

HIGH TECH BUSINESS RELATIONS WITH THE STATE IN RUSSIA

By

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Abstract

This thesis is an exploration of the contemporary relationship between high tech business and the state in Russia. Despite the vast literature on state-business relationships (SBRs), the rise of the new high tech sector of the economy challenges the traditional understanding of SBRs. The goal of this research is to find and conceptualize an explanation of SBRs which is relevant for innovation-oriented companies. It is thus a cross-disciplinary study on the intersection of political economy, political regimes and management studies. This research suggests a new typology that defines four possible modes of interaction between two actors: state-capture, business capture, ad hoc symbiosis and coexistence. These types are determined by state and business behavior. The method of research is typology-building on the basis of in-depth interviews conducted during field research in the largest Russian centers of high tech, and supported by analysis of relevant political economy literature. Empirical findings show that sometimes actors change their behavior which leads to the change of SBRs patterns. However, this dynamic is limited by the context and features of subsectors. Further, research finds that the more innovative a business is, the closer its interaction with the state. Generally, business behavior is mostly passive and state behavior is mostly coordinated in Russia. Research results provide a guide for actors about the best strategy for their interaction.

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Table of contents

Abstract.....	i
Acknowledgements.....	ii
Table of contents.....	iii
List of Figures, Tables or Illustrations.....	v
List of Abbreviations	vi
Introduction.....	1
Chapter 1 – Literature Review	6
1.1 Business Behavior.....	6
1.2 State Behavior.....	8
1.3 Treatment of SBRs and Approaches of their Conceptualization	11
1.4 State-Business Relations Typologies.....	15
1.5 Russian political and economic context.....	16
Chapter 2 – Research Design, Theory and Methodology	20
2.1 Theoretical Framework.....	20
2.1.1 Conceptualization of state and business behavior (independent variables)...	22
2.1.2 Conceptualization of SBRs patterns (dependent variables).....	24
2.1.3 Assumptions and omitted types of SBRs.....	25
2.2 Hypotheses	26
2.3 Methodology, Data Collection and Analysis	27

2.4 Features of the Russian High tech and Population of the Case	30
2.5 Literature Contribution and Relevance of the Project	32
Chapter 3 – Empirical Findings	34
3.1 Business Behavior.....	34
3.2 State Behavior.....	37
3.3 State-Business Relations Patterns	40
3.3.1 State Capture	41
3.3.2 Business Capture.....	44
3.3.3 Ad hoc Symbiosis	50
3.3.4 Coexistence	53
3.4 Subsector Comparison	55
Chapter 4 – Results and Discussion.....	60
4.1 Business Behavior.....	60
4.2 State Behavior.....	62
4.3 State-Business Relations.....	64
Concluding Remarks.....	67
Bibliography	72
Appendices.....	77

List of Figures, Tables or Illustrations

Table 1. Typology of state-business relations	22
Figure 1. Dynamics of IT industry Gross Value Added (GVA), as a percentage of the previous year	31
Table 2. Quotes from interviews describing different SBR patterns	40
Table 3. Comparative characteristics of SBR patterns	56

List of Abbreviations

API	application programming interface
B2B	business to business
B2C	business to consumers
B2G	business to government
BAs	business associations
CRM	customer relationship management
EPN	economic-political network
GDP	gross domestic product
GR	government relations
GVA	gross value added
HR	human resources
HSE	Higher School of Economics
IPR	Intellectual property rights
IT	information technologies
KPI	key performance indicators
KGB	Committee for State Security
PAC	political action committee
PPD	public-private dialogue
R&D	research and development
SBR	state-business relationship
SEZ	special economic zone
SMEs	small and medium enterprises
SPIEF	Saint Petersburg international economic forum
USD	The United States dollar
VC	venture capital
WB	World Bank

Introduction

High-tech business¹ is a relatively new sector of economies around the world. It is significantly different from other businesses. It has unique features, namely private-ownership, high atomization and independence from other sectors, small-scale business models with little territorial dependency and as a consequence high mobility.

Different arguments can be assembled favoring and disfavoring high tech businesses' decision to cooperate with their respective states. On the one hand, closer interactions with the government will guarantee private property rights, will let business participate in the policymaking process, will grant additional resources and opportunities such as access to state investments, tax reduction, or removal of certain regulatory restrictions (Waarden 1992). On the other hand, this interaction entails certain risks. A business has to make costly and complex efforts to attract favorable state attention, however they do not guarantee generous state support as a result, especially if the company does not have a significant market share. Besides these concerns, there are other factors such as the fear of potential dependence on the state, bureaucratic pressure, absence of previous experience with government relations and thus lack of knowledge, networks and experience of proper management of those interactions. Overall, business might consider cooperation so involved and costly that more passive behavior would seem a simpler and safer strategy.

¹ This research uses "high tech" as an umbrella term for innovation-oriented companies using already existing information, knowledge and technologies (e.g. digital, innovative production technologies, etc.) or creating new ones. Other selective criteria are private ownership, a relatively short history of existence, strong ties with the globalization process and high mobility. Based on these criteria, high tech business will imply companies involved in the production of computers, electronic and optical products (IT), the production of medicines and materials used for medical purposes (Biotechnologies), the production of electrical equipment, companies in cybersecurity, telecommunication, nanotechnologies (e.g. robot technologies) and innovative start-ups, relying on Internet and data-analytics (HSE 2019, Chen & Huang 2004, Festel et al 2013).

Regarding the state perspective, it generally sees great potential for growth in the high tech sector based on the logic of economic modernization and competitiveness given the tendency towards globalization and the world's growing interdependence. Nevertheless, there is a high degree of uncertainty regarding the state's position in relations as well. There is no doubt that it can benefit from relations with high-tech business. First of all, it was proven by previous research that innovation-oriented companies contribute to economic growth and consistently increase the share of national GDP. (e.g. Solow 1956, Romer 1990, Nadiri 1993, Wong et al 2005 inter alia).

However, economic growth is impossible without investments. A high level of innovation improves the state's reputation in the international arena and attracts foreign investors in the long run (Grossman & Helpman 1991, Rosegger & Gerhard 1986). That is why it would have a reasonable interest in supporting high tech business. In addition, regular state-business relations contribute to the exchange of knowledge and information, which means a more efficient economic policy in the future (Evans 1994). Finally, especially in the context of authoritarian regimes, close private-public interactions can be an act of promotion of a pro-regime position. The state will ensure that businesses will not threaten the regime's survival if it has consistent interactions with it. This is an important factor if one talks about a sector of the economy which has some economic and political power or presumably will reach this stage soon. Given the growth potential of high-tech business this might well be the case.

There is another argument that it is actually harmful to the state to cooperate with business. It has been observed that innovative business is more demanding in SBRs than conservative business as it does not see the government as a guarantee of its survival. This means that if the state is willing to have close relations with high-tech business, it has to make concessions to appease business. Another argument is that the state has little experience working with high-

tech as it is more used to dealing with traditional sectors of the economy which are more predictable and reliable and is thus less effective in relations with this sector. Moreover, similar to the business-side arguments, close relations with high-tech business may be risky. It requires high costs without guarantees of returns of the state's investments (in case of the mentioned above tax reduction and subsidies). High-tech projects are always expensive but also not profitable in the short run. Another argument is the fear of state capture as a result of close relations (Hellman 2003). The state will not give up its dominant position in the economy easily, and if it is concerned about this possibility it would probably avoid contacts with the businesses deemed a threat.

Finally, high-tech business is not a valuable sector of the economy from the social policy angle. For example, usually the state sees cooperation with business as a solution to the unemployment problem. In this situation, innovative start-ups are not valuable because at the seed stage they usually have a very small number of employees and thus cannot have a serious impact on the labor market. However, even when they start to grow and start hiring, they employ highly-skilled workers who are not the ones that suffer from unemployment as the labor market permanently faces a shortage of skilled professionals like them (AHK Report 2019).

These concerns and ambiguities are even more complex in the Russian case study as the Russian reality contradicts common expectations. The country has an overall unfavorable environment for high tech technologies development (Aidis et al 2008). Russia has an authoritarian political regime, a resource-rich economy facing a resource-curse problem (Ahrend 2005), cronyism is the most common mode of state-business interaction and corruption is widespread. Nonetheless, the Russian high tech sector is well-developed and there are some success stories that have already earned world recognition. Among them are six IT

companies based in Moscow: Kaspersky Lab, InfoWatch, ABBYY, Yandex, Acronis, and Mail.ru Group. Start-ups and enterprises of the Skolkovo and Innopolis business incubators and special economic zones are at the forefront of research and innovations. Thus, the *puzzle of this thesis* is the uncertainty about how high-tech in Russia developed and reached high standing in the world despite the constraints and challenges of the unfavorable business environment.

This exploratory project seeks to answer the *research question*: “What strategies do high-tech business and the state have in their approaches to each other and what types of state-business relations do these strategies result in?” I approach this topic by focusing on the Russian country-case and studying the most representative high tech companies and state bodies responsible for business support. My approach is different from others as it has a neutral position in this matter and avoids a one-sided view in which relations are understood only through business or the state perspective. In addition, this study not only proposes and tests a comprehensive typology but also finds patterns of state and business choices and factors that influence them. Research reveals how economic crisis, the characteristics of the market, the presence of foreign companies, the degree of innovative potential of a company, altruistic and egoistic incentives and size and networks define the process of SBRs. The innovation of my approach is that the typology can be generalized and used for different political regimes and economies even though it was driven by country-specific conditions.

The research has the following structure. The first chapter presents an overview of existing literature on SBRs and in particular previous attempts to create typologies for them. It is combined with an analysis of research on the Russian case to understand which contextual characteristics were emphasized in prior research. The weaknesses of those attempts helped to identify the literature gap. The second chapter suggests a new two-dimensional typology,

further explains the research design, variables and their conceptualization and operationalization, methodology, data collection, data analysis, mentions omitted variables and limitations and ends with discussion of this research's overall contribution. The third chapter is devoted to the analysis of empirical findings. It starts with a summary of business and state behavioral patterns and incentives. Then it develops into a description of SBR types and conditions that lead to those types. It also gives a comparative analysis of the types. The fourth chapter reveals more generalizable results and their potential explanations; it also discusses business and state behavior and gives further analysis of SBRs and their dynamics. The thesis finishes with concluding remarks and a summary of the findings, directions for further research, potential criticism, research implementation and policy recommendations.

Chapter 1 – Literature Review

In this section, the following goals are pursued: to give definition to the idea of high tech business in general and to describe its specific features and characteristics in the Russian context, to analyze existing literature regarding the treatment of SBRs and previous attempts to create the SBR typologies. This analysis helped to identify gaps in the current research and establish the need for a new typology.

Before analyzing state-business relations as such, it is important to understand the behavior and approach of both state and business towards each other.

1.1 Business Behavior

Business behavior can be understood through its power *vis-a-vis* the state, its tactics towards the state, a combination of different business characteristics that allow it to have SBRs and its active or passive position. Analysis of these approaches and justification of the focus on active and passive behavior in the research is listed below.

The power of business varies across countries based on the political and economic regime. In democratic political regimes and open economies, the power of business comes from its ability to invest (Lindblom 1983). The state is willing to act to get those investments and afraid of capital outflow, e.g. to developing countries. Because of this, the state is willing to make concessions to business (Poggi 1990). In authoritarian regimes, business power is lower than in democratic ones because of generally lower capital mobility, however, it still has some bargaining tools. The reason for this is that business helps these regimes maintain their political power by creating economic growth, which leads to higher standards of living and thus less

political dissatisfaction of citizens. A key difference between business behavior in democracies and non-democracies is asymmetrical relations in non-democracies, with no clear separation between public-private issues and independent existence of business from the state.

Business power as a conceptualization of business behavior does not adequately suit the typology in this research, as here the focus is a single country-case study. Thereby, all companies in Russia are supposed to have the same type of power relations with the state, and it is not sufficient to understand the difference in their performance.

A common way to understand and conceptualize business is through its tactics. Overall, they can be divided into two types: political (membership and funding of political parties, support of civil society, etc) and instrumental (lobbyism, membership in business association and communication through informal channels). Most of the research on tactics is done within the corporate political strategies field of management studies and is mainly associated with American scholars. For example, Gerald D. Keim and Carl P. Zeithaml (1986) find that the most common tactics in the US are: constituency building, political action committee contributions (PACs), advocacy advertising, lobbying and coalition building. The disadvantage of this approach is that some tactics play a much bigger role in the US than in Russia, e.g. PACs. Another weakness of this approach is that tactics are usually used by businesses in combination with each other and thus it is not valid for a typology-building goal.

The literature on corporate political strategy or non-market strategies includes attempts to create models and decision trees that explain why different companies act in different ways. Those models include behavioral determinants, actors, timing, degree of involvement, political issues and others. Kathleen A. Getz (1997) divided these components according to the following questions: who (actors involved), why (actors' rationale), how (their methods or tactics), and maps nine theories according to these questions. Amy J. Hillman and Michael A.

Hitt (1999) build a decision-tree model of political business strategy, with three steps: approaches to political action (transactional and relational), levels of participation (individual and collective) and types of strategies (information, financial incentive and constituency building). Even though these authors did not research high tech business in particular, most of these findings are relevant for the current research. They describe so many different factors, that it would be difficult to include them in the typology; however, their findings were incorporated in the fourth chapter on results and discussion, providing more insights into actors' choices.

The last approach to understanding business behavior is to divide it into active and passive. This approach, despite its simplicity includes all the above-mentioned approaches and relevant for the goal of creating typology dimensions. Because of that, this approach was used in this work.

1.2 State Behavior

Since Adam Smith's "The Wealth of Nations" which opened the modern discussion of the relationship between national political power and business, prominent scholars have found that the distribution of state power and the political regime type are determinative of the scope of business influence on politics (Scherer & Palazzo 2011). Political regimes prescribe roles for business and possible forms of interaction. Authoritarian regimes prefer to subordinate businesses to control their revenues and maintain the regime's survival. These types of relations are influenced by path dependency, which makes it hard to change the status quo. This literature is embedded in the broader field of political economy covering the impact of democracy on economic growth. Democratic institutions constrain predatory state behavior and make the

business environment more favorable; political freedom causes economic freedom (Friedman 1962; Sen 1994).

Since Russia is widely seen a country with an authoritarian political regime, hereinafter only literature on state behavior relevant to this regime type is described. In authoritarian regimes both positive developmental and negative predatory behavior occur. Developmental behavior is associated with cases like East Asia, where rapid economic progress was triggered by governments: they formulated an industrial policy in consultation with business and provided capital for development (Gomez 2003). This system is often called "embedded autonomy" where business and the state are closely interrelated (Evans 2012). Predatory state behavior is usually associated with corrupt authoritarian countries (Evans 1989). It happens when the state does not need to see the business as necessary to the regime's survival. Therefore, a business loses its bargaining power in state relations and get trapped in a subordinated position. Another factor is the state control of vital economic resources, in which case "the administration [...] can, therefore, implement key decisions—in particular, implement economic development—without the participation of business groups, which being dispersed are unable to resist local bureaucrats" (Bychkova & Gelman 2014). Division into these two types can be suitable for a typology-building goal even though the developmental state has a very strong relation to the particular history and region. Nonetheless, it seems that these types are mutually exclusive. If the state sees an important business role in society, it would aim to create an "embedded" system. On the contrary, if the business seems insignificant for the state, it would behave like a predator.

State behavior can also be understood through an economic prism. The theory of varieties of capitalism distinguishes two types of state behavior: coordinated and liberal. A coordinated economy is characterized by "corporate ownership, finance, inter-firm relationships and industrial relations" and driven by "relationship-specific assets and long-term cooperation ties"

(Hall & Soskice 2001). In the liberal economy, the decisions are exclusively market-driven, with less social concerns and stakeholders' involvement (Ibid). In the literature, there has been discussion of which type is better for describing the Russian type of capitalism. The general agreement is that it has some components of both so it is hard to draw a clear line between two types (Hanson & Teague 2007). Therefore, it is reasonable to expect that both types can display state behavior. Moreover, this behavior can be easily operationalized which is significant for a typology-building goal. Based on these considerations, this framework was used for explaining state behavior in the research.

Some literature on Russia-specific state behavior exists. Referring to the non-democratic environment of the Russian state, the issue government intervention arises. A great deal of scholarship has been preoccupied with security and preservation of property rights, which are the first ones under attack (North 1990, Olson 1993, Frye 2004). While these have certainly played a critical role in the Russian transition from the Soviet legacy, some authors have emphasized its inability to create a reliable system guaranteeing private property rights (e.g. Markus 2015).

Meanwhile, others claimed that there were a number of impressive accomplishments at least after the 1990s, which established a new quasi-capitalist but nevertheless viable business climate (Yakovlev 2006). However, though Russian political leverage on business has been substantially reduced in recent years, business is still vulnerable to such political factors as sanctions, exchange rate, new legislation on labor rights, private data protection, and taxation (Enste 2018).

Generally, literature covering the 1990s period emphasizes the criminal nature of business survival techniques, weakness of the state, and history of previous relations during the Soviet era (Rutland 2016). Today the Russian state is much more powerful and stable. Regarding the

high-tech industry, there is no threat to business owners like oligarchs posed before, and also there is a lack of previous experience of interaction with the state.

In this framework, it is expected that state behavior differs neither in terms of regions nor in terms of state actors (higher and lower places of state actors in the power hierarchy) but in terms of state's interest in the business and its product.

1.3 Treatment of SBRs and Approaches of their Conceptualization

Existing literature gives us examples of different ways to treat and operationalize the state-business relationship. Some authors choose to focus on the outcome (result) in pro-business government measures. As indicators of outcomes, they choose the impact of reforms in which business was involved: tax-cuts, labor regulation and changes regarding the procedure for opening and registration of a new business (Calì & Sen 2011). In the majority of cases, these results are small, case-specific, fragmented, and controversial from the position of their benefits for society as a whole. An alternative approach is to treat SBRs as a process. It has been used before, although SBRs were called public-private dialogues (PPD) (Sabry 2018) or economic-political networks (EPNs) (Sharafutdinova 2010, 12), meaning ties between government officials and business representatives. They treat the fact of interaction itself as an important indicator of SBRs. In this research, the second approach was used. Another widespread approach to SBR treatment is dividing them into formal and informal SBRs. Connections resulting from familial, tribal or any social basis are likely to develop into informal SBRs between state officials and their connected businesspersons. The same is true for political connections, such as when businesspersons are members of the ruling party or assume official

positions. On the other hand, connections developing from taking part in an institutionalized and formal kind of state–business consultation—such as the ones to be found in economic councils or public-private dialogues - would result in formal SBRs. The distinction between formal and informal SBRs is important for investigating their (possibly) different effects on innovation. Scholars have explored how the type and character of SBRs affect innovations and research. Based on the data of World Bank Government Indicators, Sabry showed that overall formal SBRs support innovations better than crony-based relations (Sabry 2018). Most research describes Russia as a state with a prevalence of informal SBRs, though this does not itself explain the variation in companies' performances and the relatively high level of innovations in comparison to the rest of the world.

The focus on informality is closely related to the issue of trust-building capacities. As Aasland et al. argue, the popularity of informal networks can be explained by the fact that people do not trust unknown people or formal institutions in societies where informal channels are dominating. At the same time, informal networks are popular because people within the network are familiar with each other and thus trust each other. This tradition is difficult to change because the distrust among actors is shaped by recent and historic experiences (Aasland et al 2012). This feature is taken into account as one of the characteristics of the Russian context.

There are different ways of understanding the success of SBRs. Kathuria et al suggest measuring the effectiveness of SBRs by four criteria: SBR private – the process of formation of sectoral business association and communicating through their channels; SBR public – states' presence in the economy through state-owned corporations and state budget expenditures on economic services; SBR practice – bilateral or joint economic councils or institutionalized PPD; SBR collusive – the collusion of the state with a private sector or the selective release of policy and investment information with the exclusion of some actors

(Kathuria et al 2010). They use these indicators not only for tracing SBRs dynamics, but also for evaluating their overall success. The drawbacks of this conceptualization seem to be in their focus on outcomes rather than causes and very strong focus on the active forms of SBRs, neglecting more passive forms.

A significant part of the literature explores whether successful SBRs are the product of bottom-up or top-down approaches. For example, different frameworks were used to understand economic (business) mobilization. Political entrepreneurship theory can be seen as a classic example of a top-down approach where the mobilization is guided by the state and business depicted as a passive follower of the state's will. The theory of bureaucratic modernization through islands of effectiveness expects the possibility of effective governing through the sporadic effect of minor units of the state, who are playing the role of pioneers of reformation and modernization. "Threat theory" describes the mobilization caused by business fears and resistance to anti-capitalist forces and represents a bottom-up approach. To show the complexity of principal-agent dilemmas, Stanislaw Markus developed "debilitated dirigisme", which is a combination of two approaches: the state starts the economic mobilization but the responsibility for its results are on business (Markus 2007). This model does not include the mutual exchange of information, which is essential for understanding directions of modernization for the state, but also increases loyalty and support of the reforms by business. This literature was essential for explaining the sequence of actions in this research and, based on that mapping, the types of behavior according to the typology. Even though this theory was not included in the theoretical framework, their findings inspired the discussion section of the thesis. Generally, the cross-regional approach is very popular for the analysis of SBR types. Based on different strategies of business expansion and market capture, Natalia Zubarevich et al creates a typology of SBRs which includes "regional corporation" formation where a single business dominates; political "domestication" relying on the system of a share of advantages

between the actors (typical for the crony capitalism environment); high importance of the state as an actor and arbiter in the business competition (Zubarevich et al 2010). All these forms point to the high dominance of the state, however they do not explain the difference in SBRs' outcomes for different companies. In addition, this approach is not applicable to the high tech sector, which is mainly concentrated in Moscow, Saint Petersburg and Kazan and modestly represented in other regions.

Existing literature illustrates different attempts to come up with categories of SBRs. SBRs are determined by types of contacts: direct and indirect (Ehrnström-Fuentes & Kröger 2018, Sabry 2018); by the means of achieving their goals: legal or illegal (Pleines 2004); by collective action: consolidated and non-consolidated actors (Berkowitz 2017, Emmenegger & Seitzl 2019); by the level of interactions with the state: federal, regional, local (Sharafutdinova & Steinbuks 2017, Kolk & Tsang 2017); by the resources available to the political bodies: transformational rent, development program, lack of resources (Yakovlev 2006). All these categories are important; however, usually they determine the strategies of a particular actor – state or business – and do not provide an explanation of why some business have more intensive SBRs than others.

Finally, many scholars emphasize the importance of having developed SBRs as they have a positive impact on modernization and society. Business isolation from the state can worsen the regime and even lead to the establishment of exclusively informal channels of interaction through bribery and graft (Bychkova and Gelman 2014). Bureaucrats can jeopardize different rights including property, or big companies can squeeze out smaller ones in the piranha capitalism system (Markus 2015). The presence of monopolies can enforce the rent-seeking behavior of economic actors because the state's communication with individual actors will be limited (Yakovlev 2006). Consequently, the predominant tendency to rent-seeking business behavior would lead to economic stagnation. The benefits of cooperation can be not only for

enterprises but also for civil society as it can enforce the rule of law (Ibid). These findings emphasize the importance of this project and have influenced its section on policy recommendations of this research.

1.4 State-Business Relations Typologies

SBRs can have different patterns and can be built on different components and actor strategies.

The choice of different strategies and behavior by both states and businesses was embedded by some scholars in Albert Hirshman's "exit-voice-loyalty" theoretical framework. These three relation types describe a wide spectrum of interaction starting from dependency and coordination and up to independence, isolation or even escape from the actor's influence. The likelihood of exit increases when the degree of loyalty goes down but also no opportunities for voice are seen (Hirschman 1970). Its application to SBRs can be seen, for example, in the work of Andrei Yakovlev, who used it to explain the history of oligarch's relations with the state (Yakovlev 2014), and Stanislav Markus, who used it for evaluating the security of property rights in Russia (Markus 2012). In its application to the SBR issue, these strategies get a new meaning. In choosing the "exit" strategy a firm is isolated, it can invest abroad or choose informality – that is, operate in the shadow economy (Markus 2012). Political apathy and indifference would be added to the definition of the exit strategy; the only expectation of business in this condition will be that the state will not interfere in its occupation (Gelman 2011). In choosing "loyalty" the firm will cooperate with the state. It can "appease it by monetary payments" (Markus 2012), as well as participate in its programs and enforce its law. It is assumed that this position does not necessarily expect business to have a subordinated position in relation to the state. In choosing the rarely preferred "voice" option, a firm can resist

the state (Ibid). It can organize collective action events for protecting its interest (e.g. property rights) or even advocate for individual benefits or exceptions. Not surprisingly, it is the least preferable strategy for the state, which might see it as the beginning of a public uprising.

As an expansion of Hirshman's typology, *Vladimir Gelman's two-dimensional matrix* was considered. With reference to David Kang, he shows how the difference of SBR patterns can be predicted by the dual character of the state or business' weakness or power position (Gelman 2011). As a result of an interaction, four different types of relationships appear: predatory state, non-intervention (*laissez-faire*), mutual hostages and rent-seeking. In this typology, Gelman focused on cities as a unit of analysis, taking into account regional differences. He could thus contrast cities with weak and strong local administration and show the business's reaction to it. However, in this project, the units of analysis are the state in terms of the federal center, business and their interaction with each other, which means a much broader focus than in the above-mentioned work. Thus, regional differences and certain other characteristics have to be neglected, and thus the categories of strong-weak state are not applicable for this research.

The last theoretical framework that has inspired the theory of this research has been developed by Heiko Pleines. He introduced confrontation and cooperation as dimensions in SBRs. He mentions four types of SBRs: cooperation, legal capture, illegal capture, confrontation (Pleines 2004, 57). The corporation became one of the dimensions of the new typology and capture became one of the key types of SBR patterns. The division into legal and illegal was included in the discussion on tactics.

1.5 Russian political and economic context

The last piece of literature which is important to cover before introducing the theoretical framework is research on specific characteristics of Russia which would influence general theories. The Russian context has three main features which are crucial to understanding the different behavioral strategies actors choose. They make SBRs even more dramatic and unpredictable than usual.

First of all, Russia is characterized as an authoritarian hybrid political regime. As has been previously mentioned, authoritarian regimes prefer to subordinate businesses to control their revenues and maintain the regime's survival. Generally, the state has different resources to dominate in relations, can threaten ownership rights, can intervene in the market and exercise its power under various pretexts.

Secondly, the overall nature of private-public interactions in Russia can be presented as crony capitalism, where a close connection between state officials and economic elites dominates policymaking (Sharafutdinova 2010). Gulnaz Sharafutdinova defines the situation as such:

In crony capitalism, a system based on privileges rather than rights, economic elites must maintain connections to the state in order to obtain and keep their privileges. For political elites, on the other hand, obtaining a state office means getting control over rulemaking, specifically with regard to the ongoing redistribution of wealth. With such high stakes for both political and economic elites, there is a strong inclination to use tricky, convincing methods to obtain victory (2010).

Cronyism is seen by some scholars as an alternative to formal SBRs (e.g. Sabry 2018). There are different views on the impact of cronyism on SBRs. For example, Kang argues that cronyism reduces transaction costs, helps to disseminate better information, comply with agreements, reduce costs, create new opportunities and increase trust, and thereby ultimately leads to economic growth (Kang 2002). This position is challenged by the argument that cronyism simply creates benefits for private interests without innovation and efficiency

promotion, and as a consequence is harmful to the economy in the long run. Business gets “external cost advantages”, which reduce incentives for technological modernization as a means of reducing costs (Diwan et al. 2015). It reduces economic incentives, affects transaction costs and encourages rent-seeking behavior (Ibid).

Lastly, Russia historically has an industrialized economy. Its traditional economic backbones are heavy industry and resource extracting sectors. Their long historical co-existence with the state lead to the establishment of close and stable connections. Another factor supporting these relations was the phenomenon of state-ownership of "national champions" (large, usually monopolistic firms). However, regarding high-tech business, the ownership remains private. The state possibilities for intervention are rather limited and thus the sector is generally less subordinated to direct state influence.

Another difference between traditional sectors of the economy and high tech is the class of oligarchs who manage the giant corporations. Most of the literature on the Russian SBRs was devoted to oligarchs' relations with authorities (Novokmet et al 2018, Barsukova 2019, etc). The main conclusion of this research is the creation of the double standards system for businesses, where the rule of law is applicable only to the least powerful companies. For example, As Ruta Aidis wrote, "in the case of Russia, the oligarch model of wealth creation and industry domination has created a culture where rules do not apply to the well-connected and powerful but are applied indiscriminately to those who do not enjoy this special status" (Aidis 2015). This pattern in most of the cases is not relevant to the high tech sector not only because it cannot ask for the same preferences as oligarchs but also because it can easily escape from the state's sanctions due to the lack of physical assets (at least in the case of IT).

Analysis of existing literature has shown that despite some useful findings, there is a **literature gap**. Previously there was too much focus on big business, which is Russia's case

usually associated with the hydrocarbons sector and oligarchs and focused on the consequences of SBRs rather than on decision-making. Scholars have acknowledged this gap in the literature before. For example, Hanson and Teague mention "the rules of the economic game look to be rather different in different sectors of the Russian economy: between large and small firms, or between the oil industry and the mobile-phone industry" (Hanson & Teague 2007, 153). This research aims to bridge this gap.

In this section, I demonstrated that most of the literature on SBRs focuses on the consequences rather than on causes of relations and tends to view relations from the perspective of one or another actor (the state or business), which makes these typologies biased. In addition, some scholars criticize informal networks, low trust in formal channels, tendencies towards monopolization and crony capitalism, which in Russia's case can be called the given characteristics of the environment. These weaknesses of the existing typologies prove the presence of the gap in the literature and justify the creation of a new SBR typology that accounts for the reasons of the actors' choices in a neutral way and is relevant for explaining specific high tech business interactions.

Chapter 2 – Research Design, Theory and Methodology

In this chapter I pursue the following goals: firstly, I demonstrate my theoretical framework which includes four types of possible SBRs and factors that shape them. Secondly, I develop the conceptualization of the SBR types and introduce theories explaining state and business behavior and their incentives for the choice of different strategies. I determine the appropriate research design, variables and identify the omitted variables and assumptions. At the end of the section, I show the best methodology for testing this typology, which is presented in the chapters that follow.

2.1 Theoretical Framework

To resolve the weaknesses and drawbacks of existing typologies, I suggest a new typology of SBRs applicable to any high-tech sector relations regardless of country context.

The new typology has two dimensions: state and business behavior, which predict the type of relations which occur. The behavior of both actors is divided into two patterns: coordinated and liberal state behavior and active and passive business behavior. These categories are the independent variables of the study.

The dependent variables are the patterns of SBRs, which are the result of a unique combination of business and state behavior, namely, state-capture, business capture, ad hoc symbiosis and coexistence.

The units of analysis are the state (the state bodies and agencies), companies and subsectors of high tech business, their modes of interaction with the state (patterns of state-business relations).

The relative perception of the power of actors was included in the understanding of a SBR pattern, even though it was not the focus of research. Power is measured by the dominant position in the relation, unequal position in negotiations and very often the sequence of action (a less powerful actor has reactive behavior). In the analysis different categories were used such as foreign and domestic actors (based on the location of headquarters and company registration), collective and individual actions (measured by a number of actors involved), formal and informal interaction. Companies were divided into more innovative and less innovative categories, which were operationalized by their expenses on R&D and measures of their results, e.g. by the number of patents and products or services that were new to the market.

Regarding the treatment of SBRs, they were operationalized as a mode of interaction, but not their outcomes. Such an approach does not neglect industry-specific characteristics, nor does it entail an evaluation of government actions and joint projects. Communication or attempts to have such communication are approached as already sufficient evidence of state-business relations.

The suggested typology assumes that patterns can be changed through time if business or the state changes their behavior. This phenomenon is called the "dynamics of SBRs" and is explored in comparison to the SBRs section. Regarding the dynamics of SBR change, SBRs were operationalized as successful and conflicting. Successful change of SBRs is one that is mutually beneficial and voluntary. The conflictual one is associated with the dissatisfaction of one or both sides with the change. The typology is based on the assumption of rational choice theory (Olson 1965, Weingast, 1996), which means that both businesses and state bodies make

their decisions individually and rationally based on available information, calculating potential costs and benefits of their decision and aim to make the best choice of action for them. The analysis is conducted according to an expectation that companies do not have political ambitions and their SBRs are determined by economic logic but not political or ideological preferences. This research cannot explain the cases when companies are guided by ideology alone, because, in that situation, I expect the occurrence of other sets of factors influencing actors' decision-making and causing discrepancies in the suggested framework and theory of economic rational behavior.

The summary of the typology matrix is depicted in Table 1. The definition and conceptualization of the proposed categories are presented below.

Table 1. Typology of state-business relations

		State behavior	
		Coordinated	Liberal
Business behavior	Active cooperation	State-capture	Ad hoc symbiosis
	Passive adaptation	Business capture	Coexistence

2.1.1 Conceptualization of state and business behavior (independent variables)

State behavior dimension

Coordinated state behavior describes the situation when the state has a deep involvement in the sector and intervenes in business affairs. One of the potential indicators of this behavior is the number of *regulations* in the given segment. The motivations for this state behavior can be different: the strategic importance of the segment; the state can be the main client of the particular business product; fierce competition between Russian and foreign companies where the state wants to implement protectionist measures and import substitution policy; etc.

Liberal behavior describes the opposite situation where the economic sectors have less regulation, the presence of the state in the market is limited, the products and services are not affected by social security concerns and entrance to the market is easy. It is important to highlight that this behavior cannot be explained by the degree of competition in the market itself, so the number of market players involved in the economy does not matter for the choice of state behavior.

Business behavior

Business behavior in this typology is divided into passive or active. The indicators of business behavior are *capacities (resources, know-how, networks, experience, etc.) and their usage* and the *will* to have more cooperative SBRs.

Active cooperation is the type of behavior often driven by rent-seeking incentives. Business is conducting contacts with state representatives to influence regulations, get special material benefits, increase its reputation, or get guarantees of business survival.

Passive adaptation is a passive strategy of basic compliance with the existing rules or minimal communication with the state in order to keep the status quo.

2.1.2 Conceptualization of SBRs patterns (dependent variables)

All the dependent variables below are listed in descending order of the degree of actors' involvement, starting from the most involved SRB type (state capture) to the least involved (coexistence). Capture is an umbrella term that describes conditions of asymmetrical relations with the dominance of one or another actor. The asymmetry happens due to differences in the power of actors in specific circumstances.

State capture

State capture can be described through the system of political capitalism. In these relations "the economic elite influence the government's economic policies to use regulation, government spending and the design of the tax system to maintain their elite status in the economy" (Holcombe 2015). The political elite gets the necessary resources and additional non-market benefits which help them to hold power. Thus, relations are mutually beneficial. They are achieved through illegal (bribery) and legal (lobbyism, party financing or political action committee (PAC) contributions)² channels. However, this relationship puts a limited number of companies in a privileged position, which in turn creates additional barriers for other excluded businesses.

Business capture

Business capture is the condition when business and the state have regular interaction and exchange of information; this interaction is essential for both actors. However, its difference from state capture lies in the pattern that this interaction is forced by the state; without

² Lobbyism is not regulated by law in Russia unlike e.g. the US. Nevertheless, it is not prohibited.

interaction, the company cannot remain in the market segment. This dependency on the state can be explained by the high degree of regulations in the market, or by the state acting as the main client of business products and services.

Ad hoc symbiosis – business or state can establish contact with another actor to have closer SBR, but this cooperation is not essential for either actor, which can lead to the temporary and less stable character of these relations. The initiative of more intense relations can come from either state or business. It is supposed that relations remain rather equal and dominance is avoided, unlike state capture and business capture types. Exit from ad hoc symbiosis type to the coexistence type is easy, which ensures the equality of interaction.

Coexistence is the type of SBR in which both actors have the very minimum of interactions with each other. Generally, business strategy can be called “compliance with the rules”, which includes such activities as registration of a legal entity, payment of taxes, obtaining licenses, obeying government decrees³, *inter alia*. This typically means the obedience to the existing legislature for business without making attempts to influence it. In this regard, the state provides the regulation, however, it does not intervene in the functioning of the economy.

2.1.3 Assumptions and omitted types of SBRs

Confrontation as a type of state-business relations

Confrontation usually is led by business because it happens when the government changes its attitude to the sector by intervening through the creation of a new regulation or other methods. Confrontation is a transitional type of SBR; it results in two types of SBR: coexistence or business capture. Confrontation has a unique set of business tactics: protests,

³ For example, The Ministry of Labor and Social Protection of the Russian Federation has issued new recommendations on the implementation of anti-corruption measures in organizations at September 18, 2020. All the companies are obliged to present guidance on their attempts to prevent corruption in the organization.

media campaigns, legal suits, etc. Since this is a transitional type of SBR, it has a temporary character. This type of relations is not included in the research because it cannot be explained by the dimensions of the typology. For example, the Telegram campaign against sharing the private data of users with political authorities was not analyzed in this study.

Non-interference or isolation is treated as an impossible type given general fiscal state politics and resulting inevitable pressures on firms, in addition to the authoritarian political regime and crony capitalism system of political economy. There is no doubt that sometimes companies can get some aspects of these relations, for example, in case they operate in the shadow economy or keep their assets offshore. Nevertheless, this type is rather a deviant than an ideal type of SBR and, along with the confrontation, type cannot be explained by the dimensions of this typology.

2.2 Hypotheses

Given the introduction of a new typology, the empirical analysis tested proposed four categorical types of SBRs – state-capture, business capture, ad hoc symbiosis and coexistence, and whether they are shaped in particular by state (more or less intervening) and business (more or less active) strategies. So, the research hypothesis is that the proposed typology is a correct reflection of the reality of these relations.

This research is not only testing the new typology, but also finds determinants of actors' behavior. Several hypotheses below list potential factors influencing the choice of different strategies for both the state and business.

As was mentioned earlier, a more innovative business is more demanding. Thus, *the second hypothesis is that the more innovative a business is, the less cooperation with the state there is* (passive adaptation business behavior emerges).

Given the ad hoc type in typology indicating the temporary character of interaction, I expect some dynamics of changing SBR patterns. Because of the authoritarian context and great power of the state, the third *hypothesis is that the dynamics happen in two directions: state behavior shifts to coordinated over time, business behavior shifts towards passive adaptation over time.*

As has been proven in the literature, collective action of business can achieve bigger results than individual action. The fourth *hypothesis is that collective action can be triggered by both the common threat and the common good, and these are equally desirable in the business community.*

The last expectation is that the composition of market players, especially their origins, determine state behavior. Given protectionist policies in Russia, which became even stronger after 2014, the fifth *hypothesis is that the state behavior becomes coordinated when there are a lot of foreign companies in the market.*

2.3 Methodology, Data Collection and Analysis

The method of research was 2-dimensional conceptual typology-building. This method included two steps. The first step was concept formulation (Collier et al 2012). In the second step, I defined building blocks of the typology. My overarching concept became state-business relations, then my focus became state behavior and business behavior which were specified in my row (active cooperation and passive adaptation business behavior) and column (coordinated and liberal state behavior) independent variables (Ibid). After that, I addressed the plausibility

and coherence of the dimensions as they relate to actors' relationships. After that, the cross-tabulation (matrix) was made with a 2x2 array. Cell types became dependent variables which define particular patterns of SBRs. Their conceptual meaning derived from their positioning in the matrix. As most of the terms for these patterns are taken from existing literature, their comprehensive definition was additionally specified in the conceptualization section. To establish clear "ideal" types without concept stretching and overlapping, two techniques for compressing property space were used: logical and pragmatic compression (Elman 2005). Logical compression included the creation of mutually exclusive SBR patterns such as state capture and business capture. Pragmatic compression was neglect of contiguous cells like confrontation or other in-between forms of interaction that occur when actors change their behavior (Ibid).

In-depth interviews were the means of constructing the typology. The in-depth approach allowed going through the trust-building stage with further effective exploration. Furthermore, it allowed going from more abstract questions to more specific ones. The main method of data collection was field research in the biggest centers of Russian IT – Moscow, St. Petersburg and Kazan. The choice of the destination was made based on the fact that the majority of the company's head offices are located there. There were no regional differences observed between the cities because the focus of the research is not the communication of companies with city administrations but rather their attitudes to the state itself, recent reforms and national-level policies.

In total, twenty-one interviews were conducted. Another reason for the choice of this method was that insights into behavior and decision-making logic can be accessed. The time range of conversation varied from 30 to 90 minutes. Interviews were conducted through two waves of field research. The first one took place in September 2019 in Moscow and Saint

Petersburg and the second one was in February 2020 in Moscow and Kazan. Respondents were divided in four groups: 1) leading IT companies in the field of cybersecurity, 2) IT companies involved in software development, its installation and maintenance, 3) leading Russian and foreign companies in the field of biotechnologies and pharmaceuticals and 4) nanotechnologies represented by residents of "technoparks" and special economic zones such as Skolkovo (Moscow), Innopolis (Kazan) and the ITMO technopark, the leading IT university in Russia (Saint Petersburg). Respondents were mostly government relations specialists; however, several CEOs and IT specialists have also participated. The state was represented by the city administration (e.g. Department of Entrepreneurship and Innovative Development of Moscow), city halls (e.g. Innopolis city hall), managers of special economic zones, universities involved in IT education (ITMO University, University of Innopolis, Skoltech) and the agencies that work closely with business and technology promotion (e.g. Russian patent, National Qualifications Development Agency, etc). The last group of respondents were business associations and professional organizations of high tech businesses. Overall, the sampling of respondents was based on their relative weight and position in the market. Due to the sensibility of responses, the list of respondents is anonymous. To ensure respondents' privacy and ethics of data collection, the respondents were asked to consent to recording of the conversation. Legal guarantees of securement of the records were provided upon request.

All interviews were semi-structured. They started from broader questions such as "How can you characterize your relationship with business or the state? Do you cooperate? What are the boundaries to cooperation?" and further were focused on particular topics relevant to the respondent. These topics cover the broad scope of fiscal policy, law, industry regulations, eProcurement, special services, special economic zones, subsidies, recent reforms of the Internet, intellectual property rights and cybersecurity initiatives.

The data analysis was interpretative. Transcripts of the interview were analyzed in terms of common patterns of causality, explanation attitudes, argumentation, concerns and activities which push actors to choose one or another strategy. A great deal of attention was paid to issues like the actors' perceptions of each other – either seen as a partner for cooperation or as an obstacle or threat, the sequence of actions – business or the state was the first to start cooperation or passive coexistence, boundaries and misunderstandings – what were actors' possible grievances.

For analyzing results, the qualitative data analysis software MAXQDA was used. It assisted in supervised methods on topic assignment, which makes it easier to search for similarities and differences in responses. Among its advantages are public availability and wide application in the scientific community.

Limitations of this method were that the results of this project are not generalizable for the whole economy due to the industry-specific differences and small sample size.

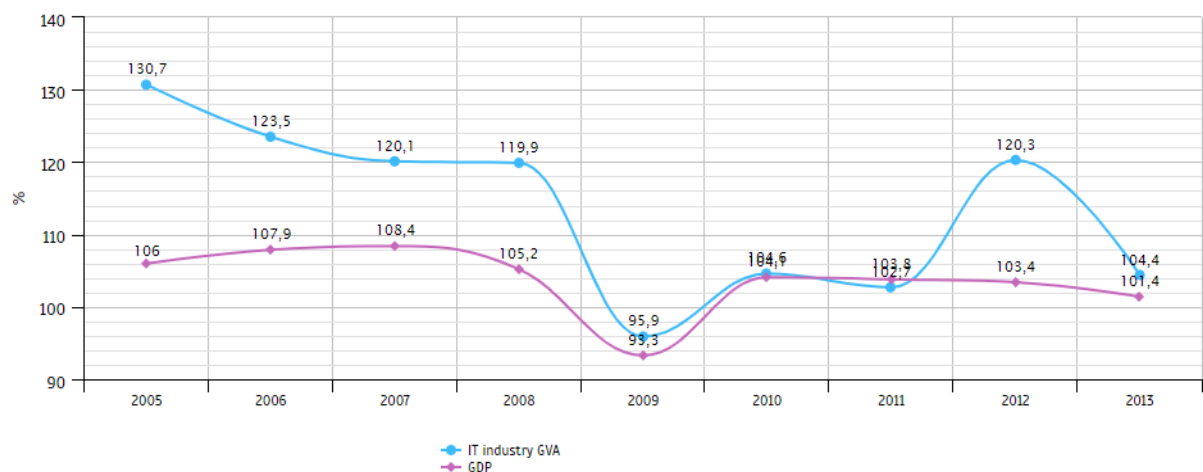
2.4 Features of the Russian High tech and Population of the Case

Russian high tech business becomes a more and more important sector of Russian economy. According to an HSE report on indicators of innovation in Russia (2019), the most innovative sectors of the economy are IT - 31.9% of total innovations, Biotech - 31.6% and electrical equipment - 24.5%. According to the same HSE report on indicators of innovations, the volume of innovative products, works and services for the sector of telecommunications, computer software development, consulting services in these areas and other related services

and information activities technology (at current price level) is 111,254.6 million rubles (approx. 765.9 m USD) (Ibid).

HSE estimates shared by the Ministry of Digital Development, Communications and Mass Media of the Russian Federation proves that the IT industry is responsible for significant gross value-added and generally underperforms only in times of crisis and economic shocks (Figure 1).

Figure 2. Dynamics of IT industry Gross Value Added (GVA), as a percentage of the previous year



Source: Ministry of Digital Development, Communications and Mass Media of the Russian Federation, <https://digital.gov.ru/en/activity/statistic/rating/it-otrasl/>

Appendix 1. summarizes the general position of Russia in terms of its business environment, innovations, startups output and government effectiveness in comparison with other countries. Overall, it shows that Russia has good potential and resources but it is lagging behind developed countries in terms of the strength of its institutions and economic freedom.

It is hard to estimate the population of the case, although rough approximations can be made. According to the Federal State Statistics, there were 66,632 IT enterprises in 2013 Russia (more recent data is not available). Among them there are 69 large companies, the most famous

of which are Kaspersky Lab, InfoWatch, ABBYY, Yandex, Acronis, Mail.ru Group. In addition, Russia has a chain of business incubators and special economic zones. There are 2,374 startup-residents in the Skolkovo innovations hub in Moscow and 85 residents in Innopolis in Kazan.

The Biotechnologies market has a much smaller number of enterprises than IT. The most successful Russian companies involved in the creation and production of innovative biotechnological vital and essential drugs are R-Farm, Biocad, F-Synthesis, Generium, Geropharm, Omutninsk scientific experimental industrial base and others (Frost & Sullivan 2014). Based on these facts, it can be said that the overall population of the case is around 100,000 enterprises where the most influential players are not more than 100 companies in total.

2.5 Literature Contribution and Relevance of the Project

The objective of the project is to bridge the literature gap by focusing on a particular growing sector of the economy and with a look at government approaches to it. This project seeks to distinguish determinants of actors' behavior in order to create tools for explanation and prediction of state and business actions towards each other. This research underlines existing obstacles to cooperation and helps to find ways to overcome them to produce useful information to both state and business. In addition, this research defines the reasons why the capacities of actors do not always transfer into practical behavior and why they choose what appear to be harmful strategies. This project hopes to open an avenue for further research the

findings of which are generalizable to the possibilities of innovation-oriented companies' experience in non-democratic environments.

In Chapter 3, I introduced four types of SBR: state-capture, business capture, ad hoc symbiosis and coexistence. These types are the dependent variables of the research, which can be explained through such independent variables as business behavior – passive adaptation or active cooperation – and state behavior determined through the degree of its involvement and intervention in the subsector of the high tech business.

The contribution of this research is seen in the introduction of a new typology that has explanatory capacities as it describes all the possible categories of state – high tech relations without prioritizing and taking one side's standpoint.

Chapter 3 – Empirical Findings

Chapter 3 covers the main empirical findings of the study in terms of business behavior, state behavior, SBR types, and how real cases and practices are distributed in the typology. The chapter finishes with a comparison of the types and explanation of similarities and differences between them. All variables are examined, with insights into actors' motivations, constraints for action, and a brief evaluation of the likelihood of conflicts within the SBR type and its frequency.

3.1 Business Behavior

In terms of business behavior, the most reliable predictors are a reaction to the state's actions, macroeconomic situation, costs and benefits approach, and industry-oriented values.

Reaction to coordinated or liberal state behavior seems to be the most common explanation of business behavior. Self-initiated action is extremely rare. This, as is explained in the next subchapter, is strongly related to the high tech subsector and is explained by the context. The presence of a high or low degree of regulatory burden, appeal of state's subsidies and tax reductions (if they are available for the subsector) and other factors distinct to state behavior affect how businesses respond.

The overall economic situation, including increase or decrease in demand and purchasing power very often determines business behavior, e.g. economic recession makes business look for closer relations with the state. Some businesses even adapt to unfavorable conditions by changing their business model, products or services in order to sell

those to the state. In times of stagnation, the demand for expensive new technologies falls. As several respondents noticed, there was an economic slowdown in Russia which became noticeable for people approximately at the end of 2017. More companies tried to have state contracts instead of B2C sales, as this model seemed more reliable for them. As a result, those companies adapted their products and services exclusively to meet the state's needs. An interviewee mentioned that before the economic slowdown, IT specialists were changing jobs relatively often, while in the last three years everybody was much more likely to keep the jobs that they already had and do not challenge this state of affairs. This means that the economic slowdown brought job market stagnation in addition to other consequences. Change of the business model and as a consequence change of SBRs was seen as a solution to defend the company from the less stable and predictable market.

Closely related to this factor, cost-benefit analysis plays a significant role in determining business behavior. Business analyzes which strategy would be the most beneficial and reasonable in terms of expenses and follows that strategy. The results of this analysis vary across the cases determined by the company's product, reputation, size, networks, etc. For small companies that have used B2C before and see a high demand for their products in the market, the costs of working for the state are usually higher. As an IT-developer mentioned: "I will earn much quicker in the market, where with the state I can spend a lot of time and effort but even then the result is not guaranteed" Meanwhile, for companies that have the resources to realize large-scale state projects, B2C seems to be less reasonable: "State always has much bigger contracts. And also, private clients are very price-sensitive and demanding, they always complain about the costs of each element of work and want to minimize it, often unrealistically."

Size and networks play the same role in SBRs, and both can be a substantial substitute for one another. Small companies that have necessary networks can perform as well as large companies. While this might be relevant for all businesses, this is especially common in the high tech sector, where sometimes a small number of employees can create valuable innovations of high interest for the state. For example, it was a case with one company-resident of SEZ that developed technology of traffic analysis using data from road cameras. despite the fact that only two people were working on this technology, *siloviki* (national security organizations) became interested in the projects and planned to use them throughout Russia. The access to networks provided by SEZ contacts in addition to the quality of the product itself made such a close SBR interaction with active cooperation business behavior possible. What is more, size can lead to both types of business behavior: active cooperation (because a business has more resources) and passive adaptation (business do not need to come up with new non-market strategies to win a competition). Because of that, size is not an essential factor for determining SBRs, which contradicts findings in the existing literature.

A history of the foundation and roots of the company may be decisive for the choice of business behavior. Despite the perception that the high tech sector has had a shorter history of cooperation with the state than other sectors of the economy, there are some subsectors that were developed on the basis of old sectors. This is certainly true in the case of the information security subsector. A notable example of it is the story of the founder of Kaspersky Lab, Yevgeny Kaspersky. He got his education in the Higher School of the KGB and started his career in the firm of his former lecturer from this school, so one can expect that he kept some contact with Russian intelligence agencies and was inclined to cooperate with the state (Kramer & Perlroth 2012).

Some companies (and it was more often than one would expect) are driven by their enthusiasm and industry-oriented values. These altruistic incentives define the active cooperation business behavior. Industry values are here understood as any measures that affect all the companies within the subsector equally and potentially make the competitive environment in their subsection fairer. One of the reasons for this is the bad experience of business competition in the 1990s and the beginning of the 2000s. As the head of one business associated commented on the motivations for business to participate in the association, "in the nineties, we lived like in the jungles in the environment of wild competition. People do not want these practices to return." Another possible explanation for industry-driven values is the expectation that in the long-run, the company itself will benefit from a more developed industry regulation and higher standards. The common practice is that the company raises its standards (e.g. standards of employees' safety) and then will promote these standards as a part of new regulation for all companies to ensure that adopting better practices will not affect their competitiveness:

Our CEO has always been interested in how the industry is regulated and wanted to participate in the process of creating this regulatory environment. If a company focuses on high standards, it implements them in the company and strives to implement these standards in the entire market, for all players. The higher the standards on the market, the fairer the competition and we defend ourselves against competitors who produce low-quality products.

3.2 State Behavior

Regarding state behavior, current findings support the relevance of the following factors as the state's attitude towards subsector, the size of the market, and the desire to reach international recognition and prestige.

State behavior is usually dependent on the subsector, namely, the salience of the innovations and products which are created in this subsector. This has been especially the case of biotech or info security sectors. Companies that belong to those subsectors have a strong impact on the social sphere (population, welfare programs, etc.) and contribute to the achievement of long-term development goals. They are also strongly connected with the issues of national security, which proves the state's high prioritization of them.

The presence of foreign companies in the market activates protectionist coordinated behavior. The state is willing to intervene in sectors of the economy to create tangible privileges for Russian companies and barriers for foreign companies. This pattern of behavior becomes especially relevant after import-substitution policies were introduced in 2014. This case was exemplified in the state capture SBR analysis later in the chapter.

Speaking in broader terms, the supply side of the market seems to matter a lot for the choice of the state's behavior as well. The higher the overall number of players within the subsector is, the more likely coordinated state behavior and overregulation are. The small number of companies in the subsector (which might happen due to the lack of resources for the development of that particular subsector domestically) removes the initiatives for the state to heavily regulate it since this potential regulation will not have any substantial effect.

This finding is counter-intuitive and at first sight contradicts the market economy theory, stating that state intervention is unnecessary (or even harmful) in markets with many players, as the market will regulate itself (through the market's "invisible hand"). Meanwhile, the small number of players in the market would threaten to create conditions for oligopoly and state intervention would become necessary. However, it is important to understand that this theory is relevant to well-developed large diversified economies. Russia is a middle-income country with significant dominance of resource extracting sectors and weakness of other sectors. That

is why it can hardly be explained by this theory. If the Russian state had more resources, it would intervene in all sectors despite the number of players. However, in reality it has to prioritize and focus on subsectors that play a more noticeable role in the market. The sectors with a limited number of players do not usually turn into oligopolies as the lack of products is mostly substituted with import.

These two observations have a conflict situation when there are not many players in the subsector, but also foreign companies are present. In that case, the state has liberal behavior and removes restrictions on foreign companies. This is exemplified in the observation of a GR specialist in a foreign medical equipment company, who stated that "in the field of healthcare, the pharmaceutical industry is overregulated, while the medical equipment industry is less regulated. The medical equipment industry is underdeveloped in Russia, the machinery technologies are old and inferior to foreign technologies. Thus, a very limited number of local companies can compete with foreign ones, so there is no real need for overregulating this field".

The last potentially important factor for understanding state behavior is its **desire to reach international recognition and prestige by showing to the world the strength of the Russian economy and its technological and innovative output**. A respondent from the IT sector mentioned that government is looking to find companies that it could present in international trade shows like EXPO and is likely to support these companies. Another respondent mentioned the state interest in the position of Russia in the international indicators: "Russia needs to raise the economy from its knees. The government strongly supports small and medium-sized businesses. The percentage of development of SMEs is the index by which the overall development of the country's economy sometimes is determined. Of course, the state wants to raise its position in such ratings."

3.3 State-Business Relations Patterns

The collected data shows the existence of all proposed types of SBRs in Russia. Table 2 gives examples of cases and ways of thinking of actors in all four types of SBRs. The cases are analyzed further in detail starting from the most involved for both sides type of SBRs (state capture) and finishing with the least involved (coexistence).

Table 3. Quotes from interviews describing different SBR patterns

State capture	“At the beginning of the Digital Economy program, which aimed to involve business in the state, the state gathered all the major IT businesses and said: ‘Collect your wishlist and let us know in 3 months.’ Eventually, the program was rewritten 4 times, but the first version was good because it was written by the representatives of the business itself.”
Business capture	“I believe that any company operating in the social sphere or with the public sector should have GR due to existing risks. Monitoring and risk mitigation is our primary responsibility in the company”
Ad hoc symbiosis	“All our communication with state bodies - and there were many of them - did not bring us anything except for PR and noise. We have participated in a lot of consultations, meetings, round tables, but nothing came to real action after them.”
Coexistence	“It is much easier to work with small companies, with medium ones, than with large ones or especially with the state. It just appears that huge companies do not worry about big-sum contracts. In fact, they are very meticulous and very demanding. We had many projects when, with the same complexity of tasks, large companies paid less than small companies. This did not necessarily happen as part of the competition or e-Procurement. We will make more money faster in the market than with the state.”

3.3.1 State Capture

This type describes a rare type of interaction when a business takes control of the state using different pressure techniques (lobbyism, media involvement, bribery). State capture happens on three levels of interaction: business' attempts to affect 1) legislature, 2) implementation of the legislature, and 3) get individual exemptions from the implementation of the legislature. Commonly, a business will try primarily to make an impact on the first (the highest) level of decision-making, and only in case of failure, it would change its focus on the lower levels.

Consensus-building among players

The most successful strategy of state capture is finding a consensus among businesses in the whole sector and performing unified collective action with joint efforts. This type affects the state's decision-making on the highest level, the legislature. The combined power of businesses can change the state's decisions. In the Russian case, the cases when a consensus was reached were very successful and lead to the change of the state's policy. However, as the theory of collective action problem (Olson 1965) predicts, there are a lot of barriers towards shaping consensus. Evidence from the field research includes several reasons for the missed opportunities for performing a collective action targeting the state. Among them are divergent interests and views, a free-riding problem, lack of resources, the mode of market competition which is the background of all inter-sector ties, poor mobilization techniques, and small experience of general relations with the state. For example, one of the respondents roughly estimated that professional SBRs in the high tech sector started only six years ago. Generally, when such cooperation occurs, it is usually aligned with events that are perceived as a beginning of crisis or a big threat to the business's existence as such.

A GR-specialist from InfoWatch said that the first time when IT business got consolidated and collectively addressed its problems happened in 2014. In this year new legislation on taxation was proposed by the minister of communications, Nikolai Nikiforov. His proposal included the creation of a special fund of 10 billion rubles (approx. 133 m USD) designed to support and finance the development of domestic software. The resources of that fund were based on 10% taxation of working capital of Russian and foreign IT companies. In the beginning, President Vladimir Putin approved the proposal. However, the businesses themselves were strongly against it. It saw it as a backslide to the planned economy with an intransparent redistribution mechanism favoring inefficient companies and bringing the risks of corruption as well as the potential of significantly harming working capital, which is essential for firms' self-development. The expected "picking winners" state behavior would deeply undermine the equality of state-business relations and put a business in the subordinated position for an indefinite period. All these considerations, as the interviewee remembers it, motivated companies to collectively protest and finally, as a result of that, the proposal of that legislature was retracted.

Another attempt to act collectively and build consensus was in the light of import substitution policy. As the previous example, it started in 2014 as a reaction to western sanctions. Most media coverage at that time was devoted to counter-sanctions on imported food products and assistance for the development of national alternatives, although it was not the only area that sanctions have affected. Import substitution logic spilled over to high tech business as well. While the market itself was not affected because of limited opportunities of the state to intervene and restricted foreign high tech products, the state still changed its behavior as a client. The new regulation was introduced which stated that even though foreign companies could still participate in the state e-Procurement system, the foreign company would be automatically rejected from the competition if two or more Russian companies were

participating in the same competition. The state would choose from one of them despite the price and quality advantages of the foreign company. Not surprisingly, this regulation met a negative reaction from the business side. That collective action was mostly led by foreign companies with a limited number of exceptions among Russian companies (which were mostly benefiting from the new regulation or were indifferent to it), and that was the reason why that action was a failure in the end.

Foreign companies

Despite the small number of foreign companies that remained in the Russian market after the mentioned regulation, generally, I characterize their SBR type as a state capture one. After their failure to change the legislature (the highest level), most of them are interacting with the state in order to get an individual exemption from unfavorable law and continue their operations in Russia.

Sometimes companies have a perception that they are forced to use corruption techniques. The target of corruption is not necessarily the traditional authority or government member as may be expected. For example, a GR-specialist type foreign medical company has confessed that an important part of their GR work is the maintenance of stable and loyal relations with medical experts who are involved in the development of medical recommendations. When the state creates a new regulation, it refers to those recommendations as a justification of the list of medicine and medical equipment that the Ministry of Health is required to use in state hospitals. Therefore, those medical experts have enormous power over future state procurement of biotechnological goods. Through both bribery and better GR communication, foreign biotech companies reach the state capture type of interaction. As some respondents mention, the state itself looks for an excuse not to follow import substitution legislature: "They in the government understand that it is better to buy a product that has been proven for more than ten

years on the international market than to buy a domestic unfinished analog that has existed for a couple of years". In this situation, the GR departments of foreign companies must present reports and statements proving that their products are better than Russian alternatives and cannot even be put in the same category with them. This communication function is very important. As another GR-manager from the Russian Biotech company said, "The state lacks the expertise to make decisions from various fields and our task at GR is to provide them with this expertise."

Overall, this type is highly successful and very rare. It can be called successful because it is non-conflicting, and both sides – business and state – benefit from it. Nevertheless, there are a lot of conditions that have to be met to make this type of SBRs come into existence. Among those factors are reaching consensus within the industry (collective action) and/or necessary business capacities. What is more, it takes a lot of time-consuming efforts for both sides, which makes it difficult and limited in terms of the expansion across different companies.

3.3.2 Business Capture

The business capture type describes close interaction between the state and business, where business cannot exist without interacting with the state due to the high regulation of the market or in the case when the state plays the role of their main client.

Biotechnologies

Biotechnologies and pharmaceuticals need to have the business capture SBR type, as they operate in a strictly regulated subsector of the economy. In addition to this limited room for maneuver, they almost always see the state as the main client. Sometimes they can pursue B2C strategy too, although mostly it refers to the non-innovative type of pharmaceuticals: fake drugs, diet supplements, and the pharmaceuticals which Mazzucato calls "me too" drugs (2013,

62), meaning companies which produce slight variations of existing drugs without R&D. In addition, revenues from private customers are not comparable with the revenues from state contracts. Because of that, both actors have a clear understanding of the potential benefits of their cooperation. Not only do benefits determine close interaction, but also the simple survival of the company in the market is dependent on this cooperation.

Export-oriented companies

An interest in foreign clients and focus on export-oriented operations are very common in innovative high tech due to higher demand and purchasing power abroad. However, the Russian state discourages companies from having foreign clients and exporting their products. One of the key mechanisms for this is interference with international payments and foreign exchange controls. As a resident of the ITMO technopark mentioned, “to sell abroad from Russia is almost impossible. The state wants to control everything, everything that is possible. Foreign exchange control is a classic administrative barrier”. To work with foreign clients and have transactions from abroad, the company has to open a foreign currency account and a transfer account in a bank⁴. When transferring, the money is placed firstly in the transit account. Then, the company must provide documents to the bank, justifying the payment within 15 business days. Still, the bank has the power to refuse to transfer payment if it finds problems with documents or doubts in the contract and the foreign client. What is more, if the contract exceeds the amount of 3 million rubles (approx. 40 thousand USD) for import contracts and loan agreements and 6 million rubles (approx. 80 thousand USD) for export contracts, the contract must be registered with the bank.⁵ This means that if business plans to maintain its

⁴ Russia has state banks (state’s share in bank’s capital exceeds 50%), banks with state participation (the state’s share in the bank’s capital is from 15% to 50%), and private banks. Top-5 largest banks of Russia in terms of assets are state banks. This factor emphasizes the state’s ability to intervene in business operations through banks. However, the foreign exchange control and other associated with it restrictions are applicable for all banks, including private (OECD 2005).

⁵ More information can be found in bank policies, for example: <https://www.bspb.ru/business/settlement-service/docs/pamjatka-po-valutnomu-kontrolyu.pdf>

focus on the export of its technologies, it has no other choice but to have the business capture SBR. State's intention to control these companies and discourage them possibly can be explained by its concerns about technology drain, by creating too much dependence on foreign capital and become vulnerable to a foreign power.

Information security

All the interviews with information security representatives showed a more pro-government passive attitude than in other sub-sectors. Respondents tend to justify the state's policy even though it is harmful to the company itself. For instance, Kaspersky lab lost a significant part of its clients abroad (especially in the USA and Ukraine) after 2014. However, during the interview focusing on this critical juncture, they answered that the Russian foreign policy response was justified. In addition, all the information security respondents who participated in this research had a positive attitude towards Russia's "sovereign Internet" reform. Moreover, they actively participate in a working group on the digital economy program (<https://digital.ac.gov.ru/>), where information security is one of the major priorities and focuses.

Sometimes, the most successful and world-renowned information security companies have issues regarding barriers to functioning abroad and having foreign clients, which were mentioned previously. However, these companies usually find resources on how to change state positions on a particular barrier. For example, the respondent from InfoWatch recalled the case when they pushed the government to develop a legislature on international factoring, which would help the company to operate abroad.

The reason why these companies and the state go for business capture is strong networks with the state security bodies which have significant coercive power. Another reason is

ideological coherence: companies do not want to have active behavior and challenge the state, as they support most of the state policies.

Nanotechnology and disruptive innovations companies

Nanotechnology is a high-risk investment. Ambitious technologies require huge investments, while the risk of business failure is extremely high. Nanotechnology is a type of business that creates disruptive innovations, namely it creates a new market rather than meeting current market needs. For example, Yandex develops technologies of driverless-cars and has been testing them in the Innopolis city zone for four years. At the current stage, driverless-cars have not taken over conventional cars and these technologies take a long time to develop. Nevertheless, they will determine the future. Despite their promising potential, there are both risks that technologies will not be commercially successful or even that technologies will not be created. State support for this subsector is essential, as traditional VC is not ready to take this risk (Mazzucato 2013).

Special economic zones: Skolkovo and Innopolis

One of the most representative cases of business capture is companies that are residents of a special economic zone. The most important advantage of joining the SEZ is what Mazzucato calls "less tax and red tape" (Mazzucato 2013, 55). As respondents repeatedly confirmed, the most important expense for a high tech business, especially for IT, is payroll. This happens because there is a shortage of IT specialists in the market due to the small number of good educational programs in the field, big emphasis on experience (employers can hardly employ fresh graduates, they need at least to launch internship programs where they will teach them particular skills), and the relatively small number people who are in this field due to the complexities, high costs of education and other factors. The highly skilled and scarce labor force demands very high salaries, which are accompanied by high taxes for social security

contributions. In Russia, conventional social security contributions are 30% while residents of SEZ have to pay only 14%, which is a very significant saving for the business, especially in the seed stage. The red tape benefits are more ambiguous in the Russian SEZs because usually they are arranged on an individual negotiation basis. Nevertheless, some respondents noted that the status of an SEZ resident allowed them to ask for some exceptions from the regulations in different spheres, for example, the opportunity to hire foreigners with a simplified working visa procedure.

These benefits are not granted for nothing. Instead, based on the SEZ agreement, a business usually takes on a few obligations. It needs to present a long-term business development plan which includes the prognosis for growth and profit evaluation. These numbers are usually quite tricky, since based on them the state forms its expectations, and if business underperforms and does not reach promised indicators, the state can initiate some monitoring and inspections or even launch some sanctions against them. Another factor which becomes a barrier for some companies is the obligation to invest a pre-discussed and pre-agreed sum in the development of the business, such as rent costs, salaries, purchase of equipment and resources, and different kinds of allowances and benefits for employees. As an interviewee from Innopolis technopark mentioned, the reason why businesses sometimes fail to fulfill their business plan target is the divergence of initial expectations and real profitability of the company. This explanation is confirmed by literature, stating that Russian companies almost always had a bad experience with monetization and commercialization of their products (Graham 2013). In case the business did not fulfill its obligations, it would be charged a fee equal to 5% of the sum which was not invested (if there were some investments done, the invested amount would be deducted from the promised amount and interest on this amount would not be charged). After that, the company would be given a second chance to retain its resident status and would have to provide a new business plan stating new goals and plans for development.

Furthermore, the phenomenon which was characterized by a few respondents as "grant eaters" fits in this category. This name is used for people who apply for state grants often and see state contracts as a lifeline of their business. Most of the time, these companies cannot rely on the market itself because they produce inferior quality products. In academic terms, this type defines companies with rent-seeking behavior. Despite the harmful impact of these activities one might expect, respondents related that their companies had not been affected by this phenomenon. Firstly, because they can always rely on the market itself and thus see the key to their success in market competition rather than state support. Secondly, in the case when "grant eaters" participate in the same completion with them for a state project, the "grant-eaters" are likely to lose it anyway, since most of the time they have the inferior product. Finally, overall, these companies are the minority in the market. Their number tends to grow when the state expands its programs, although they are not enough to change the industry landscape. What is more, the state itself sees this problem and tries to discourage this behavior when it decides on grant distribution even though this does not always work.

Related to these rent-seeking companies is the particular type of "company mediators" that participate in the state e-Procurement system, win the competition for state contracts but do not fulfill the obligations themselves. Instead, they find subcontractors to satisfy the contract. Through this role of mediator, these specific companies get most of the profit and do only the bureaucratic paperwork with the state. It is important to emphasize that most of the time subcontractors have the coexistence type of SBR, and their case is discussed in that subchapter.

Overall, the business capture type can be evaluated as a successful and relatively common one. There are some conflicts and misunderstandings between the actors, but nonetheless most of the time a solution is found. Further evidence that business capture conflicts are not devastating and this type can be perceived as successful is that business and state respondents in this type have a very neutral perception of the opposite actor. Both business and state see

each other as partners for negotiation, even though sometimes these negotiations happen at different levels, with a tendency towards state domination. Nevertheless, companies that have their GR office and have regular interaction with the state or companies which fulfill their obligations under SEZs are generally satisfied with their SBRs. This unique equilibrium can be explained through the mutual dependency of actors. Another aspect that is particular for this type is that the state often plays two roles: as a rules-maker but also as a client of the product, which leads to "double" business capture. As a consequence, only close SBRs are possible for a business in this sector if they want to remain in the market.

3.3.3 Ad hoc Symbiosis

This type describes joint incentives of any kind which are not essential for business survival and usually temporary. It is important to emphasize that both the state and business can initiate this type of interaction.

Projects devoted to human capital development

A significant part of state-business interactions is associated with the human capital development program, especially education. High tech companies constantly express their grievances about the shortage of properly trained workforce and the poor quality of, for example, IT education. Sometimes it forces companies to develop their educational programs (e.g. Yandex academy), organize hackathons, and use internships as an educational tool. Only Innopolis University and ITMO University are seen as the ones that produce a decent level of IT knowledge. That is why even businesses which do not usually cooperate with the state have become more proactive (the active cooperation business behavior) in order to solve the problems related to education. Several respondents mentioned how they tried to collaborate with the state and proposed educational initiatives.

Nevertheless, according to the state agency on the development of qualifications, IT businesses seldom participate in their monitoring, and generally do not contribute to the development of professional standards. As the agency claimed, IT companies have the capacity to solve the education problem without state involvement. Another reason is the inability of the state to provide well-designed solutions for highly skilled IT professionals (which is not always the case in other sectors), which explains the lack of cooperation between two actors:

Large IT companies have good opportunities to solve their problems individually, they do not need to perform collective action. For example, Yandex can afford to develop its own educational system [...] unlike, for example, the oil and gas sector, which of course has a lot of money, but at the same time, there is much less intellectual potential there. In the oil industry, let's say, 80% of ordinary employees, 10% of middle management, and 10% of senior management. And 80% of employees are somehow "manufactured" at universities. While in IT it should all work a little bit differently, some more complex non-linear mechanisms should work.

Mostly the agency organizes an examination for employees of different sectors and this examination does not evolve. Sometimes based on this examination, some courses and training are organized, but they usually straightforward and do not require serious preparation (e.g. Health & Safety). When the interviewee referred to "more complex non-linear mechanisms" for IT, he meant that they would need to create in-depth training, sophisticated evaluation of performance, and examination that would be significantly evolving as new software emerged. At this point, they do not have the resources to meet these IT needs.

Projects devoted to the digital transformation of business and government bodies

In 2014 the government announced a digital economy program, the goal of which was to get business involved in policymaking and to encourage digital transformation. Since then numerous meetings, round tables, conferences, and forums took place including the most distinguished Saint Petersburg International Economic Forum (SPIEF) and East Economic

Forum in Vladivostok. However, decisions that were introduced in the highest levels of the power hierarchy are not necessarily understood and implemented at the grassroots level. Miscommunication within government branches and hierarchical issues can be illustrated by the legal tech respondent's experience with his attempt to use the opportunities created by new government policies regarding providing access to the data on court statements. Despite the official ruling, the promised measures existed only on paper:

The government announced that courts would create APIs with their data and would provide access to them. For us it was a great opportunity: using predictive analytics we could know which cases are more likely to win and then our lawyers can adapt accordingly. In reality, APIs were not created or if they were, they did not want to give us access to them. As far as I know, they did not give access to anyone, because they were afraid that it has some confidential information.

Another case of failure of a government modernization project seems to be when the program has low priority for the government body and a lack of commitment to the joint project. Different respondents mentioned their experience of being ready to create some tech solutions to the state which in the end took too much time to be realized or were postponed for an unclear amount of time⁶:

One regional administration invited us to create for them an automated legal portal for citizens, which would increase the quality of legal protection. We spent a lot of time and effort to make a presentation for them, mock-ups of the future product, and concept development. And in the end, government bodies did not react to that.

Overall, the ad hoc symbiosis type is usually rare and unsuccessful. This is a paradoxical conclusion as symbiosis generally means positive, mutually beneficial, and successful collaboration. However, even though it can be expected to be different in other countries, in

⁶ It is hard to estimate the reasons for postponing these projects. In this work, it is claimed that the core of it is the low priority of these projects in the state's decision-making process. However, other explanations can be found. For instance, the respondent, who faced this problem, saw the roots of it in the absence of responsibility of state workers and fear of them to make a decision. He claimed that "the whole bureaucratic system is designed the way that it discourages people to be responsible for their decisions". However, this research does not have enough data to prove this argument.

the Russian case all the good initiatives very often do not get realized, actors failed to produce something new, and both of them get mutual growing disappointment with each other. That is why conflicts arise and I call this type unsuccessful.

What is more, this negative experience shapes the negative perception of actors by each other, the disappointment has a cumulative effect. Ad hoc symbiosis relations are usually used as a point of reference in the future as a legitimization of non-collaboration with business or state ("coexistence" SBR type). Generally, business actors when they decide to have this type of SBR most of the time confuse it with state capture, at least, they expect a relatively similar outcome from their actions; however, they lack resources or support from the industry to achieve their goal. Because of that, their expectations never get realized and disappointment arises. Regarding the state-led initiatives, the state often tries to organize events to help business. However, it seems like they do not have full information about business needs and thus its projects do not find support from a business that does not see their usage and goal. This is a truly negative tendency because people who get involved in this type of SBR are usually very optimistic and enthusiastic about the opposite side but often have a difficult time leading that proactive energy in the right direction. In the long run, the failure of this type shapes more passive business behavior in SBRs.

3.3.4 Coexistence

This type describes the least possible amount of interaction between business and state.

Less innovative IT businesses

Most of IT can be described as less innovative, and provides basic services such as apps and websites creation, CRM and data collecting and analytical tools installation, IT office maintenance and support. These companies usually have the coexistence type of SBR. They

believe they are completely isolated from the state (even though they have to obey the law). Besides that, they do not see opportunities and fields of cooperation with the state which would be beneficial for them.

This pattern of relationship applies not only to the state's programs, grants, and other initiatives but also issues related to public goods, for example, education. As a respondent from the biggest IT companies in Kazan said, they never tried to hire students who graduated from the Innopolis university, which is supposed to be one of the best IT universities in Russia. He explained that students are not interested in their company, and most of the time their goal is to move abroad or at least to Moscow, so all the government efforts in Innopolis seem to them meaningless at least from the corporatist point of view.

In addition, the subcontractors mentioned earlier in the case of company mediators fall into this category as well. Even though technically they implement projects for the state, they do not interact with it, which makes projects for the public sector functionally identical to projects for the private sector.

Less innovative biotech businesses

Non-innovative companies are present in the biotech subsector as well. Among them, there are "me too" drugs, bioactive and vitamin supplements and fake drugs. Non-innovative biotech companies focus on the marketing side of the business. They are involved in advertisement and promotion of drugs including TV and radio commercials, entertaining events and presentations for pharmaceuticals' employees and doctors (ensuring they will be loyal to their product and recommend it to the patients) and distribution of merchandise products. They do not follow the B2G model and focus on the B2C model. The Russian context makes it also easier for them, as a lot of medications in Russia are over-the-counter and people generally are very reluctant to go to hospitals and prefer self-treatment.

This type is successful because conflicts do not arise, and for many companies, this type of SBR is perceived as the most agreeable one. The negative side of this type is a deep-rooted perception that there is nothing potentially valuable in closer SBRs. And even though sometimes companies shift from this type to the ad hoc symbiosis type, this movement is quite rare.

3.4 Subsector Comparison

Based on the analysis of interviews, it can be concluded that types differ in terms of actors (subsectors) involved in the given type, duration of interaction, resource requirement, strategy and tactics. These differences are displayed in table 3.

Table 4. Comparative characteristics of SBR patterns

	Actors	Resource Requirement	Duration	Tactics and Forms of Interaction
State Capture	Foreign companies, large companies reached consensus	High	Temporary	<i>Formal:</i> Political action committee (PAC) contributions (if applicable), GR <i>Informal:</i> lobbying, forming coalitions, bribery, media involvement ⁷
Business Capture	Biotech, nanotech, SEZs residents, export-oriented firms	Relatively high	Permanent	<i>Formal:</i> GR <i>Informal:</i> lobbying, forming coalitions
Ad Hoc Symbiosis	Companies involved in professional education, in projects of the state's modernization, state's monitorings and surveys	Relatively high	Temporary	<i>Formal:</i> consultations (e.g. policy analysis, participation in round tables, state's surveys) <i>Informal:</i> advocacy advertising
Coexistence	Non-innovative companies, most of IT	Low	Permanent	<i>Formal:</i> Compliance with the rules <i>Informal:</i> isolation, fraud

Active cooperation business behavior requires resources. This is the expected and intuitive finding from the *resource requirement* pattern. As expected, when business takes an active position it has to contribute more resources of different kinds (capital, time, networks) to exercise its active strategy. The most “expensive” type is the state capture, when business in a

⁷ Here I draw the line between GR and corruption (bribery). Even though some treat these two strategies as identical, different respondents of this research several times emphasized that they are not involved in corruption even though they worked in GR. Furthermore, I distinguish lobbying from GR. Sometimes these two strategies intersect although more often companies see them differently by understanding GR as a more formal approach and lobbying as a rather informal approach.

way is put in the condition of a zero-sum game and is willing to have monetary expenses (in case of bribery), time resources (in case of coordination of collective action) and others so it could overcome the crisis situation. The lowest resources are required by coexistence type.

The less intuitive finding is that subsectors of high tech business have consistent alignment with a particular type of interaction. This finding is indirectly supported by the literature on political corporate structure. For example, Hillman and Hitt (1999) mention such variables affecting specific decisions for political business behavior as 1) degree to which firms are affected by government policy; 2) product diversification level ("if companies are concerned with limited industry domains, they will have a narrow focus on political issues"); 3) firm or collective's resources. All these variables seem to be approximately the same within one subsector and thus companies' behavior will be similar. For example, pharmaceutical companies from the biotech subsector would have approximately the same amount of products, average price (and thus the same resources), and vulnerability to the same regulations when compared with an IT company that produces software or nanotech company that produces robots. There is no doubt that some variations are possible within the subsector, but their differences are not as striking as differences between subsectors. In addition, this comparison is made with the focus on success stories, thus the low profitability of some companies is not taken into account.

As was mentioned earlier in the methodology section, interviews were focused on particular *spheres and topics* which were relevant for respondents. Based on general estimation, it was observed that within the same high tech subsector these topics were the same. In the *Biotech subsector*, companies interact with the state regarding e-Procurement, contracts and relevant regulation and then negotiate conditions of being included in the state's catalog (registry), as it is a crucial condition for getting a state contract. In the *Nanotech subsector*, taxes (especially

social taxation), regulation (especially the rules of membership and participation in state's grants and SEZs), and human factors such as white-collar migration and brain drain were the main issues. Key topics for the *information security subsector* were regulation (especially private data protection), the recent reform of sovereign internet, general lack of expertise and understanding of information security among bureaucrats. For *non-innovative IT* such spheres as currency control, international finance (e.g. international factoring), and human capital (especially education, and brain drain) were important.

Another counterintuitive finding from this comparison is that *tactics* are not a relevant indicator of business behavior. For example, business capture and state capture unexpectedly have rather similar tactics behind them, with the minor difference of bribery and media involvement tactics in state capture. It is possible that the outcomes of relations would be a better indicator of the SBR pattern but in this research SBRs are treated as a process, and thus, this statement cannot be made. An alternative differentiation between tactics and their correspondence with SBR type are the incentives behind business and sequence of actions. In the passive adaptation, business reacts to the state's actions and mitigates the risks (unless those risks are perceived as a fundamental threat or crisis - in that extreme case behavior will be active cooperation). In the active cooperation, business takes the first step and tries to appeal or challenge the state. However, tactics might be the same in both situations. Additionally, despite the existing literature stating that informal relations prevail in Russia, empirical evidence shows that companies use both formal and informal tactics in all SBR patterns. Finally, as most of the characteristics in this comparison, tactics are strongly influenced by the socio-economic and political context and might vary in different countries and different political regimes. For example, PAC contributions do not seem to be a popular tactic in Russia, whereas in the US they are one of the most widespread (Ansolabehere et al 2003, Hillman et al 2004).

There is also a variation of types in terms of their *duration*. Despite the expectation that the suggested typology is stable, small dynamics happen within the types. Both state capture and ad hoc symbiosis are usually temporary forms of interaction. More specifically, the reasons for the change of SBRs and the sequence of actions are explained in subchapter 4.3. The potential explanation of different duration of SBRs is an authoritarian Russian regime that has the power to restrain business from state capture relations and that is skeptical about businesses' active behavior, even in the case of ad hoc symbiosis when business is generally pro-state and pro-regime.

In Chapter 3 the analysis of in-depth interviews revealed that the typology is relevant for describing high tech relations with the state as the companies and state bodies cases correspond to suggested types. The investigation of business behavior has shown that, generally, business reacts to state behavior and the economic situation. It can be guided by self-interest (cost-benefit analysis) or altruistic motivations (industry-oriented values). Regarding state behavior, it has been found that the state has specific behavior towards specific subsectors, but not to individual companies. It pays a lot of attention to the supply side of the market as well as the consequences for its international image when it develops strategies. The analysis and comparison of SBRs showed that all types differ in terms of subsectors, the duration of relations, resource requirements, tactics, and forms of interaction.

Chapter 4 – Results and Discussion

In this chapter, I shed light on the general patterns of behavior that this typology suggested and draw some conclusions. A potential explanation of uneven distribution across the cases is proposed concerning both state and business behavior. At the end of the chapter, the dynamics of changing patterns are analyzed and the possible reasons behind them are explained.

4.1 Business Behavior

With respect to business behavior, contrary to expectations, this study found that **the more innovative a business is, the closer its relations with the state are**. Most of the high tech companies have the business capture type of relations and the rest have the coexistence type. This uneven distribution of the cases across the types of typology indicates that, generally, business has passive adaptation behavior in Russia. State capture and ad hoc symbiosis, which are associated with active cooperation behavior, are almost always temporary types of interaction. Thus, **more active business behavior is a prediction of much shorter interaction with the state**.

Both patterns of innovative business dependency on the state and passive business behavior can be explained by the Russian political and economic context. An authoritarian political regime creates a dominating position for the state in business relations. The state has numerous resources to restrain proactive business behavior (bureaucratic and administrative barriers, monitoring, licensing, etc.), even if this behavior is not related to challenging the regime. Moreover, issues of insecurity of property rights are always in the back of business owners' minds. Cronyism likewise reduces incentives for business to have active cooperation behavior,

as privileged companies have secured their positions through networks and thus additional efforts are unnecessary. The companies which were not part of the cronyism system have such a low chance of entering it that active behavior is uncommon as well.

An additional explanation of the pattern is the availability of state rents and weakness of the market. These factors motivate companies to rely more on state contracts than on market forces. Companies have a hard time finding customers for their innovative technologies as they are usually expensive and therefore there is no demand for these technologies and insignificant purchasing power, especially at the key moment when these products are launched in the market. There is no doubt that the price of technologies gradually goes down as time goes by. However, companies that gained technological leadership have first-mover advantage and create barriers for other companies to enter the same market niche, and thus the price decreases slowly.

As a middle-income country with underdeveloped venture funds, high tech businesses in Russia do not see stable and high demand for their products. In the long run, this might change, however, at the current stage the Russian state is seen as the most reliable client and supporter of their technologies and innovations. It is worth emphasizing that in different countries and circumstances this distribution of cases across the types is likely to be different.

Legislature on taxation is a universal concern for all subsectors. It unites actors despite their differences and may trigger collective action. All innovative companies in Russia are eligible for significant tax reduction, for example, 14% for social security contributions. Unsurprisingly, companies are ready to have close SBRs with the state to make sure that these tax cuts remain in place. More importantly, in situations when the government plans to raise taxes, high tech is ready to act collectively as it is crucial for business survival and continuation of R&D for most of the companies. Besides taxation, the possibility of some

exemptions from the rules, state's rents and rare chances of influencing the regulatory framework can be other motivations for collective action.

4.2 State Behavior

Regarding state behavior, the state usually has more coordinated behavior towards more innovative business. As was shown in Chapter 3, within the IT sector, the state intervenes in nanotechnologies and companies developing new software (coordinated state behavior), and the state neglects non-innovative IT and subcontractors (liberal state behavior). The same pattern can be noticed within the biotechnology subsector: the state creates strict regulations for more innovative pharmaceuticals and medical equipment companies involved in R&D (coordinated state behavior) while only the mechanisms of market regulation without state presence determine the environment for fake drugs, "me too" drugs, and supplements (liberal state behavior).

There are several reasons for coordinated state behavior. Firstly, the state is the main client of innovations and thus it has greater power over business. Secondly, state intervention helps to control an innovative process that has a strategically important role in the future of the state. Lastly, the companies that contribute to innovations are large or they have great potential for growth in the future. Thus, it is easier for the state to coordinate the economy and its future development by controlling these companies.

When the state is the client of a business product, it is more demanding than private business. This is a natural consequence of asymmetrical relations when there is a monopsony. Bureaucracy, inspections and monitoring, complicated paperwork, deferred payments for the contracts, and insecurity related to the potential sanctions (e.g. fees) are all the side-effects of

having the state as the only client. The important detail is that this kind of behavior is typical for single-time projects. Big business that continuously has large contracts with the state (for example, some biotech companies maintaining state hospitals) usually enjoy somewhat different state attitudes and behavior.

When the state has the motivation to support business, it tends to imitate the private sector and venture funds. The example of this case is the department of entrepreneurship in the Moscow city administration. The department satisfies the criteria for the "islands (pockets) of effectiveness" concept.⁸ However, they still have a limited impact on the business environment and do not contribute to the spillover of efficiency to other branches as is predicted by theory. Their main recent project was Technograd – the complex of the physical infrastructure of the renovated VDNKh complex, which became a platform for different businesses to organize their workshops and other educational programs. In the interview, an employee from the department told me that recently there were a number of similar projects coming from the private sector. "The key difference of Technograd from those projects is that it can be called an ecosystem. The visitors of our center can find courses in different spheres of entrepreneurship as well as different levels of proficiency. So, no matter if you just think to start your own business or if you are already a mature entrepreneur, you will find something useful and interesting for yourself". However, respondents from the department admit the fact that this project is commercial, and generally it is crowding out the existing private sector by imitating it rather than creating something new.

In regard to venture capital funds imitation, common practices in the SEZs can be mentioned. A useful example is the government requirement for residents of the Innopolis SEZ

⁸ They have a competitive HR process, measure KPI and other indicators of efficiency, have numerous employees who previously worked in the private sector, and who are younger than in other government branches. Besides that, they have the necessary monetary resources and successful projects from the standpoint of their completion and realization. (These criteria are taken from Leonard 2010).

to provide a five-year business plan with an estimation of the payback period. There is no doubt that some strict requirements (e.g. competitive selection process) are necessary to prevent rent-seeking behavior and grant-seekers, but perhaps an expectation of immediate profitability of the company (a feature of the venture funds) is not realistic. The direct consequence of companies' profitability requirements in Innopolis was that some companies were forced to relocate their business and products to Western Europe and the USA, where there was an immediate demand for their innovations. This has helped these companies to fulfill the state's requirements and show the viability of the innovative technologies. However, other countries benefited from their products and technologies rather than Russia that invested in those technologies.

As Keynes says in the *"The End of Laissez-Faire"*: "The important thing for Government is not to do things which individuals are doing already, and to do them a little better or a little worse, but to do those things which at present are not done at all" (1926, 2010). There is, therefore, a definite need for some adjustments in the state's approach towards high tech business. The first and most evident would be a better system of anticipating how some state projects would in the long-run crowd out high tech business and then restrain those projects in the early stage.

4.3 State-Business Relations

The typology presented in this research defines the ideal types of SBRs; however, these types are not static. By treating SBRs as a process (as has been mentioned in Chapter 2), I can explore the dynamics of companies moving across the types. In fact, based on the interviews, two patterns can be found. The most common one is when a business changes its behavior, while the state behavior remains the same: 1) from coexistence to ad hoc symbiosis (and in the

opposite direction); 2) business capture - state capture (extremely rare change). The change of SBRs due to changes in state behavior is hardly ever present. State behavior shifts only in one direction: from liberal to coordinated. When the shift happens, it inevitably leads to confrontation and business resistance. As an InfoWatch respondent reflects on the history of IT relations with the state, "in Russia, the state was not interested in IT for 20-25 years and it was good for business. However, this changed 6-7 years ago. Nowadays the industry spends a lot of energy working with the state, it feels like IT wants to tell the state: "Let us breathe!".

As was stated in the previous chapter, collective action can bring a temporary change of SBRs when the whole industry can reach consensus and act in a united matter. However, this behavior is usually induced by a crisis situation and motivated by risk mitigation. It can be a reaction to the new legislature but not an initiative. Another case of this change of behavior happens among foreign companies operating in an import-substitution political context. Through intense GR or corruption, they can temporarily achieve the state capture type of SBR. Nevertheless, it seems that most of the time they still have the business capture SBR type, operating in a very constrained environment.

The logic behind the coexistence – ad hoc symbiosis movement assumes that enthusiasm motivates companies to have closer relations and forthcoming disappointment leads to a return to the status quo. The successful shift to the ad hoc symbiosis is almost exclusively associated with a scenario when business experiments with its products and treats the state as a client.

The findings of such shifts of behavior can be explained by Albert Hirshman's "Shifting involvements" argument, which he initially developed for explaining the reasons behind changing priorities of people between private and public interests (2002). Hirshman noticed that people get frustrated with self-focused lifestyles over time and want to belong to something bigger and more moral than personal satisfaction. It leads to the public involvement of

individuals (Ibid). Then lasting public participation brings the feelings of the powerlessness of individual efforts and the small impact of individual actions which generates the rise of disappointment and it eventually leads back to self-focus and private concerns (Ibid). This pattern is similar to the ad hoc symbiosis dynamic, which describes a circular behavior as well.

As has been stated before, the ad hoc type is usually characterized by failures of joint-projects. This discrepancy of enthusiastic expectations and modest results could be attributed to simple misunderstandings and miscommunications between the actors. They rarely have a clear understanding of the reasons for and potential benefits of cooperation. Most of the cases in the ad hoc symbiosis type are projects when the state invites businesses to modernize state bodies or when business is given a chance to contribute to the legislature. In the first case, the state has a low priority in such projects. Business usually wants to be at the forefront of innovations because of the pressures coming from a market competition, whereas for the state such pressures do not exist. The problem behind business participation in lawmaking is the high probability of the state neglecting business proposals.

Concluding Remarks

The aim of the present research was to examine types of SBRs and get insights into the choice of the particular behavior of actors. This study has identified four types of SBRs that are relevant for the high-tech sector: state capture, business capture, ad hoc symbiosis, and coexistence. This study has shown that due to the authoritarian political regime, availability of state's rents and weakness of the market, more innovative businesses tend to have close relations with the state. Related to this observation and explanation, the tendency toward or the prevalence of passive business behavior was noticed. The second major finding was that state behavior is the same for all companies within a subsector of the high tech business. The behavior itself is determined by state evaluation of the strategic importance of the business's product and innovations and their long-term impact. The most obvious finding to emerge from this study is that a typical barrier to cooperation between state and high tech business is misunderstanding and miscommunication.

This work contributes to existing knowledge of state-business relations by providing a new typology that proved to be relevant for explaining high tech business relations with the state in Russia and has the potential for further generalization of SBRs in other authoritarian regimes. The research design was innovative for this field as it proposed the approach of subsector comparison rather than regional, national, or time-series comparison of SBRs. This thesis has provided a deeper insight into the roots of misunderstanding between actors, their motivations and constraints.

I foresee a *potential criticism* of this research in the limitations of the theoretical framework, method limitations, and empirical findings analysis. In the case of the theoretical framework, some can question the goal of the creation of a new typology specifically

describing the high tech business. However, the uniqueness of the rising high tech sector of economy and gap in the literature defined in the first chapter prove that an attempt to create a new typology was necessary. In terms of methodological criticism, some can find the sample not essential to make claims about the whole high tech sector and suggest explanations. Especially, it might seem problematic to distinguish more-innovative - less-innovative companies because the line between them in the high tech business is very vague. Nevertheless, the ability to reach out to interviewees from the most representative companies, government bodies and BAs gave me the chance to propose general patterns of behavior based on their responses and experiences. A potential criticism of empirical findings analysis might include a notice that the distribution of cases is not even; more than 80% of companies have business capture and coexistence SBR types. In this regard, there is an expectation that the distribution of cases is strongly subject to political regime type and can vary in different countries.

Notwithstanding the potential criticism, the findings of this study merit *further research*. With regard to directions, some propositions can be made. Given that this research is a small step towards a more holistic understanding of high tech interactions with the state and SBRs in general, directions of further research might address the limitations of the given work. The first direction is related to political regime limitations, namely, authoritarianism. This typology can be tested in other authoritarian regime countries to understand the robustness of the results, and then can be compared with the results from democratic countries. The expectation here is that the more authoritarian a regime is, the more passive business behavior is, combined with the overall tendency to fall into the business capture category. In more democratic regimes it is expected that more companies could pursue the state capture type more often. In addition to this, the tactics and forms of interaction are going to be different in different political regimes. For example, in more democratic regimes the PACs would be a key tactic to reach state capture, while in authoritarian regimes it can be bribery.

Another direction that can bring a better understanding of typology is the relative power and volume of the state's resources, such as the size of the state budget and availability of subsidies. That research will be even more informative if it is accompanied by a comparison with relative development of the market and degree of national capital accumulation. It can be expected that in the countries with limited state resources and developed markets there will be fewer incentives for businesses to have proactive behavior and for the state to have coordinated behavior. Presumably, under these conditions, most of the companies will have the coexistence type of interaction with a very limited or even completely missing ad hoc symbiosis type as the business side will not benefit from cooperation.

The last and most important direction of further research is associated with the main propositions that the more innovative companies are, the closer their relations with the state are. Collecting more data and using quantitative research will help to support or contradict this finding, which was done on a small sample. Based on these suggestions, it can be concluded that further research needs to be done.

This research has a number of *implications* in terms of potential recommendations to both state and business representatives. For the state, the general recommendation would be to support long-term innovations and reduce pressure on companies to produce immediate results and profitability. The key difference between state investment and private investment is the state's opportunity to support long "blue-sky research" (Mazzucato 2013, 61) and innovations which will not be profitable in the short-run. Even though they carry high risks, they have a great potential not only to become profitable in the future but also to change the understanding of whole industries, reshape and redesign the markets and significantly modernize day-to-day life (Ibid). That should be the main guiding principle for the state's support.

The second recommendation to policymakers is to change the tactics and approaches of communication with high tech business. The common misperception that state representatives share is that high tech business does not need the state or has enough resources to solve its problems without the state's involvement. The interviews showed that this is not a case. The best illustration of this misunderstanding is a professional education and human capital issue. High tech companies have to retrain their employees because the universities do not provide the necessary level of knowledge and skills. However, the cooperation between business and state is very limited in this field. High tech business does not use already existing state agencies developing professional standards because those agencies are used to working in overly linear, standardized, basic way. Developing a wide spectrum of educational programs with a strong focus on skills development and real job tasks could be a potential solution.

Another issue where the state needs to change its approach is the typical problem of bureaucratization and paperwork. It is a big burden for any business, including high tech. In the recent past, the state has made some attempts at automation and digitalization of some business-related operations to reduce its complexity. For example, the company registration procedure was significantly simplified and was positively received by businesses. However, all the previous measures did not have a systemic approach. For example, even though nowadays it is relatively easy to register a company in Russia, the procedure of closing the company remained very unwieldy and time-consuming. This brings additional barriers to the natural business operations cycles and limits the positive impact of existing improvements. Accordingly, systemic thinking, flexibility, multi-channel approaches, and orientation to long-term results of the state's support are key recommendations.

Several recommendations can be made for business as well. First of all, if a business is uncertain which strategy it needs to pursue or how to build a relationship with the state, it needs

to consider to which subsector it belongs, what innovative potential it seeks to achieve and who is the main client of its products - is it a B2G or B2C/B2B sales model. It is important that resources available should be taken into account but should not be decisive factors since different channels of having close relations with the state exist and not all of them require significant resources. If the company does not belong to a highly innovative subsector and can be more profitable without state contracts, it should pursue a coexistence type of relation and also try to avoid ad hoc symbiosis type. The second recommendation is about tactics of interaction. Interviews showed that the most consistent, reliable, and successful, as well as relatively simple, strategy is the exchange of information. Even for foreign companies that pursue the state capture type more often than local companies, the exchange of information remains a basic strategy. Companies can achieve a variety of benefits by sharing their expertise in the industry and products with authorities. It does not mean that businesses should reveal confidential information or constantly provide highly technical overviews but rather use facts to substantiate business' claims and suggestions regarding the legislature and its implementation. Accordingly, the main recommendation for business includes relying on the subsector of the industry in determining their corporate political behavior and focusing on information exchange tactics.

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Appendices

Appendix 1. Russian position in the international ratings and indexes

Index name	Position/Result	Explanation
Business environment		
The WB Ease of Doing Business (2019)	28th out of 190	The Russian economic environment has a positive record of the capabilities of getting electricity, registration of property and enforcing contracts.
Index of Economic Freedom (2020)	61.0 points out of 100	Russia is a predominantly non-free economy
Business Environment Index by the Economist Intelligence Unit (2019)	67 th place out of 82	There are barriers to foreign investment, sanctions, protectionist economic policy and general consequences of the last financial crisis which resulted in economic stagnation.
International Bank for Reconstruction and development Enterprise survey (2019)	55,4% of firms in Russia spend on R&D, which is twice higher than Europe and Central Asia average and 48,3% of firms introduced new products or services to the main market.	
The Bloomberg Innovation Index (2018-2019)	25 th place in terms of high tech density, 51 st place in an account for productivity out of 105	
Startups		

Blink Startup Ecosystem Rankings (2019)	15th place out of 100	Human capital and technological knowledge are strong and developed in Russia, which makes innovations more likely to happen. However, there are geopolitical risks that make it much harder to expand business abroad and integrate with the global economy.
Governance effectiveness		
World Governance Indicators (2018)	50.96 % out of 100 for government effectiveness, 31,73% for regulatory quality, 20,67% for the rule of law, 21,15% for the control of corruption.	

Source: This table is the author's compilation based on the sources of The WB Ease of Doing Business (2019), Index of Economic Freedom (2020), Business Environment Index by the Economist Intelligence Unit (2019), IBRD Enterprise survey (2019), The Bloomberg Innovation Index (2018-2019), Startup Ecosystem Rankings (2019), WGI (2018).