million US dollars to 244 million US dollars (an increase of 48%) occurred, it coincided with a fall in the volume of transactions for investors leaving venture projects, from 120 million dollars to 80 million dollars (a drop of 33%). This may indicate the presence of an active investment phase for many players in the Russian venture capital market. However, it is worth noting that, according to the methodology used in the MoneyTreeTM study, cash grants are not taken into account when assessing the volume of the market of venture transactions, since they are a non-market tool to support innovation.

Nevertheless, various grant systems for young and promising start-ups play an important role in the venture capital industry. As a rule, grantors are structures with the participation of the government and large international corporations. The most active grantors on the Russian market are the Foundation for Assistance to the Development of Small Forms of Enterprises in the Scientific and Technical Sphere (the Innovation Promotion Foundation or the Bortnik Fund) and the Skolkovo Foundation. According to the results of the study "MoneyTreeTM" for 2017, the number of grants issued amounted to 4,558 for a total sum of $ 88.5 million. Compared to 2016, the total amount of grants decreased by 27%, and the number of grants issued fell by 2%. Moreover, from the previous reports cited at (PwC & RVC, 2017) and (PwC & RVC, 2016) it is clear that both the number of grants awarded and their total investment are decreasing from year to year.

Grants are a crucial element for the sustainable development of the venture capital market and the innovation ecosystem as a whole. Nevertheless, participation in a grant competition requires a certain amount of preparation from the team, and may divert its attention from the original objectives of their project. Therefore, it is interesting to analyze how successful the projects are that have received such grants in the past. Furthermore, it is hoped that this research will contribute to a deeper understanding of how receiving a grant affects the further financing of projects.

## Literature review

Identifying the determinants of venture capital investment attraction using mathematical and statistical tools is a relatively new and little-studied direction. One reason is that it is not a simple task to select, analyze, and systematize such numerical factors that can potentially influence the value of venture capital investments. In their study (Jeng & Wells, 2000) shows that the diversity of investment mechanisms, sources of capital, and approaches to asset management in investment companies limit the ability to compare venture capital markets among different countries. As a result, attracting venture capital investments from round to round in different countries, as a rule, depends on different market mechanisms. That feature significantly limits the possibility of finding some universal determinants which explain the volume of investments and the market as a whole. In addition, it is also worth noting that, with the exception of the United States, the relevant data are only available from the eighties to the nineties of the twentieth century. For Russia, such period is shorter, and starts only from the beginning of the twenty-first century.

Despite all the mentioned difficulties, it is possible to highlight the factors that have already been studied in the scientific literature and which show a certain statistical significance. These factors include relevant interest rates, the volume of attracted investments in previous rounds, initial public offering (IPO), the "authority" of a venture investor, returns on invested capital in private and public companies, taxation, regulation of pension funds and their activity on venture capital market, stock market capitalization, and labour market elasticity.

Among the factors listed, articles (Black & Gilson, 1999) and (Gompers & Lerner, 1998) highlight a significant relationship between the number of IPOs and the amount of venture capital attracted in developed markets. This established relationship has a clear business case. Thus, the sale of shares of a portfolio company on the open market through a public offering is one of the mechanisms for venture funds to exit from investments. The large number of new IPO transactions indicates the presence of additional returns on the sale of company shares on the open market, which in turn will attract new investments in venture capital projects (Berlin, 1998). On the other hand, large opportunities for raising capital in the public

market also increase the demand for venture capital investments from start-up projects (Jeng & Wells, 2000). Despite the clear positive effect of the growing number of IPOs for the US venture capital market, for the European market, the increase in the number of IPOs has a negative effect on attracted volumes of venture financing (Marti & Balboa, 2001). The authors explain this by the fact that for the considered period of time in Europe, large companies initiated an IPO when they had already passed the stage of venture financing. Accordingly, for European venture capital investors, this is not an indicator of the high demand for their portfolio assets.

A similar factor is the size of the mergers and acquisitions (M & A) market. In particular, (Elisabete, Cesaltina, & Mohamed, 2013) showed that for 23 European countries for the period from 1998 to 2003, the size of the M & A market and the ratio of the company's market value to its balance sheet value (P / B ratio) for the high-tech sector both have significant positive effects on the venture capital activity. The authors explain this by a high level of information asymmetry, which, in turn, is extremely attractive for venture investors, allowing them to exit from their investments in a highly liquid market with an excess premium.

The negative impact of raising the income tax rate was found in the work cited at (Poterba, 1989). The author showed that the increase in the rate of tax on the growth of invested capital significantly reduces the commitment of partners of venture funds, which in turn makes managers more carefully select objects for investment. Such a relationship between the rate of income tax and the amount of attracting new venture capital investments was found not only in countries with developed venture capital financing, but also in China (Aylward, 1998).

Another variable that can significantly affect the volume of venture capital investments is the level of pension funds in the economy, provided that they are allowed to invest in venture capital. Since significant amounts of money are managed by pension funds, their participation significantly affects the supply of venture capital (see (Gompers & Lerner, 1998) and (Jeng & Wells, 2000)). This variable is most important for countries such as the United States. In most European countries, pension funds do not manage such large sums of money and / or do not have the opportunity to invest in private (non-market) companies.

Global macroeconomic indicators such as GDP growth (Gompers & Lerner, 1998) have a positive effect on the volume of attracted investments from venture capital firms. The growth of the economy as a whole contributes to increasing the level of commitment on the part of investors of venture funds themselves (Jeng & Wells, 2000). The growth of the capitalization of the country's stock market also has a positive effect on the volume of funds raised from venture funds. The work cited at (Bonini & Alkan, 2006) showed this for 16 countries from 1995 to 2002. At the same time, it is worth noting that the degree of influence of this determinant varies and depends on the country. (Aylward, 1998) showed that this positive relationship is fair and significant in the case of developing countries. For example, in the countries of Western Europe there was a surge in capital inflows to venture funds from 1988 to 2000 (Schertler & Andrea, 2003), when the prospects for economic development in the region improved. However, this relationship loses its statistical significance from 1995 to 2000 for the Eastern European market, as shown in (Marti & Balboa, 2001).

Another effect of a fundamental economic indicator, such as the elasticity of the labor market, has also been established for developed markets. The research referenced at (Jeng & Wells, 2000) argue that the less resilient the labor market, the more difficult it will be for a person to find a job after an unsuccessful attempt to create his company. This reduces the potential of the entrepreneur, which ultimately reduces investment activity in the venture capital market. Paper (Black & Gilson, 1999) found a negative correlation between the volume of venture investment and legal restrictions on the dismissal of employees. In Germany for example, there is a state protection of workers against layoffs, which imposes additional costs on young companies, and also reduces their potential in the face of venture capital investors. What can be said about the UK and the United States, where labor markets are much more flexible. However, a later study ( (Schertler & Andrea, 2003)) on data from 14 countries in Western Europe for the period from 1988 to 2000 shows an inverse correlation. One possible reason for such a result may be an increase in the unemployment rate over the considered period (Elisabete, Cesaltina, & Mohamed, 2013).

The above determinants of venture capital investment are rather global, since they have an impact on the entire economy. Of course, with the growth of the total volume of venture capital investments in the economy, each startup has more chances to attract additional funding. However, if we consider the question of attracting funding from the perspective of each specific project separately, we should consider the determinants directly related to the projects themselves. These determinants include: the amount of financing attracted by the project in the last round, the presence of an experienced investor among investors of the previous round, and the presence of an earlier grant received by the project.

A good example of a fundamental study of the local venture capital market is a series of research papers by Russian researchers. The work in question (Semenov & Gosteva, 2014) represents one of the first attempts to analyze the market impact of various indicators on the volume of attracted investments in the second and subsequent rounds. They showed a strong positive correlation of investments in the second round with the size of investments in the first round. The potential reason for the positive impact of the size of the investments of the first round, according to the authors, is that companies that have already attracted a significant amount of funds are more interesting for new investors. Similar results were obtained (Marti & Balboa, 2001) on a sample of 16 European countries from 1987 to 1999. On the other hand, it is possible that the presence of an "experienced" investor in the previous round,

regardless of the company's results, makes the company more attractive to investors (Semenov & Sokolova, 2015). "Experienced investor" in this context refers to institutional and private investors who have experience in exiting their investments. In addition, experienced investors have a number of connections in this sector and can themselves attract new investors to the project.

The research cycle of the Russian IT market of a start-up company is also studied in (Rodionov, Semenov, & Seleznev, 2018). The total data sample includes 55 venture capital deals from 2010 to 2016 in industries such as e-commerce, tourism, finance, and education. The authors of that research paper refuted the impact on the volume of attracted investments of such internal indicators of companies as the number of project founders, the year of investments, and the project industry.

When studying the issue related to the impact of grants on the further financing of the project, it is worth mentioning the institution of state venture funds and their role in the economy. The governments of many countries around the world have created government venture capital funds (GVC) to promote the development of the private venture capital industry and help young innovative companies. Empirical evidence is ambiguous (Colombo, Cumming, & Vismara, 2016). The impact of GVC investors on portfolio companies requires further analysis of the role of such factors as: the stage of development of a portfolio company, the level of human capital, and the business model. The GVC phenomenon is another promising area of research for the venture capital industry. The effect is positively influenced by projects from GVC funds and is more pronounced when GVC is combined with private investors (Grilli & Murtinu, 2014) and (Grilli & Murtinu, 2014b). GVC programs can act as funds of funds, reducing their risks, and increasing coverage. However, there is no systematic comparison of the effects of GVC direct investment and private venture capital investments.

## Data and sample construction

To analyze the impact of the grants received by IT startups on their future performance, a sample of 184 companies was collected, containing the following information about each of them:

- Grant amount received.
- Amount of financing at the seed stage.
- Amount of financing in the first round.
- Amount of funding in subsequent rounds.
- Grantmakers.

The market sector in which the startup operates.

Data sampling was downloaded from the Rusbase portal (Table 1). For the study selected companies from different sectors of the economy were chosen which satisfied the following conditions:

- Grant availability.
- Subsequent investments.

**Table 1.** Data example

| Sector | Company | Grant, $ | Grantmakers | Round A, $ | Round B, $ |
|---|---|---|---|---|---|
| Messengers | Budist | 25 000 | Vkontakte | 1 000 000 | 1 000 000 |
| Security | Technovisor | 5 450 | Microsoft; IIDF | 78 000 | 240 000 |
| Food | Elementaree | 7 000 | Web Ready | 300 000 | 500 000 |
| Service | YouDo | 25 000 | Start Fellows | 1 000 000 | 6 200 000 |
| Software | Parallels | 5 000 000 | Skolkovo | 1 000 000 | 5 000 000 |

The main grantors are large and established IT companies, start-up accelerators (mostly with state participation), and the state structures themselves (Diagrams 1 and 2).

**Diagram 1.** The segmentation of data by economic sectors

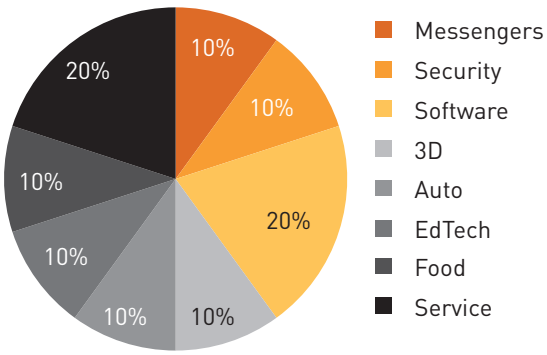
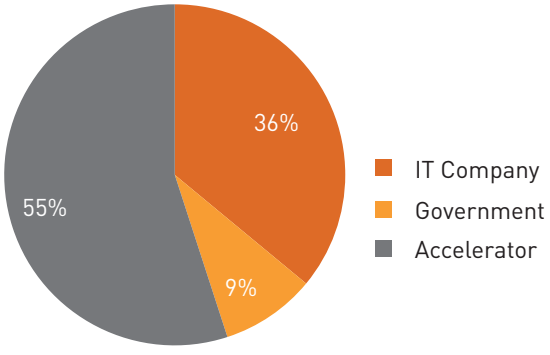



**Diagram 2.** The main grantors



## Variables description

To investigate the impact of the grants received on investment in subsequent rounds, two OLS models were built.

**Hypothesis 1:** The Round A investment size positively depends on the seed investment and grant investment amounts.

**Model 1.** In Model 1, the volume of investments received by the company in the first round was considered as a dependent variable. The dependent variables were the volume of investments received at the seed stage and the size of the grant received.

As a result, model 1 has the following specifications:

Round_A = Intercept + b1*Grant + b2* Seed + u, where

- Round_A – natural logarithm of investment in the round A;
- Seed – natural logarithm of seed investment;
- Grant – natural logarithm of the amount of investment received as a grant.

**Model 1.** Results

| | log (*Fundraising*) |
|---|---|
| *Seed* | 0.333***<br>(0.094) |
| *Grant* | 0.022**<br>(0.098) |
| *Constant* | 4.065***<br>(0.542) |
| *Source:* author's calculations. | *** Significant at the 1 percent level.<br>** Significant at the 5 percent level.<br>* Significant at the 10 percent level. |

| | d *f* | SS | MS | F | *Significance* F |
|---|---|---|---|---|---|
| Regression | 2 | 33.72 | 16.86 | 8.08 | 0.00067 |
| Residual | 74 | 154.32 | 2.08 | | |
| Total | 76 | 188.04 | | | |

| | Coefficients | Standard Error | t Stat | P-value |
|---|---|---|---|---|
| Intercept | 4.065 | 0.542 | 7.49 | 0.00001 |
| Grant | 0.022 | 0.098 | -2.33 | 0.02231 |
| Seed | 0.333 | 0.094 | 3.55 | 0.00068 |

According to the F-test results both the model and the coefficients are statistically significant under the 5% significance level.

| | Statistic | Critical values |
|---|---|---|
| Durbin–Watson | 1.84 | (1.57; 1.68) |
| Breusch–Godfrey | 0.62 | 1.99 |

According to the Durbin–Watson and Breusch–Godfrey tests there is no statistical evidence at the 5% significance level that the error terms are autocorrelated.

| | *Significance* F | Critical values |
|---|---|---|
| White | 0.29 | 0.05 |

According to the White test homoscedasticity is rejected under the 5% significance level.

**Hypothesis 2:** The Later Round investment size positively depends on the seed investment, Round A, and grant investment amounts.

**Model 2.** In the second model, the volume of investments obtained in the second round was already a dependent variable. The volume of investments received in the first round and the seed stage, as well as the size of the grant received, were considered as dependent variables.

As a result, model 2 has the following specifications:

Round_B = Intercept + b1*Grant + b2* Seed + b3* Round_A + u, where

- Round_B – natural logarithm of investment in round B, C, and so on;
- Round_A – natural logarithm of investment in the round A;
- Seed – natural logarithm of seed investment;
- Grant – natural logarithm of the amount of investment received as a grant.

**Model 2.** Results

| log (*Fundraising*) | |
|---|---|
| *Seed* | 0.227<br>(0.178) |
| *Grant* | 0.381**<br>(0.167) |
| *Round_A* | 0.339**<br>(0.167) |
| *Constant* | 1.978<br>(2.137) |
| *Source*: author's calculations. | *** Significant at the 1 percent level.<br>** Significant at the 5 percent level.<br>* Significant at the 10 percent level. |

| | d *f* | SS | MS | F | *Significance* F |
|---|---|---|---|---|---|
| Regression | 3 | 51.58 | 17.19 | 6.28 | 0.00266 |
| Residual | 24 | 65.68 | 2.73 | | |
| Total | 27 | 117.27 | | | |

| | Coefficients | Standard Error | t Stat | P-value |
|---|---|---|---|---|
| Intercept | 1.978 | 2.137 | 1.43 | 0.16453 |
| Seed | 0.227 | 0.178 | 1.27 | 0.23173 |
| Grant | 0.381 | 0.167 | 3.52 | 0.01737 |
| Round_A | 0.339 | 0.167 | 2.17 | 0.02660 |

According to the F-test results both the model and the coefficients are statistically significant under the 5% significance level, except for the seed investment size.

According to the Durbin–Watson and Breusch–Godfrey tests there is no statistical evidence at the 5% significance level that the error terms are autocorrelated.

| | *Significance* F | Critical values |
|---|---|---|
| White | 5.5789E-192 | 0.05 |

According to the White test homoscedasticity is rejected under the 5% significance level.

## Results

Testing model 1 showed that the hypothesis about the impact of the grant received by the company to attract further investment in the first round is not rejected at the 5% significance level. This result confirms the earlier conclusions that the current investment round size is affected by the volumes of previous fundraising. Accordingly, the grant received can be considered as a regular investment round.

Testing model 2 showed that the hypothesis about the impact of the grant received by the company on the attraction of investments in the second round is also not rejected at the 5% level of significance. Compared with the regular investment round, those with prior grant support "win" when it comes to Round B and follow-on rounds. From which we can conclude that the impact of the grant on the volume of attracted financing is more durable. It turns out that investors generally evaluate the startup positively, regardless of whether it received a grant in the previous investment round or a few rounds ago.

In addition, testing hypotheses about the impact of seed investments on investments of the first and second rounds showed that the size of seed investments is significant only for the first round, and not significant for the second round at a 5% significance level.

All tested models are significant and have significant estimates without any sign of homoscedasticity, multicollinearity and autocorrelation of error terms. It also should be mentioned that there is no way to check the model's stability over time on different subsamples because the original sample is rather small.

## Conclusion

The growth of state support for small businesses through the allocation of grants through start-up accelerators has fueled interest from companies for such incubators. The procedure for selecting projects for investing in such a start-up accelerator resembles a competition, during which teams work on their projects under the strict guidance of mentors and regularly present the results of the increase in the value of their project.

This work was aimed at testing hypotheses about the effectiveness of financing start-ups by allocating cash grants, and a review of the scientific literature has shown that the venture market can be analysed for this purpose, with the help of econometric models. Moreover, such studies help to identify less-obvious relationships as to the determinants of investment volumes. In particular, this work uses some of the conclusions obtained in previous empirical studies of the Russian venture capital market. Based on the reviewed papers, two models were constructed, investigating the impact of the grants received and the size of seed investments in attracting investments in subsequent rounds.

One of the main findings of the study is the confirmation of the hypothesis that the grant received has a positive effect on the amount of investment in the first and second rounds. This may be explained by the fact that investors consider startup accelerators as a kind of school for a team of entrepreneurs. However, the fact of receiving a cash grant loses its influence on the size of investments attracted in the second and subsequent rounds at a significance level of 1%. This may indicate that during the second and subsequent rounds, potential investors are more interested in "fresh" operating results, and to a lesser extent, the results obtained at the start of the project.

The second less obvious conclusion of the study relates to the significance of the size of seed investments for the first round and the absence of this significance for the second round. The explanation for this may be that, as a rule, seed investments are aimed at creating a minimum viable product and testing the demand for it. Therefore, the size of seed investments signals to investors of the subsequent round about a high degree of trust in the team and the prospects of their ideas. The second round of investment, as a rule, is aimed at a significant expansion in the main market for the product, or access to international markets. Therefore, investors are guided by the results of the team in scaling their product, rather than its original version.

Also, in this paper, the result of previous empirical work on the Russian venture capital market was confirmed, which showed that the volume of investments in the current round is significantly affected by the volume of investments attracted in the previous round.

Based on the conclusions described above, it is possible to hypothesize that when i the determinants of investment volumes in Russian start-up projects, it is worth considering only identifying those determinants that relate to the time period in which the previous round of investments occurred. This hypothesis is worth exploring further. We expect that this study will be useful both for investors investing in Russian startups and for startups themselves. The first will be more confident to enter the companies that received grants, and the latter will be more interested in participating in startup accelerators, which ultimately will have a positive impact on the industry as a whole.

## References

1. PwC & RVC.MoneyTreeTM Report. 2018. UDL:https://www.pwc.ru/ru/publications/money-tree-2018.html.
2. PwC & RVC.MoneyTreeTM Report. 2017. UDL:https://www.pwc.ru/ru/publications/money-tree-2017.html.
3. PwC & RVC.MoneyTreeTM Report. 2016. UDL:https://www.pwc.ru/ru/publications/money-tree-2016.html.
4. L. A. Jeng and P. C. Wells. The Determinants of Venture Capital Funding: Evidence Across Countries. *Journal of Corporate Finance.* 2000; 6(3): pp. 241-289. DOI: 10.1007/s10693-012-0146-y

5. B. S. Black and R. J. Gilson. Does Venture Capital Require an Active Stock Market? *Journal of Applied Corporate Finance.* 1999; 11(4): pp. 36-48. DOI: 10.1111/j.1745-6622.1999.tb00512.x.

6. P. A. Gompers and J. Lerner. What Drives Venture Capital Fundraising? Washington: Brookings Papers: Microeconomics.1998; pp. 149-192.

7. M. Berlin. That Thing Venture Capitalist Do. *Business Review*. 1998: pp. 15-27

8. J. Marti and M. Balboa. Determinants of private equity fundraising in Western Europe. 2001.

9. G. S. F. Elisabete, P. P. Cesaltina and A. G. Mohamed. The Determinants of Venture Capital in Europe — Evidence Across Countries. *Journal of Financial Services Research*. 2013; 44(3): p. 259–279, 2013. DOI: 10.1007/s10693-012-0146-

10. J. M. Poterba. Venture Capital and Capital Gains Taxation. *Tax Policy and the Economy.* 1989; vol.3: pp. 47- 6. DOI.ORG/10.1086/tpe.3.20061783

11. A. Aylward. Trends in Capital Finance in Developing Countries. *International Finance Corporation discussion paper.* 1998; №36. DOI.ORG/10/1596/0-8213-4303-3

12. S. Bonini and S. Alkan. The Macro and political Determinants of venture Capital Investments around the world. 2006. URL:http://www.efmaefm.org/0efMaMeeTIngs/efMa%20annual%20MeeTIngs/2007-vienna/ papers/0576.pdf.

13. Schertler and Andrea. Driving Forces of Venture Capital Investments in Europe: A Dynamic Panel Data Analysis. Kiel: Kiel Working Paper. 2003; No. 1172.

14. I. I. Rodionov, A. S. Semenov and V. A. Seleznev. Determinants of the Venture Investment Size in Russian IT Companies. *Journal of Corporate Finance Research*.2018; vol. 15: pp. 44 - 49.

15. M. G. Colombo, D. J. Cumming and S. Vismara. Governmental venture capital for innovative young firms. *The Journal of Technology Transfer*. 2016; 44 (1): p. 10–24, 2016. DOI: 10.1007/s10961-014-9380-9

16. A. Semenov and E. Gosteva. Major Determinants of the Volume of Venture Deals in the Russian IT Companies. *Cloud of Science*. 2014; Vol. 1, Iss.2: p. 337–348.

17. A. Semenov and O. Sokolova.Analysis of Determinants of Russian Private Equity and VC Industry Based on Data Sample. *Cloud of Science*. 2015; Vol.2, Iss.2: p. 265–281.

18. L. Grilli and S. Murtinu. New technology-based firms in Europe: Market penetration, public venture capital and timing of investment. *Industrial and Corporate Change*. 2014; 24 (5), 1109-1148.DOI: 10.1093/icc/dtu025

19. L. Grilli and S. Murtinu. Government, venture capital and the growth of European high-tech entrepreneurial firms. *Research Policy*.2014; 43 (9): 1523-1543. DOI: 10.1016/j.respol.2014.04.002