

**Studies on the Agricultural and Food Sector
in Transition Economies**

Andriy Matyukha

**Business groups in agriculture
Impact of ownership structures on performance:
The case of Russia's agroholdings**



Leibniz Institute of Agricultural Development
in Transition Economies

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by
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Halle (Saale), 1 October 2014

Andriy Matyukha

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1 INTRODUCTION

1.1 PRELIMINARY REMARKS

Since the collapse of the Soviet Union, Russian agriculture, like a majority of other sectors of the economy, experienced a radical institutional transformation. It was deemed that Russia would adhere to the Western practice of small private farming, e.g. WORLD BANK (1992), however, as the state enacted privatization and liberalized the prices in early 1990's, unexpected and new forms of farming emerged. The agroholdings or "new agricultural operators", as coined by RYLKOJOLLY (2005) rapidly integrated and amalgamated the former state (sovkhozes) and collective (kolkhozes) farms into colossal agro-industrial food complexes. The name "agroholding" stems from large agro-food businesses being involved in agriculture and holding a majority of its charter capital stock. The latter – "new agricultural operators" was obtained due to new firms being, de facto, outsiders to prime agriculture, and whose main involvement in the agribusiness was motivated by mere portfolio diversification and, thereof, a risk reduction. In essence, they were and are massive industrial integrated business groups whose core activities range from food processing and trade, to energy, finance, and metallurgy, e.g. SEROVA (2007), WANDEL (2007).

The Russian agro-food sector adapted various types of integration: vertical (backward, forward, balanced), horizontal, conglomerate, as well as hybrid, consisting of all of the above forms¹. Principal differences, however, exist concerning the scale of integrated structures (size of operated land, labor, capital, and number of involved agro-food enterprises), the degree of legal or economic dependence and/or interdependence, e.g. WANDEL (2007), between the holding company and agro-food subsidiaries/affiliates, either down the supply chain (production, processing, retailing/wholesaling) or within the framework of a huge agricultural project e.g. agribusiness involved merely in poultry production and grain storage.

¹ An agribusiness which started as a massive agricultural horizontally integrated project conducting poultry operations, after several years decided to integrate upstream and/or downstream, purchasing a massive silos farm to serve as a storage facility for its grain, and/or buying off its processors and retail chains to whom it supplied its poultry meat, and other finished, ready for consumption goods, e.g. DMITRI RYLKO (2010) (see Chapter 5).

The controversy of integrated business groups, simultaneously comprising a wide array of industries and swiftly reviving in Russia, since the 2000's until now drew vast attention in the West, as such corporate structures are rare in the agro-food sectors of developed economies where the dominant forms of agribusiness are privately owned family farms. Therefore, a myriad of questions were raised with respect to *raison d'être*, operational capacities, capabilities, legal, political and socio-economic impacts of the phenomena, and future developmental prospects of such massive integrated agribusiness projects. Due to a lack of quantitative empirical data, the development of agroholdings was, thus far, examined by questionnaire conduct, e.g. AVDASHEVA (2007). Some theorists utilized the theoretical framework of the Institutional Economics to explain the situation, e.g. KOESTER (2005). Other scholars proposed individual case studies, e.g. (WANDEL, 2011). There exist few attempts to conduct quantitative analyses using farm-level data, estimating the efficiency of farm membership within agroholdings, as well as reasons for their ubiquity, e.g. HOCKMANN et al. (2005), (EPSSTEIN et al., 2013). Nevertheless, because of data scarcity, the analyses are based only on a narrow sample of member firms and regions.

1.2 OBJECTIVE AND HYPOTHESES

Due to the absence of legal and structural backings with neither an existing law clearly identifying the phenomena, nor publically available transparent consolidated financial reporting within the integrated structures in Russia's agricultural sector, it is a widely accepted fact that even qualitative data, portraying the picture of the agroholding subsidiaries and/or affiliates, are scarce, e.g. WANDEL (2011). Notwithstanding the previous research challenges, the current study fills in the existing gaps in the literature on integrated agro-food formations in Transition Economies and contributes to the prominent research pertaining to integrated structures in the Russian Federation, thus far, e.g. KHRAMOVA (2003), KOESTER (2005), HOCKMANN et al. (2007), SEROVA (2007), DMITRI RYLKO (2010), WANDEL (2011), UZUN et al. (2012).

In effort to contribute to filling the existing gaps in literature to scholarship interested in Corporate Governance of Business Groups in the agricultural complex, on the basis of the Russian Federation, the principal aims of this dissertation are twofold:

1. A comparative analysis of ownership structures impact on performance of agroholding member farms and independent farms.
2. A comprehensive depiction of ownership structures of agroholdings in Russia.

Literature suggests the production costs to be best mediated by independent "family farms", e.g. (BINSWANGER et al., 1995), (EASTWOOD et al., 2010), (POLLAK, 1985).

In addition, Russian Federation has long been notorious for its corrupt socio-economic environment and high corporate taxation, e.g. (KPMG, 2006). Consequently, the following hypotheses were henceforth developed in this study:

1. Agroholding membership is negatively related to farm performance
2. Private ownership positively influences farm performance

These hypotheses are based on the fact that most of Russia's corporate private affiliates are registered in foreign "tax-heaven" zones, such as Cyprus. Similarly, given legal and "blat" (political) connections, participation of the state in farm ownership is also assumed to also exert a positive impact on farm performance.

This work opens the door to scholarship interested in the Corporate Governance of Russian agricultural complex and, henceforth, uncovers some of the major agroholdings existing in the Russian Federation since 1995 until present. Two detailed ownership-performance relationship analyses at aggregate agroholding and independent farm levels are revealed, followed by the corporate ownership structures depiction in case studies. The case studies depict agroholdings' regional dissemination, performance magnitude, and strategic importance for the Russian Federation.

1.3 APPROACH

The present work encompasses both theoretical and empirical framework. The theoretical part tests the hypotheses of reasons behind formation of integrated structures. Accordingly, the theories of the Firm and Property Rights of Institutional Economics, along with the problem of Principal-Agent of the theory of Corporate Governance are implemented. The theory of the Firm touches upon the concept of Transaction Costs, Embedded Institutions, and Property Rights. The Transaction Costs are applied explaining the reasons for business groups creation and their vertical integration, e.g. to reduce the high risks faced by developing countries due to absence of plenty of routinely present market mechanisms, e.g. LEFF (1979). The Embedded Institutions section adapted from (KOESTER, 2005) explains the agroholdings emergence and survival from the perspective of formal, e.g. law versus informal (culture) institutions, e.g. (WILLIAMSON, 2000). The Property Rights, initially, is explained from the general economic perspective, such as who the integrators are (farms, versus processors, versus retailers), e.g. GROSSMANHART (1986), HARTMOORE (1990). The theory, subsequently, embarks on a concept of Ownership and verifies the assumption suggesting the agroholdings formation to result from entrepreneurial activity, as opposed to embedded institutions, e.g. KOESTER (2005). The Transaction Costs theory is followed by a discussion of the theoretical framework of Agency dilemma. There the main argument attests to the fact of superiority of firms where Principals, e.g. owners and/or founders of the businesses, and Agents, e.g. the

Chief Executive Officers and/or top managers, are the same persons. The concept is derived from the founders of the Agency theory, e.g. BERLEMEANS (1932), and is applied to Russian agro-food integrated structures, revealing the differences and similarities, existing in the West and Russia, respectively, e.g. AVDASHEVA (2003).

The empirical part of this research pertains to utilizing the firm-level data on farms across the entire Russia, as well as detailed Belgorod and Moscow regional portrayal. Using thresholds at different shareholding cut-offs, the farms ownership structure was traced until the ultimate beneficiary, similar to that of (LA PORTA et al., 1999), upon which ultimate ownership-farm performance relationship among heterogeneous proprietors was analyzed. The final empirical part belongs to the 10 case studies concretely illustrating some of Russia's largest by revenue, labor, and land agricultural operators. There, to test the main hypotheses of this thesis, the domestic and foreign owned agroholdings are portrayed where a background on their development, financial and economic performance, territorial distribution, and ownership structure are described.

1.4 DATA

To answer the hypotheses of this thesis the two datasets were compiled from various databases. Both the Hypothesis 1 and Hypothesis 2 were tackled by utilizing the ownership and financials information of Interfax, Russian Research Institute of Agricultural Economics, First Independent Rating Agency, Belgorod and Moscow agricultural departments, and the Russian Institute of Agrarian Problems and Informatics.

1.5 PROCEDURE

Theories, empirical data, and case studies were used to test and reinforce the hypotheses in this dissertation. The below theories were used to explain reasoning for existing in the Russian Federation agricultural complex innate ownership structures and analyze the ultimate ownership-performance relationship between the corporate (agroholding) farms and individuals (stand-alone) farms.

The Transaction Costs, Embedded Institutions, and Property Rights theories were utilized to support the reasons behind the dominance of integrated holding structure in Russia's agricultural complex in Chapter 2. The Opportunistic Behavior, Frequency of Transacting, Bounded Rationality, Uncertainty, Asset Specificity, Hold-up Problem, Moral Hazard, and Adverse Selection are explained to accentuate the issues inflicted by the above-mentioned theories. Taking Russia's uncertainty and volatile political and economic environment into consideration – high corruption, weak legal rights and rule of law, high costs of transacting on the market, problematic contract enforcement, and high lending

interest rates were used to convey the rationale for holding vertical and horizontal integrations. In Chapter 2.2 principal-agent dilemma is described, where consolidation of ownership and control by the principals is suggested as a major solution to the problem of agents expropriating the firms' resources, due to insufficient stock ownership in their operated firms. Similarly, investigation of ownership-performance relationship is reviewed in the United States, Asia, Western and Eastern Europe, to depict utilized by the scholarship techniques and the found results. In Chapter 3 OLS multiple regressions analyses were applied to appraise the ownership-performance relationship of Russia's largest 65 agroholdings during 1995-2008. In Chapter 4, OLS estimations were performed to evaluate the ultimate ownership-performance relationship of 33 agroholdings in Belgorod and Moscow regions. Chapter 5 comprises the 10 case studies of some of the largest agroholdings existing in the Russian Federation since 1995 until 2014. It complements the research hypotheses, theoretical and empirical part of this thesis by providing concrete examples of agroholdings development, geographical spread, ownership structures, and supply-chain designs, representing the fundamental socioeconomic and political information, such as integrated corporate financial statements, political lobbying, and social role in their operated regions. In the ultimate Chapter 5.11, theoretical and empirical conclusions reinforce the respective Chapters of the thesis, where given the retrospect and current developmental trends, the potential prospects of agroholdings evolution are discussed.

2 PREVALENCE OF BUSINESS GROUPS: A THEORETICAL PERSPECTIVE OF THE PHENOMENA

2.1 INSTITUTIONAL EXPLANATION ON THE BASIS OF RUSSIA'S AGROHOLDINGS

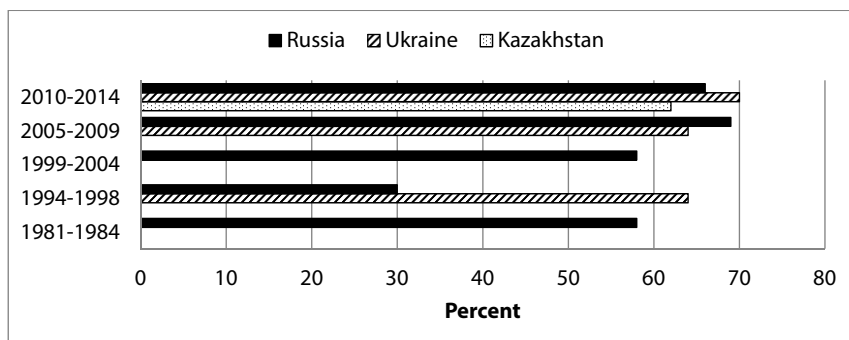
The following Chapter presents a literature review on vertical integration, providing theoretical perspectives pertinent to its potential benefits, taking into consideration the agribusiness contracting parties. The theoretical framework is analyzed and applied to Russia's agroholdings, given the immanent institutional settings.

2.1.1 High transaction costs

The firm, as an organizational structure, plays a role of nexus of transactional contracts. The two entrepreneurs, who exercise such contracts, are to exchange their property rights and allocate resources, to create bilateral benefits and reap profits. As profits are realized "transaction costs" are incurred during resource allocation. These costs are to be internalized by the firm when market costs of transacting are too high, e.g. (COASE, 1937). Conversely, should the intra-firm costs of transacting escalate, the entrepreneurs disintegrate and/or transact, allocating resources with other players, directly on the market. The opportunistic behavior, frequency of transacting, bounded rationality, uncertainty, asset-specificity, hold-up problem, moral hazard, as well as adverse selection – constitute the key impediments to overcome and examine.

A profit achieved from transactions by means of dishonesty and insincerity is termed "opportunism", e.g. (WILLIAMSON, 1975). Such behavior augments dreadful for business conduct and entrepreneurship incomplete contracts. The *ex-ante* cheating of one party, perverting the actual "state of affairs", prompts another party to less likely contract with such person *ex-post*. Yet, it is the contractual repetition that is of importance, as it fosters mutual trust. The omnipresent distrust within the Russian society was entrenched from the Soviet Union, whose citizens, by the virtue of "moral duty", could be rewarded for being the State's informants, e.g. (HEINZEN, 2007). Evidently, the distrust was inflicted onto the majority of the population of the largest post-soviet economies. Such mentality is prevalent even today where 62 % of the sampled population in Kazakhstan, 66 % in Russia, and 70 % in Ukraine disbelieve each other (see Figure 2-1). Given that it takes several generations for institutions to change, further integration is expected.

Figure 2-1: Share of distrusting individuals in Russia, Ukraine, Kazakhstan (1981-2014)

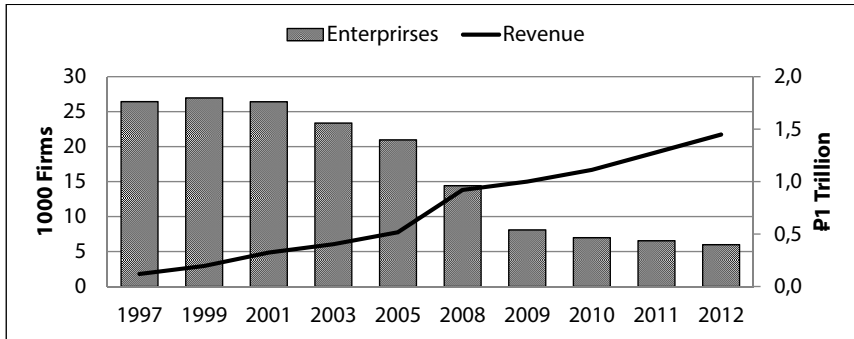


Source: WORLD VALUE SURVEY (author's own illustration).

Note: The population mean during 1981-2014 in Russia was (2,099), Ukraine (1,770), and Kazakhstan (1,502).

The inability to foresee all potential risks, inflicted by uncertainty on the market, entails erroneous decision making, called "bounded rationality", e.g. SIMON (1955), WILLIAMSON (1992). Considering the uncertainty of the 1990's, due to the common practice of raiding and hostile takeovers of that time, Russia's agroholdings acquired and merged their (former standalone) farms into business groups, under the same premise, anticipating higher transaction costs, otherwise. Typically, the raw materials producers would acquire their processors due to the latter unable to pay off their debts for the purchased commodities. Being aware of such trends, processors were either sold out to the producers, or bought the producing farms themselves, to avoid potential acquisition. The insufficient information on the trend under time constraints stimulated the swift integration *en masse*. This is evident in Russia's agricultural enterprises which largely declined in number from 26,427 (1997) to 5,973 (2012), especially after the global financial crisis of 2008, while their total revenue drastically increased from 118.91 billion RUB (1997) to 1.45 trillion RUB (2012) (see Figure 2-2).

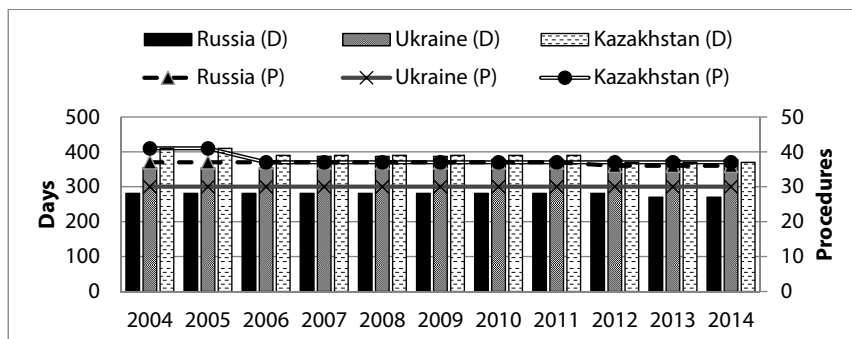
Figure 2-2: Revenues of large and mid-size agribusinesses in Russia (1997-2012)



Source: FEDERAL STATE STATISTICS SERVICE (author's own illustration).

Contracts must be asset-specific to be complete. Whether physical, site or human capital specificity, to circumvent possible conflicts and misunderstandings, it must be concretely stipulated in the contractual agreement by both parties, e.g. WILLIAMSON (1992). The unspecified asset relationships lead to a hold-up problem and, thus, to inefficient incomplete contracts. The two contractors, concerned with one's bargaining power increase to result in another's profit reduction, halt the cooperation, ultimately, bilaterally reducing potential profits, e.g. (GROSSMANHART, 1986), (HARTMOORE, 1990). In Russia's case, the recent and tremendously quick transition from planned to market economy with fragile legal institutional outset impeded the society to grasp the contractual construct in depth. The average time to judicially resolve a commercial dispute between parties during 2004-2014 took 279 days for Russia, 374 days for Ukraine, and 388 days for Kazakhstan. The average number of procedures to resolve the same matter amounted to 37 steps for Russia, 30 steps for Ukraine, and 38 steps for Kazakhstan (see Figure 2-3). The agents' cognizance and desire to circumvent this problem promotes integration, where legal contractual enforcing is unnecessary under a consolidated ownership.

Figure 2-3: Contract enforcement in Russia, Ukraine, Kazakhstan (2004-2014)



Source: Doing Business (author's own illustration).

Note: D (days); P (number of procedures).

An unobserved contracting party's behavior, resulted in unawareness of the other party fulfilling its arranged obligations, is a moral hazard. Its causes, under asymmetric information, may be ignorance, an associated impossibility and/or high costs of comprehensive surveillance. An expected meager to zero punishment of self to be alleviated by others' losses, indulges an execution of risk, e.g. (HÖLMSTROM, 1979). The issue occurs between two foreign contracting firms, as well as within the firm, e.g. the "free-riders" rewards at the expense of others' efforts. Agrohholdings, due to financial viability are in a much greater position to implement surveillance technology, as well as monitoring persons, which is the necessary predicament for "metering", when efficient output is concerned, e.g. (ALCHIANDEMSETZ, 1972). An adversely selected, under uncertainty, disadvantageous decision by one party, such as a signed contractual agreement, is also a dare problem in transaction costs, as it may arise regardless of dishonesty of another, e.g. (AKERLOF, 1970), (PAULY, 1974). Lessening the complications of disinformation, ignorant decision making and risk averseness, motivated agents to vertically integrate in agriculture and other sectors of the Russia's economy.

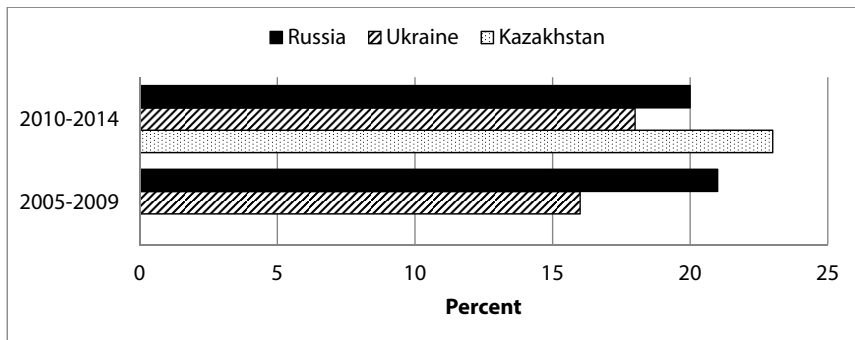
2.1.2 Strongly embedded institutions

The agents' rational behavior is assumed, by the neo-classical economics, to stem from incentives, e.g. (NORTH, 1993). The comportment, nevertheless, is strongly influenced by the first level informal embedded institutions which, differing from country to country, shape economic development. The "embeddedness" pertains to a non-computational set of variables, such as customs, traditions, norms, religion, as well as shared individual cultural beliefs, e.g. WILLIAMSON (2000). The latter shape an intra-group behavior and significantly

implicate their economic performance, e.g. GREIF (1994). Bearing in mind the first level institutions, "insular societies" often protect themselves against "alien values", e.g. WILLIAMSON (2000). As Russia went through drastic transformations and, perhaps, the quickest massive privatization the world ever saw, e.g. GURIEVRACHINSKY (2005), nearly a century-long "embeddedness", enforced upon people via Soviet institutions, could not be changed overnight.

One inherited from the Soviet Union embeddedness (mentioned in Chapter 2.1) is the distrust in validity of formal rules of law and in the State, as a biased enforcer of common rules. The law, traditionally seen as an arbitrarily used instrument to ensure the power of the authorities, was seldom self-applied. This resulted in a widespread trust and reliability of informal personal relations, e.g. LEIPOLD (2006), favored corruption practices, increased uncertainty, and prompted for fewer transactions, e.g. KOESTER (2005) (see Figure 2-4).

Figure 2-4: Share of people fully trusting in personal relationship (2005-2014)



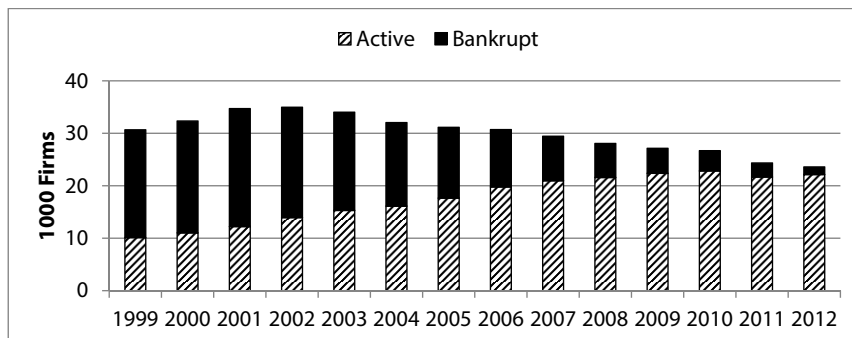
Source: WORLD VALUE SURVEY (author's own illustration).

Note: 2005-2012 population sample: Russia (2,099), Ukraine (1,770), and Kazakhstan (1,502).

Another embeddedness that prevented an alternative to segment collectives into small family farms was the farmers' and policy makers' confidence in the supremacy of large-scale farming, e.g. KOESTER (2005). The politicians supported takeovers of indebted farms by outside operators, granting them subsidies to create new enterprises while leaving behind the indebted old. Governor Savchenko in Belgorod oblast deliberately compelled the financially viable outsiders to agriculture to invest into and revive the former financially weak state and collective farms (MUSTARD, 2007). Shortly after, a special resolution No. 710 of 14 December 1999 was enacted "On measures for economic recovery of insolvent agricultural enterprises in the region", e.g. (BELGORODLAW, 2000). To make agricultural investments more lucrative, the potential debt inheritance was mitigated via omnipresent regional farms bankruptcies and their entirely

new blank and debtless balance sheets, e.g. (DMITRIY RYLKO, 2010). Thus, both in private and state agribusinesses, the share of bankruptcies ranged from the high 66.98 % in 1999 to 6.14 % in 2012 (see Figure 2-5).

Figure 2-5: Share of bankrupt enterprises in Russia's agribusiness, per annum (1999-2012)

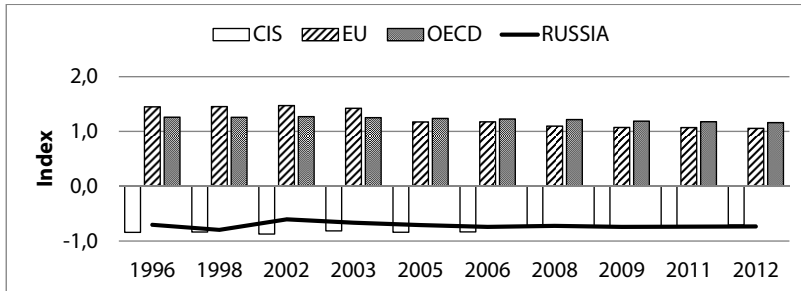


Source: INTERFAX (author's own illustration).

Note: State includes all other ownership types, e.g. foreign, and mixed.

The second "formal" level institutions, i.e. property, polity, judiciary, and bureaucracy, also favored the creation of agroholdings. In comparison to The EU and OECD with the average 1996-2012 composite worldwide governance indicators constituting 1.24/2.5 and 1.23/2.5, the average of Russia and the CIS for the same period amount to -0.73/2.5 and -0.80/2.5, respectively (see Figure 2-6). With respect to polity (political stability, no violence), during the same timeframe the lowest indicators fell for Russia (-1.05), led by EU (0.88). Bureaucracy (government effectiveness) was the lowest in the CIS average (-0.73), though Russia was not far with (-0.47), compared to that of EU (1.38) and OECD (1.40). Judiciary (rule of law) was also the weakest in CIS (-0.92) and Russia (-0.70), compared with EU (1.24) and OECD (1.21), respectively (see Table 8-11).

Figure 2-6: Worldwide governance indicators: CIS, EU, OECD, Russia (1996-2012)

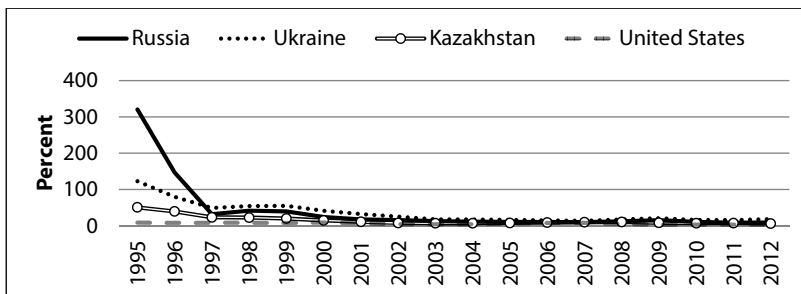


Source: THE WORLD BANK (author's own illustration).

Note: Indicators represent cumulative averages of corruption control, government effectiveness, political stability-no violence, regulatory quality, rule of law, and voice (accountability). -2.5 (weak), 2.5 (strong).

The agricultural production is income tax exempt and only incurs an unrelated to farm's profits cadaster land tax, e.g. (GARANT-SERVICE, 2014). Outside operators may utilize this loophole shifting the profits from non-agricultural to farming activities. Similarly, the badly functioning credit markets improved the comparative advantage of agroholdings. Most owners of the former collective and family farms, unable to prove their credit worthiness, could not obtain the financing necessary for future operations. Even upon provision, the farmers would not afford to repay loan interest, due to the latter reaching 320.31 % per annum, in Russia 1995 and averaging only to 13.04 % (Russia), 20.64 % (Ukraine) and, compared to that of 5.35 % (United States) and 8.76 % (Kazakhstan), during 2000-2012 (see Figure 2-7).

Figure 2-7: Annual lending interest rate in Russia and Ukraine (1995-2012)



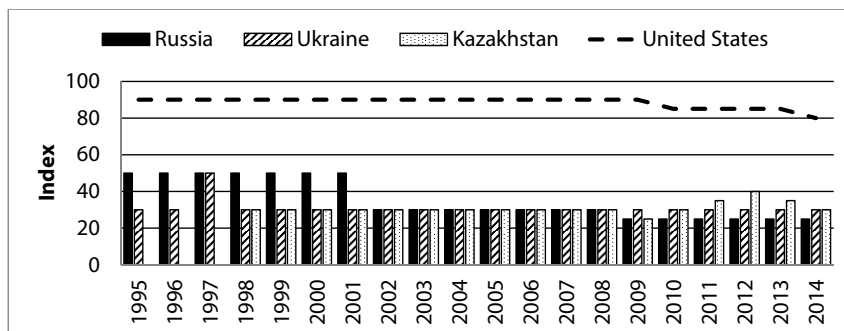
Source: THE WORLD BANK; THE NATIONAL BANK OF KAZAKHSTAN (author's own illustration).

Note: Kazakhstan: Author's own estimation – annual average, based on sporadic real monthly data.

2.1.3 Weak property rights

A property right assumes initial right to a resource via legal ownership, e.g. UMBECK (1981). The property right's meaning, however, is ceased, in absence of resource allocation, e.g. COLEGROSSMAN (2002). Market transactions, thereof, carry bilateral exchange of property rights and internalize the externalities by allocating resources, e.g. DEMSETZ (1967). Thus, the value of these rights is important as it is not the property itself, but the operational entitlement that determines the worth of the exchange, e.g. ALCHIANDEMSETZ (1973). One gross transactional externality pertains to a unilateral benefit at the detriment of another. Processors can revoke the suppliers' residual control rights and diminish the supplying firm's management incentives to work efficiently, under the common ownership. The 1995-2014 average Property Rights index amounted to 35.50 for Russia, 31.00 for Ukraine, and 30.88 for Kazakhstan, compared to that of 88.50 for the US (see Figure 2-8). Weak property rights required the vertical integration to reduce the transaction costs and the inefficient allocation of contractors' residual control rights, e.g. (GROSSMANHART, 1986).

Figure 2-8: Property Rights Index: Russia, Ukraine, Kazakhstan, United States (1995-2014)



Source: THE HERITAGE FOUNDATION.

Note: Index <50 implies a very low legal backing, contract enforcement, a very high corruption and expropriation.

Considering Russia's ill-functioning institutional environment – economic property rights also stimulated vertical integration. The deficiency in legal backing entailed ignorant misinterpretations and intentional misconceptions in a judicial system. Raiding, as a form of economic theft, *de-facto* alienating its *de-jure* former owners, e.g. BARZEL (1997), was omnipresent in Russia during 1990's. The actually controlling economic ownership holders, e.g. COLEGROSSMAN (2002), streamlined ubiquitous bilateral aspirations to integrate and be integrated. The constrained or, at times, revoked property rights upon group's affiliation, served

as collateral protectorate and were more significant for the small farms, notwithstanding their potential allocative efficiency losses, e.g. (RYLKO et al., 2005). Keeping other things constant, the bankruptcies, such as those due to takeovers, shrunk from 66.74 % in 1999 to 5.89 % in 2012 (see Figure 2-5), while the number of large and mid-size enterprises drastically shrunk also from 26,427 in 1997 to 5,973 in 2012, yet the average revenue per enterprise rose from 0.004 billion RUB in 1997 to 0.24 billion RUB in 2012 (see Figure 2-2).

2.2 BUSINESS GROUP OWNERSHIP-PERFORMANCE: THEORETICAL CONCEPTS AND GLOBAL TESTIMONY

A discovery of relevant prices via the price mechanism precipitates numerous costs, while organizing the production. Hence, studying the governance structures of such organizations is of immense importance, as they provide means of combating the transaction cost reduction, and fall within the framework of theory of the firm, e.g. WILLIAMSON (1981).

2.2.1 The value of business groups

The presence of business groups as an essential institution of corporate governance is simultaneously well documented in industrialized and emerging economies. The essence of their economic dispensability, however, is frequently questioned and summoned under the pretense of existing counter-argumentation characteristic in both worlds. Most studies on business group governance and ownership effects on their performance encompassed the corporate world of developed countries, e.g. GRANTKIRCHMAIER (2004), with particular emphasis paid to the US, e.g. AGGARWALSAMWICK (2006). In recent years, however, the research also touched upon the developing countries, e.g. ESTRIN et al. (2009).

Because the world market economies are exceptionally diverse, there exists no consensus in the literature regarding the metrics of corporate performance. Methodologies vary depending on firms' country of origin, e.g. developed versus transition economy; legal ownership forms, e.g. state versus private; shareholding composition, e.g. dispersed versus concentrated; corporate dimension, e.g. small versus large, and plenty of other variables which further complicate the assessment of business groups performance. Some scholars employ share price data, e.g. GRANTKIRCHMAIER (2004), some utilize Return on Assets and Return on Equity, e.g. LOVERACHINSKY (2009), some apply accounting profit and Tobin's Q rates, e.g. DEMSETZVILLALONGA (2001), and others use labor productivity, e.g. KUZNETSOVMURAVYEV (2001), as prime performance indicators to find the financial efficacy of investigated corporations.

The economic value of business groups, concomitant to validating the agency theory, is commonly measured by examining corporate ownership structures and firm performance. It is induced by the premise that upon separation of

ownership and control, agents are prone to extract benefits from their principals to their own advantage, e.g. BERLEMEANS (1932), JENSENMECKLING (1976). Accordingly, the literature scrutinizing corporate ownership composition and its impact on firm economic performance consists of positive, negative, as well as null evidence of such relationship.

In the US, many scholars found no evidence pertaining to any relationship of firm economic performance and ownership structure, e.g. DEMSETZVILLALONGA (2001), ownership change, e.g. HIMMELBERG et al. (1999), board composition, e.g. HERMALINWEISBACH (1991), and large stockholdings, e.g. LODERERMARTIN (1997). However, evidence was found that managers may under-invest in firms they operate, e.g. AGGARWALSAMWICK (2006), as well as that higher ownership is likely to increase incentives to appropriate corporate wealth, e.g. LODERERMARTIN (1997). On the positive side, some evidence was found suggesting that a greater number of outside directors contributes to overall higher performance of firms, e.g. DAILYDALTON (1992), family firms may outperform non-family firms, e.g. ANDERSONREEB (2003), and ownership concentration-diversification interaction may be positively related to performance, e.g. GEDAJLOVICSHAPIRO (1998).

Concerning Asia, group affiliated members were found to show higher performance than non-affiliated ones, e.g. CHANGCHOI (1988), however the relationship also varied depending on a particular economy, e.g. KHANNARIVKIN (2001). There firm affiliates, as well as industry members, had higher profits compared to non-affiliates in 6 out of 14 countries, lower profits were found in 3 out of 14 countries, and no significant difference was seen in 5 out of 14 countries. With regard to family ownership, a positive and significant impact on small and mid-size enterprises was found, e.g. CHU (2009).

In Western Europe, ownership concentration and economic performance of firms was found to be positive based on shareholder value and profitability, e.g. THOMSEN PEDERSEN (2000). Although, in most cases the relationship generally differed across economies, depending on national systems of corporate governance, e.g. GEDAJLOVICSHAPIRO (1998). There the dominant shareholders negatively impacted the long-run financial performance, e.g. (KIRCHMAIERGRANT, 2006).

The Eastern European experience showed a positive relationship between ownership concentration and corporate performance in Ukraine, e.g. PIVOVARSKY (2003), particularly when the ownership was foreign, e.g. ZHEKA (2003). An impact was positive in Russia also with respect to profitability when firms were affiliated within a group, e.g. ESTRIN et al. (2009). A mix of state and private ownership was found to improve firm performance, e.g. LYUDMILA CHERNYKH (2005), whereof a sole non-state ownership was found to negatively influence the firm's value, e.g. KUZNETSOVMURAVYEV (2001). On the negative side, irrespective of the controlling

shareholder, Russia's large-block shareholdings in manufacturing sector negatively impacted firm investment and performance, e.g. FILATOTCHEV et al. (2001).

2.2.2 Corporate ownership, control, and performance

The separation of ownership and control discovery in the United States corporate sector by BERLEMEANS (1932) inspired a vast discussion in financial, economic, and sociological scholarship worldwide regarding the ownership structures of corporate realms in their economies. The analyses of ownership-performance relationship gained momentum only in recent years, predominantly, in the West, due to lack of necessary records on ownership holdings, as well as the essential accounting data in Eastern states. In Russia, due to data scarcity and validity, such studies were initiated during the past decade, e.g. KUZNETSOVMURAVYEV (2001), FILATOTCHEV et al. (2001), LYUDMILA CHERNYKH (2005), SHUMILOV (2008), ESTRIN et al. (2009), LOVERACHINSKY (2009), and pertained, mostly, to oil, financial, and manufacturing sectors.

The academic investigation of the impact of corporate ownership, as well as governance on corporate performance commenced since the theoretical concept of separation of ownership and control in firms of developed and industrialized countries i.e. US and UK, was discovered by BERLEMEANS (1932). Ever since, scholars supplemented the literature with both positive and negative argumentations. The compilation of studied work entails exploration of diversification – as an incentive for managerial pursuit of self-interest, e.g. BETHELLIEBESKIND (1993), HOSKISSON et al. (1994), composition of chief executive officers, boards of directors, as well as outside directors – as an apparatus of corporate governance to enhance monitoring of managers, e.g. DAILYDALTON (1992), DALTON et al. (1999), stock options – as a device to align managerial incentives with those of shareholders, e.g. RAJAGOPALAN (1997), MCGUIREMATTA (2003), and an abundance of other essential variables which altogether herald one's understanding of corporate ownership effect on performance.

The general negative argumentation posits that since corporate structures possess a dispersed ownership form, the managerial participation in the shareholdings of such structures is low, as a consequence of which, the agency costs arise, e.g. BERLEMEANS (1932), JENSENMECKLING (1976). Since managers-entrepreneurs having a small stake in corporate equity inherit a lower fractional gain, they are, therefore, prone to engage in expropriating the firms' resources in forms of perquisites to increase their individual welfare at the expense of interests of the minority shareholders, e.g. JENSENMECKLING (1976). In accordance, the costs for principals (shareholders) and agents (managers) to monitor each other in such an environment would be, most likely, in vain, e.g. GROSSMANHART (1980). The marginal costs for principals would exceed the marginal benefit to control the agents, in view of the performance being a public good, e.g. (AARONSTIGLITZ, 1995).

The negative argumentation was already realized two centuries ago by (SMITHGARNIER, 1838) who, speaking of Joint Stock Companies, implied that it would be unreasonable to suppose the directors of such companies, being the managers of other people's money rather than of their own, watch over it with the same passion.

The positive argumentation, challenges the original agency theory of BERLEMEANS (1932) and states that consolidation of ownership and control lessens managerial opportunistic behavior related to expropriating the minority shareholders, e.g. DEMSETZLEHN (1985), since high managerial equity ownership stimulates a bilateral alignment of incentives, e.g. BORSCH-SUPANKOKE (2002) and, thereby, minimizes the high principals' costs derived by a priori importance to monitor their agents. Confronting the traditional principal-agent theory, several mainstream studies, e.g. La PORTA et al. (1999), CLAESSENS et al. (2000), and BARCABECHT (2001) reveal that shareholding ownership throughout the world is, undeniably, highly concentrated in possessions of either managers, chief executive officers, families, or a state. Moreover, a number of studies, e.g. SHLEIFERVISHNY (1986), KANGSHIVDASANI (1995), GEDAJLOVICSHAPIRO (1998), THOMSEN PEDERSEN (2000), examining corporations worldwide, have found that firms with rigorous ownership concentration outperform corporations that are, naturally, dispersed (see Table 2-1).

The mere fact of constant omnipresence of consolidated ownership in the hands of a few, conceivably, does not advocate its absolute performance supremacy, yet neither does it implicate it being inferior. Thus, it might be fairly reasoned that their existence is predicated by a well-grounded rationale, such as a specific institutional setup. Therefore, in faith of existing scholastic dispute regarding the inverse relationship between corporate governance and firm performance, this thesis contributes to ultimate ownership-performance relationship scrutiny in Russian agricultural complex.

Table 2-1: Corporate governance-performance literature review

Authors (year)	Sample/period	Data source	Performance variables	Ownership measures	Methods	Results and conclusions
Demsetz and Lehn (1985)	The U.S. 511 firms 1976-80	Compustat, CRSP, CDE	Accounting profit rate	Ownership concentration	Single equation (linear) OLS	No significant relationship between ownership concentration and accounting profit rate
Morck et al. (1988)	The U.S. 371 Fortune 500 firms 1980	Compustat, CDE	Tobin's Q	Board ownership	Single equation (piecewise linear) OLS	Q first increases, then declines, and finally rises slightly as management ownership rises.
McConnell and Scrivens (1990)	The U.S. 1,173 firms for 1976 and 1,093 for 1986	Compustat, VALUE LINE	Tobin's Q	Insider block/institutional ownership	Single equation (quadratic) OLS	A significant curvilinear effect of insider ownership, a positive effect of institutional ownership, and an insignificant effect of block ownership on Tobin's Q
Cho (1998)	The U.S. 326 Fortune 500 firms 1991	Compustat, PROXY, VALUE LINE	Investment, Tobin's Q	Insider ownership (officers + directors)	3-equation system, 2SLS, OLS (piecewise)	OLS results suggest that ownership affects investment, and then corporate value, while 2SLS results show investment affects corporate value, and then ownership, but not vice versa
Holderness et al. (1999)	The U.S. 1,236 firms in 1935 and 3,759 firms in 1995	SEC, Moody's Manual, CD	Market-to-book value	Insider ownership (of Ticcres + directors)	Single equation (piecewise linear) OLS	The performance-ownership relation for 1935 is inverse U-shaped, while the relation is weaker in 1995 sample
Ilinimelberg et al. (1999)	The U.S. About 400 Compustat firms (unbalance panel) 1982-92	Compustat; PROXY	Tobin's Q	Managerial ownership (managers + directors)	Fixed effects (quadratic, piecewise) IV	After controlling both for observed firm characteristics and firm fixed effects, there is no evidence to suggest that management effects firm performance
Claessens and Djankov (1999)	The CZ pooled sample of 2,860 observations (706 firms) 1992-1996	A private consulting firm	Profitability, labor productivity	Ownership concentration (top 5)	Single equation (quadratic) random effects	A 10 % increase in concentration leads to a 2 % increase in short-term labor productivity and a 3 % increase in short-term profitability
Demsetz & Villalonga (2001)	The U.S. 223 firms 1976-80	Demsetz and Lehn study	Tobin's Q	Managerial ownership, concentration	2-equation system, OLS, 2SLS,	OLS results suggest that ownership is significant in explaining performance, 2SLS results show no effect of ownership on performance
Earle et al. (2005)	HU 168 firms 1996-2001	Budapest Stock Exchange	ROE, real sales to number of employees (OE)	Concentration (the largest, 2, 3, and all largest blockholders)	Single equation, fixed effects	The size of the largest block increases profitability and efficiency strongly and monotonically
Aggarwal (2006)	U.S. S&P 4/5/600 1,494 public firms 1993-2000	ExecuComp, Center for Research on Security Prices	Tobin's Q, Investment	Managerial incentives-performance	OLS	Performance and investment increase in response to incentives. Management over-invests having private benefits, and underinvests if having private costs.
Hermalin et al. (1991)	U.S. NYSE 142 public financial firms, 1971-83	Compustat, WSJ Index, Harvard's Baker Library	Tobin's Q	Board ownership – performance	IV-2SLS	No relationship found between board composition & firm performance.
Himmelberg et al. (1999)	U.S. SIC 3 600 firms, 1982-1992	Compustat Universe	Tobin's Q	Managerial ownership-performance	OLS fixed effects	No relationship found between managerial ownership change and performance

Authors (year)	Sample\ period	Data source	Performance variables	Ownership measures	Methods	Results and conclusions
Avdasheva et al. (2003)	RU, business groups, 2003-2005	Interfax	Total revenue	State ownership – performance	Questionnaire	Positive relationship found between consolidated ownership and control with state's presence. State improves performance of subsidiaries to apply good governance.
Berle & Means (1932)	U.S. Public manufacturing firms, 1880-1931	RSOR, WJS, SCR, MPU, NYT, M. Ind., MRR,		Ownership-control		Ownership and control are separated. Dispersed ownership favors managers due to asymmetric information with shareholders. Reverse incentives are formed.
Chang et al. (1988)	KR 182 public manufacturing firms 1975-11984		Profit before/after taxes	Membership-performance	Financial statements	Group membership and size enlargement found to have positive relationship with performance and to outperforming non-members.
Chernykh (2005)	RU, 138 industrial firms, 2000-2002	RFCSM	ROA, ROS, ROE, assets turnover, market/book	Ultimate ownership-performance. State participation effect.	OLS, OLS (quadratic term)	Mixed private-state ownership improves performance due to improved monitoring preventing from private gains and private investors preventing state from exercising political & social benefits of control – checks and balances.
Chu (2009)	TW, 341 small-mid public family firms, 2002-2006	Taiwan Economic Journal	Tobin's Q, ROA	Family ownership-performance	OLS	Family Ownership accounts for more than 11 % in Taiwan. Significant positive relationship found between family ownership and small and midsize firm performance.
Daily et al. (1992)	U.S. 100 public firms, 1989	Inc. Magazine, S&P	ROA, ROE, Price/Earnings Ratio	Governance-performance		Positive relationship found between board composition with outsiders and firm performance.

Source: Author's own illustration, adapted from (YABEI, 2008).

3 ROLE OF AGROHOLDINGS IN RUSSIA'S AGRICULTURAL COMPLEX: AN EMPIRICAL EVIDENCE OF LARGEST PLAYERS

3.1 DEFINITION

Notwithstanding the omnipresence of agroholdings in Russia, the major difficulty identifying the occurrence lies in inexistent concrete laws defining the phenomenon. Evident from the archives of the Russian Duma, since 2000 a review of the decree on "holding companies"² was postponed nine times and, ultimately, removed from further proceedings in 2002. Another issue is pertinent to the agroholding organizational form. As agroholdings are comprised of various independent legal entities with financial reports submitted individually, consolidated financial statements are not publically available. If maintained – they are conducted by auditing firms for the majority stockholders of business group's parent companies, solely, for the financial outlook of all group's integrated business units.

There are a number of definitions found in the literature with regard to the phenomena and nature of integrated business formations. The term most commonly used is "business group", e.g. (COLPAN et al., 2010). Nevertheless, a universal definition of a business group is absent, e.g. SHUMILOV (2008), and in the case of Russia, the terminology has no legal backing either. Table 3-1 provides some definitions on business groups common in the literature.

Prior to defining an agroholding, to avoid mixing "apples and oranges", a solid categorization of large-scale farming is required. A common issue which economists are prone to be trapped in is discussing agroholdings as the matter of either large-scale farming, economies of scale, or scope. In reality, those are completely different concepts. Besides agricultural firms, individual farms and household plots as ascribed in the Russian Federal Statistics Service (see Figure 3-1) Russian agricultural complex encompasses super-large classical farms, super-large agricultural projects, and agroholdings.

² The decree of the Duma of the Federal Assembly of Russian Federation on project of Federal Law on "Holdings" 28.06.2000-07.06.2002.

Table 3-1: Definitions of business groups in the literature

Authors	Definition
(Cuervo-Cazurra, 2006)	A set of legally separate firms with stable relationships operating in multiple strategically-unrelated activities and under common ownership control, whereby ownership may be separated into three kinds: – State controlled, family-owned, and widely-held
(Avdasheva, 2007)	Integrated structures that utilize a hierarchical coordination i.e. top down approach. Often the control is rather difficult to detect, due to groups consisting of legally independent entities. They possess one single headquarters which directs the activities of all subordinated firms and resemble the following types: - Holding type integration based on the control of stock or equity shares of enterprises - Integrated enterprises where control evolves regardless of absence or weakness of stock or equity mechanisms, from a single headquarters - Officially registered Financial-Industrial Groups established by a special treaty - Strategic Alliances conducting mutual projects in the field of research, innovation, establishment of objects of infrastructure, etc.
(Petrikov, 2005)	Group of entities not only bound by the asset, contractual and corporate governance interdependence, but also by means of accelerating production through a supply chain
(Ushachev, 2002)	An entirety of legal persons (participants) linked to each other via contractual or asset relationships, where one participating enterprise takes on a function of the main or central company that directs the activities of the member firms and makes strategic decisions, and, virtually, the main company might be responsible for a unified investment, technology, product policy, as well as the distribution of profit

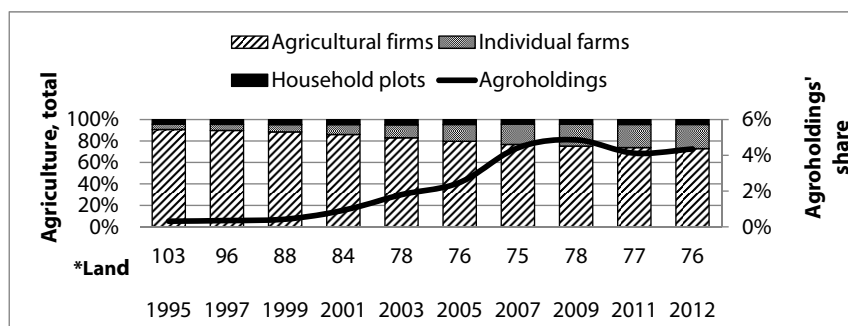
Source: Author's own illustration.

Note: The concept of business groups varies depending on country of origin.

There might be a large cattle farm with over 500 heads of livestock, about 1,000 hectares of land and a massive silos storage farm, registered as two independent legal entities, yet belonging to 1 person. This is a large but a classical farm where the owner keeps the grain as cattle fodder and a sales commodity. Super-large agricultural projects may develop at any point of the agricultural supply-chain and be integrated up or downstream. For instance, an investor acquires a huge firm with massive silo storages and/or trucking fleet, intending to profit on arbitrage through buying and selling cereals, similar to that of Cargill or Glencore International. In case of a business success, this investor further integrates up or downward, respectively. Agroholdings, in their turn, exist by being integrated vertically and horizontally, i.e. economies of scale and scope are achieved while having, on a massive scale, completely integrated supply-chain cycle, what is commonly referred to in Russia as "from field to table" (see Table 3-2). In fact, considering Rusagro and Razgulay groups as an example, they started as large agricultural projects (trading sugar) and with time upon

having amassed sufficient capital – invested and integrated upward, obtaining some of the most colossal agroholdings existing in Russia today (see Chapter 5).

Figure 3-1: Distribution of land in Russian agriculture by types of enterprises, 1995-2012



Source: RUSSIAN FEDERAL STATISTICS SERVICE, author's own illustration.

Note: * Land: Million hectares.

The agroholdings' share comprises agricultural firms.

In a poultry sector example, an agroholding would own and control a poultry farm with fodder storage silos, processing and meat packing factory, logistics unit, the wholesale trading house, a wholesale and a retail chain even with diversified brands of its own products. In essence, an agroholding business model is a self-sufficient small economy operating on local, regional, national, and/or international scale.

Table 3-2: Conceptual difference of large-scale farming in Russia

Concept	Sectors	Land, ha	Region	Form	Integration Reason	Potential	Economies
Super-large farm	>=1	><1,000	>=1	Classical farm	Financial limitation	Upstream	Private enterprise
Super-large agro-project	>=1	> 1,000	>= 1	Vertical or Horizontal	Diversification Production security	Upstream or downstream	Scale or scope
Agroholding	>=1	> 1,000	>= 1	Vertical & Horizontal	Diversification, State request	Upstream or downstream	Scale & scope

Source: (DMITRIY RYLKO, 2010), author's own illustration.

Note: Sectors vary and may be diversified to several industries, e.g. sugar, pork, cattle and poultry, etc.

A frequently utilized approach to define an agroholding in the literature is quantitative analysis, i.e. the one that asserts the subsidiary affiliation with the parent company to be sequential to the latter being the largest charter capital

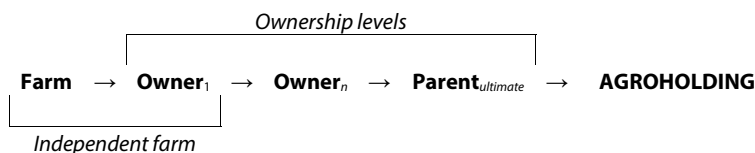
holder of the former, e.g. GRANTKIRCHMAIER (2004), THOMSEN PEDERSEN (2000). The abovementioned approach was employed to identify an agroholding. The principal variables considered were founding bodies (owners/investors) of each farm, i.e. person/family, state, financial institution, foreign/offshore entities, widely-held firms, and the shares of their charter capital stock possessions. Taking into account the stockholdings of each agricultural organization's owners, the ultimate owners were determined, upon which the independent and/or dependent entities with a common ultimate owner were grouped into one agroholding.

Consequently, similar to the classification of UZUN et al. (2009), the following agroholding definition emerged as a result of author's own findings, in the course of agroholding corporate ownership research:

Agroholding is a group of legally independent and/or dependent of each other agricultural, processing and/or service providing organizations whose largest charter capital stock belongs to one legal or physical entity responsible for managing and organizing the group.

While scrutinizing ownership structures, the Interfax datasets allowed a discovery of various agroholding ownership types, as well as their supply chain structures. In actuality, an agroholding subsidiary may be *de jure* controlled at 50 % + 1 ownership share by 1 investor (person, company, state, financial corporation). It may also be *de facto* controlled at e.g. 25 % + 1 ownership share by one investor if others hold less than 25 % shares. The subsidiary control might be exerted in a widely-held mechanism with each owner holding less than 20 % shares. However, a joint ownership of two family members, e.g. one owning 20 % plus 1 share and another owning 5 % plus 1 share, creates a *de facto* family control of 25 % plus 1 share. Any organization throughout the ownership levels, excluding the farm, may be registered as a legal entity, financial institution, state, or be a widely-held firm. An ultimate owner may be a physical person, legal entity, financial institution, state, or a widely-held entity (see Figure 3-2).

Figure 3-2: Agroholding ownership structure model

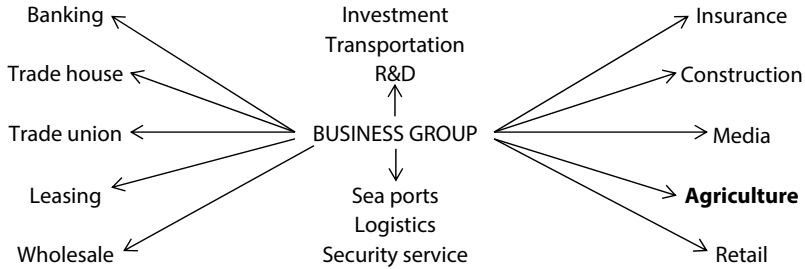


Source: Author's own illustration.

With respect to agroholding industry structure types, it may operate strictly as pure agro-food business (Figure 3-2), or be a part of a conglomerate business

group whose involvement in agro-food industry is predicated by mere portfolio diversification (see Figure 3-3).

Figure 3-3: Agroholding integrated within a larger diversified business group



Source: Author's own illustration.

Note: The agriculture of a diversified business group may pertain to an agroholding or a super-large agro-project.

In fact, most of the largest Russia's agroholdings, such as Rusagro, Razgulay, or Cherkizovo (see Chapter 5) possess the structure similar to Figure 3-3. The only difference is that integrated units involved in industries, such as Insurance, Investment, Banking, Finance, or Leasing, were created for diversification purposes, and agriculture remains the main source of group's income. In the case of immensely large conglomerates, like the Gazprom, the ownership structure also resemble Figure 3-3, however, the main source of income stems from the natural resources extraction industry.

Bearing in mind the difficulties in ownership discovery, the above definition allowed an effective capturing of the corporate governance mechanisms and ownership structures of Russia's agroholdings, and thereafter, a provision of precise illustration of the occurrence. Evident from the aforementioned definitions of the phenomena, i.e. "agroholdings", "integrated structures", "new agricultural operators, and "business groups" – all carry synonymous concepts. Thus, to avoid further confusion in this work, these notions will be used interchangeably.

3.2 DATA

In effort to contribute to Objective 1 of this thesis, Russia's agroholding ownership structures are systematically portrayed in the following part. The Federal State Statistics Service data was utilized from various sources for the quantitative

and qualitative analyses in this thesis. The course of the Ph.D. project enabled the author to compile several datasets described below:

- The unbalanced panel firm-level data on agroholding member farms and independent farms in Russia, as well as the ownership and membership structure during 1995-2012³. The 1995-2008 farm-level data were obtained via mutual collaboration with the Russian Institute of Agrarian Problems and Informatics, along with the Professional Market and Company Analysis System to analyze agroholding member and independent stand-alone non-member farm performance, as well as to examine the difference between the state and private farm ownership forms.
- Unbalanced panel firm-level data on farms from Belgorod and Moscow regions, ultimate ownership and membership structure during 2001-2007⁴. The data were collected via mutual collaboration with the Russian Research Institute of Agricultural Economics, Belgorod Oblast State Statistics Office, where the financial statements were complimented by the First Independent Rating Agency.

Ultimately, the theoretical and empirical parts of the thesis were reinforced with the 10 case studies on largest agroholdings existing in the Russia Federation during 1995-2014. The groups' corporate governance structure, group development, and financials were portrayed with the data obtained via comprehensive corporate investigation on the basis of the agroholding websites and the Professional Market and Company Analysis System.

3.2.1 Ownership tracing

The unique agroholdings' 1995-2012 dataset was constructed on the basis corporate ownership structure data of Interfax and in collaboration with the Russian Institute of Agrarian Problems and Informatics. The farm-level data was merged with the ownership intelligence from Interfax, similarly to UZUN et al. (2009). The top-down approach was used, i.e. the name of a parent company, e.g. Rusagro was input in the search engine, wherefrom the subsidiary ownership structure was derived where Rusagro was the largest shareholder. Only the agricultural subsidiary farms were considered, e.g. firms involved in retail/wholesale, media, processing, and other industries were omitted from the agroholding (land, labor, and capital) analysis.

The abovementioned data sources listed in the Data section facilitated provision of the following information:

³ The econometric Ordinary Least Squares analysis encompassed only 1995-2008 period, due to data availability.

⁴ These were the prime regions in the course of author's Ph.D. project for which the data were available.

- Shareholding structure, i.e. share of majority and minority ownership
- Ownership change, i.e. historical retrospect since 1999
- Governance types, i.e. private versus state (federal, regional, municipal)
- Origin, i.e. Russian, foreign, or stateless physical and legal entities
- Incorporation, i.e. joint stock, limited liability, partnership, cooperative, etc.
- Industry, i.e. agricultural and other, e.g. financial, construction, processing, etc.
- Age, i.e. the date the firm was officially (re)registered
- Financial structure, i.e. balance sheet, cash-flows and income statements
- Employment, i.e. farms' total labor and the one involved in agriculture only.

There exist only a few State conglomerates that comprise agricultural portfolios, such as Gazprom, Rosimushchestvo, or Russian Railways. Thus, it must be noted that the notion of a State agroholding is used, to an extent, arbitrarily, since neither federal, municipal nor regional authorities, throughout Russia, manage the state farms as a whole group. In order to capture the differences between state and private ownership, with respect to agroholding, as a studied phenomenon, dummy 1 was given to state farms as one unit.

The available statistics might not facilitate the most accurate discovery of agroholdings with a complete registry of all related agricultural subsidiaries. Agroholdings may be established in various forms of entities (legal or physical), carry a widely-held form composed of thousands of owners, registered under unrelated beneficiary (such as the Depository Clearing Company), or they may be registered under the name of another person (relative or friend) with a different last name, which further complicates the ownership structure scrutiny. Notwithstanding, the assembled dataset provides, thus far, the most comprehensive outlook on Russia's agroholdings, their regional development and significance in agricultural complex. The ownership structure of the analyzed agroholdings derived from Interfax database was crosschecked with information available on agroholdings' websites and the media. Most often, the Interfax intelligence supplied a much elaborate ownership structure of agroholdings, compared to the agroholdings' websites, especially considering the shareholding data. This ascertained the estimations along with the 10 case studies to lessen the errors from potentially omitted subsidiaries and attain greater sample accuracy.

3.2.2 The dataset

The dataset is remarkable in providing the variables imperative for estimating performance of agricultural farms, especially for agroholdings which, predominantly,

do not maintain consolidated financial statements, that of an entire group (see Table 3-3).

Table 3-3: Description of data in the Entire Russia agroholding dataset, 1995-2012

VARIABLE		DESCRIPTION
FARMS		
Agroholding	Dependent corporate ownership (units)	
Stand-alone	Independent ownership (units)	
SIZE		
Land	Total arable soil (hectares)	
Assets	Total current and long-term assets (rubles)	
Labor	Total number of employed (persons)	
PERFORMANCE		
Financial	Total revenue, gross profit (rubles)	
Economic	Labor productivity (revenue/labor), land productivity (revenue/land) Yield (animal husbandry and crops, e.g. weight and quantity)	
PRODUCTION		
Subsidies	State support for crops, animal husbandry (rubles)	
OWNERSHIP		
Private	Privatized farms (ownership codes, dummies)	
State	Federal, regional, municipal farms (ownership codes, dummies)	
Foreign	Foreign legal and physical entities, and other ownership types (ownership codes, dummies)	
INDUSTRY		
Holding-level	Agricultural/non-agricultural main activity of umbrella firms (industry codes, dummies)	
Farm-level	Agricultural/non-agricultural main activity of dependent/independent farms (industry codes, dummies)	

Source: Author's own illustration.

The entire dataset consists of 13,277 observations and covers 1995-2012 time-frame, incorporating 6,309 dependent agroholding member farms and 6,703 independent stand-alone farms. The minimum number of observations comprised 245 agroholdings farms pertinent to 58 agroholdings and 187 independent farms during 1995. The maximum number of annual observations constituted 1,128 (2009) of which there were 641 dependent and 487 independent farms. The number of agroholdings in the dataset ranged between 25 (1995-1996) and 65 (2008-2010). The number of dependent agroholding member farms per annum ranged from 58 (1995-1996) to 664 (2010), with the lowest average of farms integrated to an agroholding amounting to 2 (1995-1998) and the highest average of 10 (2009-2010). Although all 65 agroholdings were

under ultimate private ownership, some of their farms were also partially owned by the state and foreign legal entities. Foreign ownership predominantly comprises offshore zones, e.g. British Virgin Islands, Cyprus, Panama, through which agroholdings economize on income taxes.

Thereof, during 1995-2012 an average agroholding comprised about 6 private, 1 state, and close to 1 foreign held farm (see Table 3-4). For total elaborate statistics see Table 8-1 in the Appendix.

The agroholdings' average total revenue ranged from 0.02 billion rubles (1995) to 0.93 billion rubles (2012). During 1995-2012, the following constituted average revenue per agroholding: minimum 0.11 million rubles, maximum 13.27 billion rubles, total mean of 0.32 billion rubles, with an average sum of 161.11 billion rubles and a standard deviation of 1.06 billion rubles. The average revenue of agroholding farms with foreign ownership during 1995-2012 was higher than others' and comprised 0.83 billion rubles, compared to 0.59 billion rubles of state-owned agroholding farms, as well as 0.27 billion rubles of agroholding farms in private ownership. The average maximum revenue was led foreign ownership (10.97 billion rubles), during the sampled period with, followed by the private ownership (10.82 billion rubles) and state (4.36 billion rubles). The average sum of total revenue was led by private ownership during 1995-2012 (126.29 billion rubles), followed by foreign (24.24 billion rubles) and the state ownership (10.58 billion rubles) (see Table 8-2).

The gross profit averaged from 0.01 billion rubles (1995-1998) to 0.20 billion rubles (2012). During 1995-2012, the following constituted average gross profit per agroholding: minimum -0.08 billion rubles, maximum 2.25 billion rubles, total mean of 0.07 billion rubles, with a standard deviation of 0.21 billion rubles. Similar to the total revenue composition, the average gross profit of agroholding farms with foreign ownership during 1995-2012 was higher than others' and comprised 0.18 billion rubles, compared to 0.13 billion rubles of state-owned agroholding farms, and 0.06 billion rubles of agroholding farms in private ownership. The average maximum gross profit was spearheaded again by foreign ownership during 1995-2012 (2.22 billion rubles), followed by foreign (1.88 billion rubles) and the state ownership (0.81 billion rubles). The average sum of gross profit in agroholdings was by private (28.16 billion rubles), foreign (5.61 billion rubles) and state ownership (2.21 billion rubles) (see Table 8-3).

Table 3-4: Descriptive average statistics of Russia's agroholdings (1995-2012)

Farms	Total Independent	absolute number																	2012	
		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Holdings	All	245	252	262	284	351	416	566	693	811	868	971	1,079	1,124	1,111	1,128	1,088	892	871	
	Private	187	194	201	220	250	277	321	394	459	485	514	546	536	495	487	424	361	352	
	State	58	58	61	64	101	139	245	299	352	383	457	533	588	616	641	664	653	519	
	Foreign	25	25	27	28	37	38	44	51	55	59	61	61	64	65	65	65	65	63	63
Farms\holding	All	23	23	24	25	33	35	43	50	54	57	59	60	63	65	65	64	62	62	
	Private	3	3	3	3	7	10	9	9	11	14	12	14	15	13	13	13	17	13	16
	State	0	0	1	1	1	5	7	10	11	14	20	19	20	22	25	27	23	20	20
	Foreign	2	2	2	2	3	4	6	6	6	6	7	9	9	9	10	10	8	8	8
Revenue	All	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
	Private	0	0	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1
	State	0.02	0.03	0.03	0.04	0.13	0.13	0.13	0.14	0.22	0.21	0.27	0.30	0.35	0.42	0.56	0.64	0.93	1.17	1.17
	Foreign	0.02	0.03	0.04	0.05	0.46	0.38	0.52	0.53	0.52	0.44	0.52	0.57	0.40	0.65	1.22	1.14	1.52	1.68	1.68
Profit	All	-	-	0.00	0.00	0.23	0.27	0.28	0.24	1.04	0.54	0.69	0.86	1.12	0.97	1.21	1.40	2.40	3.64	3.64
	Private	0.01	0.01	0.01	0.01	0.03	0.02	0.02	0.02	0.02	0.02	0.04	0.14	0.18	0.24	0.08	0.08	0.12	0.20	0.20
	State	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.02	0.03	0.13	0.16	0.21	0.07	0.07	0.10	0.17	0.17
	Foreign	0.01	0.03	0.01	0.02	0.10	0.06	0.10	0.12	0.09	0.05	0.06	0.19	0.27	0.52	0.17	0.15	0.14	0.25	0.25
Land	All	0.00	0.00	0.00	0.00	0.05	0.04	0.07	0.05	0.07	0.08	0.11	0.34	0.44	0.55	0.22	0.26	0.39	0.55	0.55
	Private	5.45	5.74	5.84	5.93	6.20	5.94	5.66	6.70	7.41	7.32	8.38	9.77	11.85	13.38	12.60	13.06	14.20	15.17	15.17
	State	5.54	5.85	6.03	6.16	6.06	5.97	5.40	6.44	7.22	7.18	8.28	9.44	11.49	13.13	12.18	12.57	13.69	14.67	14.67
	Foreign	3.65	3.70	3.73	3.12	2.57	1.72	1.75	1.60	1.77	1.78	2.88	2.80	3.30	4.02	5.18	8.83	7.59	9.91	9.91
Labor	All	0.00	0.00	1.34	1.34	14.35	13.25	19.58	17.33	16.02	20.00	14.80	20.15	26.44	23.72	33.80	37.45	37.45	37.45	37.45
	Private	0.72	0.67	0.61	0.60	0.56	0.48	0.36	0.38	0.40	0.36	0.35	0.33	0.29	0.38	0.40	0.37	0.60	0.77	0.77
	State	0.72	0.66	0.61	0.61	0.51	0.44	0.33	0.36	0.36	0.33	0.33	0.32	0.29	0.37	0.36	0.34	0.52	0.66	0.66
	Foreign	0.76	0.73	0.67	0.59	0.69	0.62	0.68	0.62	0.72	0.63	0.55	0.50	0.41	0.55	0.85	0.80	2.44	2.94	2.94
Farms	All	0.00	0.00	0.08	0.16	1.12	0.87	0.61	0.57	0.63	0.68	0.48	0.38	0.34	0.42	0.69	0.60	0.82	0.92	0.92
	Private	0.00	0.00	0.08	0.16	1.12	0.87	0.61	0.57	0.63	0.68	0.48	0.38	0.34	0.42	0.69	0.60	0.82	0.92	0.92
	State	0.00	0.00	0.08	0.16	1.12	0.87	0.61	0.57	0.63	0.68	0.48	0.38	0.34	0.42	0.69	0.60	0.82	0.92	0.92
	Foreign	0.00	0.00	0.08	0.16	1.12	0.87	0.61	0.57	0.63	0.68	0.48	0.38	0.34	0.42	0.69	0.60	0.82	0.92	0.92

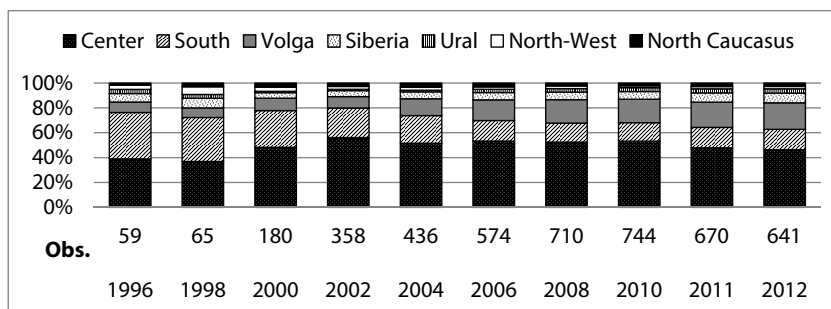
Source: Author's own illustration.

The total agroholding land fluctuated from 5.45 thousand hectares (1995) to 15.17 thousand hectares (2012). During 1995-2012, the following constituted average land holdings per agroholding: minimum 0.03 thousand hectares, maximum 0.10 million hectares, total mean of 8.92 thousand hectares, average sum of 2.35 mil hectares and a standard deviation of 10.98 thousand hectares. The average land of agroholding farms with foreign ownership during 1995-2012 was higher than others' and comprised 18.58 thousand hectares, compared to 8.74 thousand hectares of private agroholding farms, and 3.88 thousand hectares of agroholding farms in state ownership. The average maximum land 1995-2012 was led by the private ownership (0.08 million hectares), foreign ownership (82.46 thousand hectares), followed by state (11.14 thousand hectares). The average sum of total land in agroholdings was led by private (2.15 million hectares), foreign (172.33 thousand hectares) and state ownership (30.59 thousand hectares) (see Table 8-4).

The total agroholding labor's mean ranged from 0.29 thousand persons (2007) to 0.77 thousand persons (2012). During 1995-2012, the following constituted average labor per agroholding: minimum 0.02 thousand persons, maximum 9.23 thousand persons, total mean of 0.48 thousand persons, average sum of 150.99 thousand persons and a standard deviation of 0.85 thousand persons. The average agroholding labor with state-owned farms during 1995-2012 was higher than others' and comprised 0.88 thousand persons, compared to 0.52 thousand persons of foreign agroholding farms, and 0.45 thousand hectares of agroholding farms in private ownership. The average maximum labor employed during 1995-2012 was led by the private ownership (9.23 thousand persons), state ownership (4.13 thousand persons), followed by foreign (2.85 thousand persons). The average sum of total labor force in agroholdings was the highest in private (125.66 thousand persons), state (13.45 thousand persons) and foreign ownership (11.88 thousand persons) (see Table 8-5).

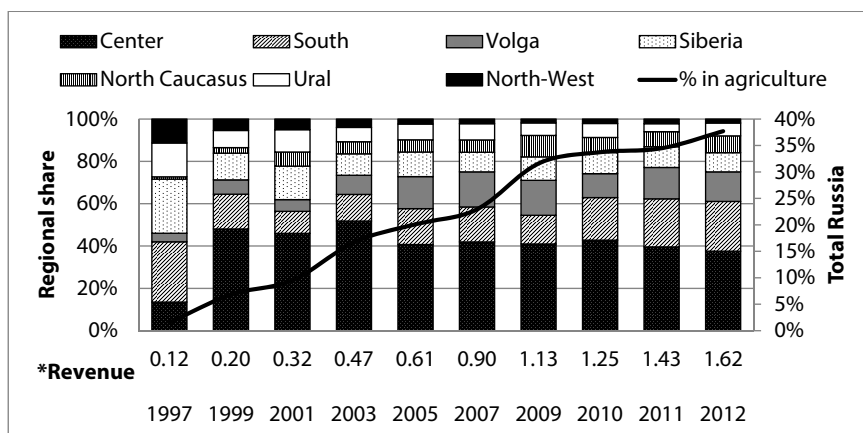
3.2.3 Regional distribution

With respect to regional distribution of agroholding farms in the dataset, their prevalence is evident mostly in three Federal districts, averaging to 48.32 % (Central), 23.96 % (South) and 13.78 (Volga) during 1995-2012. Contrary to South 37.27 % (1995) decrease to 16.38 % (2012), the Center and Volga Federal districts increased their share from 38.98 % (1995) to 46.33 % (2012) for the former and from 8.47 % (1995) to 13.78 (2012) for the latter. The other Federal districts where agroholding farms were present, mainly, remained the same and averaged to 6.12 % (Siberia), 2.69 % (North Caucasus), 2.65 % (North-West) and 2.46 % (Ural), respectively (see Figure 3-4).

Figure 3-4: Regional distribution of agroholding farms Russia, 1996-2012

Source: RUSSIAN STATE STATISTICS SERVICE, author's own illustration.

The agroholdings' revenue share distribution in Russia grew enormously from 1.54 % (1997) to 37.70 % (2012) with leading according to revenue Federal districts of Center, South and Ural. The Central Federal district had a drastic increase in revenues from 0.46 billion rubles (1997) to 373.44 billion rubles (2012). The Southern Federal district increased its revenue share from 0.44 billion rubles (1997) to 101.68 billion rubles (2012). The Volga Federal district increased revenues from 0.19 billion rubles (1995) to 77.40. In 2012 the other Federal districts amounted to 30.31 billion rubles (Siberia), 10.73 billion rubles (Ural), 10.72 billion rubles (North Caucasus) and 4.97 billion rubles (North-West) (see Figure 3-5).

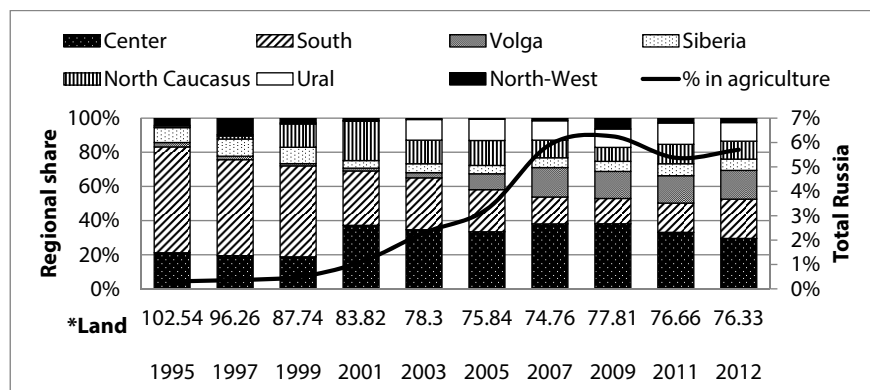
Figure 3-5: Agroholdings' regional revenue distribution in Russia, 1997-2012

Source: Author's own estimation; * Russia's total revenue (trillion rubles).

Note: Agroholdings' number varied, e.g. 25 (1995), 65 (2008), averaging to 7 farms per agroholding (1995-2012).

Concerning the agroholdings' land distribution, the majority occupied the Central Federal district, encompassing, on average 6.22 % of its land (1995-2012). In the South Federal district agroholdings comprised 3.76 % of land, on average during the same period. Agroholdings in the Volga Federal district averaged to 2.33 % of total land (1995-2012). Considering the same timeframe, the following is land shares comprised by agroholdings in the rest of the Federal districts: 1.98 % (North Caucasus), 1.84 % (Ural), 1.08 % (Siberia), and 0.43 % (North-West). The total average agricultural area comprised by agroholdings during 1995-2012 constituted 3.03 %, growing from 0.31 % (1995) to 6.68 % (2008), though falling to 5.70 % (2012) (see Figure 3-6). It must be noted that that farm-level agroholdings' data is available only for 1995-2008 period. The land data on 2009-2012 was formed from the 2008 figures, keeping in mind the *ceteris paribus* principle, i.e. the land of farms for which the other data, such as labor and capital was available, remained constant, to resemble the trend. In realistic terms, considering Russian intelligence updates, such as Interfax and other relevant media, as well as the likelihood of incomplete agroholding subsidiaries' coverage in the dataset, the agroholding land might be much larger than that of represented by Figure 3-6.

Figure 3-6: Agroholdings' regional land distribution in Russia, 1995-2012



Source: Author's own estimation.

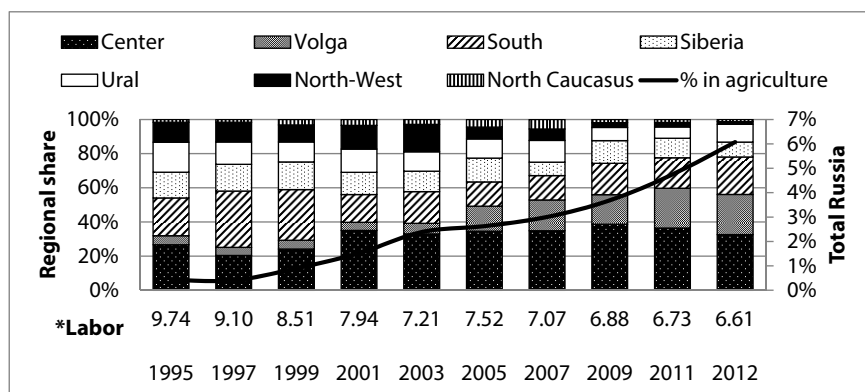
Notes: * Russia's total sown land (million hectares).

Land during 2008-2012 may not represent real figures, as it is calculated based on land data for 2008.

The labor force of agroholdings was most intensively utilized in the Central Federal district averaging to 5.16 % (1995-2012) and increased from 0.01 million persons (1995) to 0.14 million persons (2012). The Volga Federal district averaged to 0.04 % (1995-2012) though drastically increased from 0.004 million persons (1995) to 0.14 million persons (2012). The South Federal district

comprised 2.70 %, on average (1995-2012) and increased from 0.01 million persons (1995) to 0.08 million persons (2012). The following labor shares were comprised by agroholdings in the rest of the Federal districts during 1995-2012: 1.73 % (0.02 million persons) by Siberia, 1.53 % (0.01 million persons) by Ural, 0.94 % (0.004 million persons) by North-West and 0.47 % (0.003 million persons) by North Caucasus (see Figure 3-7).

Figure 3-7: Agroholdings' regional labor distribution in Russia, 1995-2012



Source: Author's own estimation.

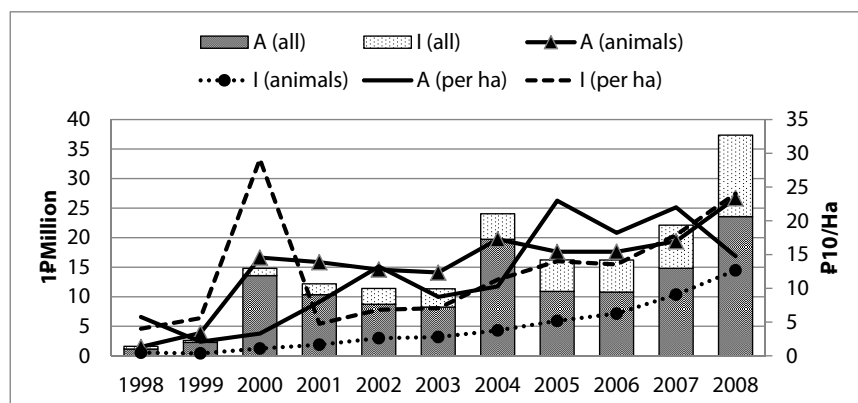
Note: Labor (million persons) during 2009-2012 is calculated using solely the Interfax averaged data.

3.2.4 Subsidies

The course of research prompted to think whether the emergence of agro-holdings was also due to political support. Considering the socio-political perspective, the agricultural complex had to serve a rural employer, as well as revival of export potential of the former state collective enterprises, to be internationally competitive. In the Central Chernozem Federal district the financially sustainable companies, oftentimes unrelated to agriculture, were encouraged or sometimes even pressured to take over insolvent farms. The incentives were the political protection by the regional authorities and tax reductions/waivers, subsidies and better access to financial services, e.g. (Vissier et al., 2012). The major reason stem from the Soviet legacy, such as the belief in the comparative advantage of large-scale production and the mistrust in a free market economy, e.g. (Epshtein et al., 2013). In fact, small farms were regarded as unproductive and backward. This dislike might also have practical reasons since the provision of subsidies is easier to handle with a small number of large farms than vice versa, e.g. (Petrick et al., 2013).

Consequently, with respect to subsidization of agroholding farms compared to that of independent, throughout 1998-2008 the agroholding farms received a much greater support than independent farms in terms of aggregate animal and crop production. Considering the composite animal and crops subsidization, an average 1998-2008 agroholding farm obtained 11.29 million rubles, reaching 23.57 million rubles in 2008. The independent farm received 13.79 million rubles in 2008, respectively. The average subsidization per hectare in crops during 1998-2008, however, was higher in independent farms and amounted to 12.55 million rubles, compared to 11.75 million rubles. It is explained by the heavy subsidization in Russia's agricultural sector during 1999-2000 periods, the post-Russian rubles crisis, and the fact that agroholdings evolved later on, during approximately 2000-2003. The mean subsidies received in animal husbandry were again higher in agroholding farms amounting to a total of 15.23 million rubles compared to 4.77 million rubles of independent farms during 1998-2008. The highest subsidization in animal husbandry was in 2008 with agroholding member farms amounting on average to 26.67 million rubles, compared to that of independent farms to 14.48 million rubles (Figure 3-8).

Figure 3-8: Subsidies in agriculture: Agroholdings vs. independent farms



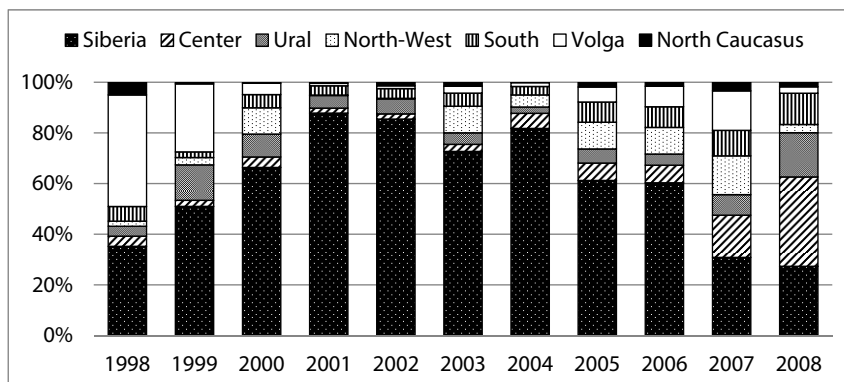
Source: Author's own illustration.

Note: A – agroholding farms, I – independent farms.

Concerning the regional aggregate subsidies distribution of Russia's agroholdings, notwithstanding its minor share of land labor and capital, compared to other Federal Districts, the dominant leader during 1998-2008 was Siberia, constituting 90.44 million rubles per agroholding farm. The followers were the Central Federal District (9.98 million rubles), Ural Federal District (8.51 million rubles), North-Western Federal District (7.94 million rubles), Southern Federal District (4.59 million rubles), Volga Federal District (5.82 million rubles), and

North Caucasus Federal District (1.50 million rubles), on average during the same period (see Figure 3-9).

Figure 3-9: Regional share of aggregate agricultural subsidies in agroholdings, 1998-2008



Source: Author's own illustration.

It is interesting to note that along with the subsidies cut for Siberian Federal District (see Figure 3-9), and the fact that most agroholdings began their vast development during 2002-2004 (see Chapter 5, the total presence of integrated structures in agricultural greatly reduced during the same period (see Figure 3-4).

3.3 BACKGROUND AND HYPOTHESES

There exists a myriad of conducted studies evaluating ownership-performance relationships. All of them convey different conclusions. According to DEMSETZLEHN (1985), DEMSETZVILLALONGA (2001), no significant relationship was found between shareholder concentration and average profit rate, i.e. there was no empirical relationship established between ownership structure and firm performance. Ownership structure was, therefore, found to vary depending on encountered circumstances, with respect to economies of scale, regulations, and institutional stability the firms operated in. DAILYDALTON (1992), as well as LEHMANNWEIGAND (2000) found positive and negative relationship between corporate governance and performance, e.g. positive impact of board size and negative effect of concentrated ownership on profitability.

Following the objectives of this thesis, the relationship between types of legal ownership forms, i.e. private versus state, in Russia's agroholdings are scrutinized, and membership-performance correlation is examined. Considering the theory of the firm and Russia's wayward and unorthodox nature of the legal,

political, and socio-economic environment, the following are the fundamental hypotheses of this Chapter of the thesis:

- Private agroholding ownership is positively correlated with firm performance
- Agroholding membership is negatively related to farm performance

3.4 METHODOLOGY

The assessment of peculiarity and firm performance necessitates categorization, e.g. DAILYDOLLINGER (1993). Agroholdings, therefore, were identified as state (federal, regional, municipal), and private (person(s), partners). The methodology applied was to look for the legal ownership form of the principal shareholder with the largest amount of charter capital stock. Accordingly, dummy variables were generated specifying whether the principal shareholder was a private owner (=1) or not (=0).

In this study, the economic performance of agroholdings constitutes the dependent variable. In compliance with the preponderant scholarly work scrutinizing the impact of corporate ownership on economic performance in transition economies, e.g. FRYDMAN et al. (1999), KUZNETSOV/MURAVYEV (2001), PIVOVARSKY (2003), accounting indexes, i.e. natural logarithms of total revenue (net of value-added taxes), gross profit, labor productivity (revenue per 1 employee) and land productivity (revenue per 1 hectare of land), were used as performance indicators. Contrary to mainstream studies on developed economies, however, utilization of Tobin's Q as a main performance indicator, measured by the market value of total assets over replacement costs of assets, e.g. ANDERSON/REEB (2003), or a ratio of sum of market value of equity and book value of debt to book value of assets, e.g. AGGARWAL/SAMWICK (2006), was omitted from potential estimation due to the absence of such data. Most of the agroholdings in Russia and those analyzed in this dissertation are not publically listed. Table 2-1 provides more references regarding the methodologies and measurements used in scholarly research.

3.4.1 Reverse causality

Any econometric Ordinary Least Square model analyzing ownership-performance relationship, including the model above, potentially suffers from endogeneity, i.e. an existing reverse causation between ownership and performance inflicted by unobserved heterogeneous state of affairs in firms, while contracting, e.g. (HIMMELBERG et al., 1999). A concentrated ownership was long found to have an impact on profitability by (BERLE/MEANS, 1932). Notwithstanding, a structure of ownership was also found to significantly vary in accordance with firm profit rates, industry, and size, e.g. (DEMSETZ/LEHN, 1985).

Considering the dual correlation assumption with OLS individual equations, the most frequently applied methods reducing a potential reverse causation are proxies, fixed effects, lagged dummies, and instrumental variables performed within 2SLS simultaneous equations, treating ownership as endogenous, e.g. (DEMSETZVILLALONGA, 2001). The 3SLS estimations also allow a more robustness capturing the cross-equation effects, e.g. (ZELLNERTHEIL, 1962). Unfortunately, however, all of these controls are weak and never fully reliable due to their own potential causal duality bias, e.g. (COLES et al., 2012).

Notwithstanding the simultaneous equations bias due to potentially endogenously correlated ownership and performance, the precision of the OLS correlation results are assumed NOT to be compromised due to insignificant ownership changes within the panel. In addition, fixed-effects estimator is used to satisfy the model accuracy and control for potentially existing unobserved endogeneity within the annual ownership variations (see Table 3-5).

Table 3-5: Descriptive statistics of ownership changes in the dataset, 1995-2008

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of farms	58	58	61	64	101	139	245	299	352	383	457	533	588	616
Ownership changes	0	0	0	0	2	5	2	4	3	1	6	8	4	14

Source: Author's own illustration.

3.5 MODEL

Similar to (HIMMELBERG et al., 1999), the following is the OLS multiple linear regression model constructed in this section to analyze the ownership-performance relationship in agroholdings during 1995-2008:

$$\pi_{i,t} = \alpha_0 + \ln Pf_{i,t} + \beta Own_{i,t} + \beta C_{i,t} + e_{i,t} \quad (1)$$

signifying the profitability (π) of a firm (i) at time (t) is dependent on production elasticity ($\ln Pf_{i,t}$) and ownership structure ($\beta Own_{i,t}$), encompassing an error term ($e_{i,t}$) for the same firm and time.

The elaboration of the above equation is as follows:

$$\begin{aligned} \pi = & \alpha_0 + \alpha_{Ta} \cdot \ln Ta + \alpha_L \cdot \ln L + \alpha_a \cdot \ln A + \alpha_{Amort} \cdot \ln Amort + \alpha_{Cost} \cdot \\ & \ln Cost + \delta_{Uprivate} \cdot D_{Uprivate} + \delta_{Uforeign} \cdot D_{Uforeign} + \delta_{Ustate} \cdot D_{Ustate} + \\ & \delta_{Uchanges} \cdot D_{Uchanges} + \delta_{Umember} \cdot D_{Umember} + \delta_{Ucentrer} \cdot D_{Ucentrer} + \\ & \delta_{Unorthwest} \cdot D_{Unorthwest} + \delta_{Usouth} \cdot D_{Usouth} + \delta_{Ucaucasus} \cdot D_{Ucaucasus} + \\ & \delta_{Uvolga} \cdot D_{Uvolga} + \delta_{Uural} \cdot D_{Uural} + \delta_{Usiberia} \cdot D_{Usiberia} + \delta_{Ufareast} \cdot \\ & D_{Ufareast} + \varepsilon \end{aligned} \quad (2)$$

Accordingly, π represents dependent variables for farm performance consisting of natural logarithms of total deflated for inflation revenue, gross profit, land productivity (revenue per 1 hectare of land), and labor productivity (revenue per 1 employee). The farms' size labor and land constituting the independent variables are represented in natural logarithms by the amount of farms' total value of assets ($\ln Ta$), total number of persons employed ($\ln L$), and the total number of hectares ($\ln A$), respectively. The amortization and total cost are represented by natural logarithms of ($\ln Amort$) and ($\ln Cost$). The core control variables testing the hypotheses are represented by dummy variables of ultimate ownership types, i.e. private ownership, ($D_{Uprivate}$), foreign ownership (including other types) ($D_{Uforeign}$), state ownership (D_{Ustate}), and change of ownership from private and/or foreign (including other types) to state ($D_{Uchange_s}$). The equation was further controlled for regional distribution of agroholdings farms by the seven represented Federal districts of Russian Federation: Center (D_{Center}), Northwest ($D_{Unorthwest}$), South (D_{Usouth}), North Caucasus ($D_{Ucaucasus}$), Volga (D_{Uvolga}), Ural (D_{Uural}), Siberia ($D_{Usiberia}$), Far East ($D_{Ufareast}$).

3.6 RESULTS

Ordinary Least Squares (OLS) multiple regression analysis was conducted to investigate the relationship between private ownership and agroholding economic performance, compared to that of the state. Similarly, agroholding member farms were compared with the independent standalone farms to examine the differences group membership makes on farm performance. Dependent variables of \ln_rev (Model I), \ln_prof (Model II), $\ln_labprod$ (Model III), and \ln_land (Model IV) were utilized as economic performance indicators, representing natural logarithms of revenue, gross profit, labor productivity, i.e. revenue/employee, and land productivity, i.e. revenue/hectare. The independent variables were comprised of \ln_land , \ln_labor , \ln_tasset , \ln_amort , \ln_cost and signifying natural logarithms of total farmland, persons employed, assets, amortization, and cost of goods sold. The equations were controlled by ownership, membership types, change in membership and seven regional dummies represented by d_priv (privately owned farm), $d_foreign$ (foreign owned farm), d_change_s (private or foreign ownership change to state), d_member (agroholding member farm), $d_northwest$ (Northwest Federal district), d_sout (Southern Federal district), $d_caucasus$ (northern Caucasus Federal district), d_volga (Volga Federal district), $d_siberia$ (Siberian Federal district), and $d_fareast$ (Far East Federal district). Private and foreign ownership dummies were compared with the state, where the seven district dummies correlated with the Central federal district.

The estimation results reveal private ownership to have a negative relationship with the Total Revenue (Model I), Labor Productivity (Model III), and Land Productivity (Model IV), highly statistically significant at 0.01 % for the latter. Profitability (Model II) presented positive association with farms' private ownership, also highly statistically significant at 0.01 %. Foreign ownership, in comparison to that of the state, exhibited positive relationship throughout all four models and was highly statistically significant at 0.01 % for gross profit (Model II) and Labor Productivity (Model III) and Land Productivity (Model IV). With respect to regional location differences, farms compared with the Central Federal district having the most fertile chernozem soil portrayed the following: Northwest and South Federal districts led the highest statistical positive significance for total revenue (0.05), gross profit (0.05), Land productivity (0.01) for the former and total revenue (0.05) and gross profit (0.01) for the latter. The other districts had either negative (0.01) highly statistically significant or insignificant positive relationship with all four models, especially Volga and Far East Federal districts. The ownership data accuracy was checked by various sources. The likelihood estimation outcome was ascertained with the R2 coefficient of determination lying within close proximity towards 1 for all models, i.e. Model I (0.9659), Model II (0.7112), Model III (0.7170), and Model IV (0.5374) (see Table 3-6).

Table 3-6: OLS regression results of Russia's agroholdings' economic performance

MODELS		I	II	III	IV
Dependent variables		Total Revenue	Gross Profit	Labor Productivity	Land Productivity
<i>Constant</i>		-0.7521*** (-16.39)	-3.2117*** (-15.00)	0.4208*** (4.76)	-6.6107*** (-40.39)
PRODUCTION	ln_land	-0.0167*** (-4.80)	-0.0301* (1.74)	-0.0797*** (11.73)	— —
	ln_lab	0.0917*** (12.99)	0.1670*** (5.44)	— —	-0.1971*** (-7.11)
	ln_asset	-0.0016 (-0.20)	0.1752*** (4.57)	-0.1878*** (-12.30)	-0.2021*** (-6.48)
	ln_amort	-0.0081 (-1.58)	0.0089 (0.39)	0.0217** (2.16)	-0.1647*** (-8.18)
	ln_cost	1.0405*** (137.76)	0.7961*** (23.06)	0.7044*** (50.53)	1.2885*** (43.28)
	d_privat	-0.0067 (-0.42)	0.4400*** (6.21)	-0.0192 (-0.61)	-0.3967*** (-6.31)
OWNERSHIP	d_foreign	0.0179 (0.63)	0.6496*** (5.50)	0.4810*** (8.71)	0.3922*** (3.50)
	d_member	-0.0272* (-1.79)	-0.0077 (-0.12)	0.1338*** (4.48)	-0.0480 (-0.80)
	d_change_s	-0.0245 (-0.40)	0.3466 (1.34)	-0.0916 (-0.76)	0.5647** (2.33)
	d_northwest	0.0353** 2.48	0.1296** (1.96)	0.0108 (0.39)	0.4362*** (7.76)
DISTRICTS	d_south	0.0561** (9.88)	0.1509*** (6.84)	-0.0285** (-2.57)	-0.0463** (-2.06)
	d_caucasus	-0.0017 (-0.33)	-0.0314 (-1.36)	-0.1384*** (-13.99)	0.1128*** (5.55)
	d_volga	-0.0097** (-2.89)	-0.0465*** (-3.19)	-0.0378*** (-5.71)	-0.0561*** (-4.20)
	d_ural	-0.0291*** (-5.14)	0.0253 (0.87)	-0.0737*** (-6.63)	0.0209 (0.93)
	d_siberia	-0.0210*** (-6.89)	0.0192 (1.42)	-0.0467*** (-7.81)	-0.0749*** (-6.21)
	d_fareast	-0.0739*** (-21.29)	-0.0915*** (-3.47)	-0.0648*** (-9.48)	-0.1417*** (-10.31)
	Observations	5,782	3,444	5,782	5,782
ll		-2,984.04	-5,951.01	-6,896.39	-10,951.51
df_m		16.00	16.00	15.00	15.00
mss		26,878.63	15,735.97	9,317.36	17,371.88
rss		950.33	6,389.33	3,677.90	14,954.48
rmse		0.4060	1.3654	0.7987	1.6105
r2		0.9659	0.7112	0.7170	0.5374
r2_a		0.9658	0.7099	0.7162	0.5362
F		10,190.86	527.51	973.81	446.54

Source: Author's own illustration. t statistics in parentheses, * p<0.10, ** p<0.05, *** p<0.01.

Note: Natural logarithms of production variables were obtained upon adjusted for inflation.

3.7 CONCLUSION

The impact of corporate ownership on economic performance of Russia's agroholdings was the foundation of this Chapter of thesis. Using a unique dataset on corporate and farm-level data compiled from the databases of Interfax as well as Russian Institution of Agrarian Problems and Informatics, there were a total of 65 Russia's largest agroholdings collected and evaluated in terms of economic and financial performance during 1995-2008. Controlling for ownership composition, i.e. Private, Foreign, and State agroholdings, Business Group Membership, and Regional Distribution, the Ordinary Least Square multivariate regression analysis was applied and confirmed private agroholding ownership to be statistically significantly at 0.01 % positively related to the financial performance of agroholdings, i.e. the gross profit. However, Private ownership was negatively related to Land Productivity, also statistically significant at 0.01%. Foreign ownership was found to be statistically significant at 0.01 % and positively associated with Gross Profit, Labor and Land Productivity. With respect to regional distribution, agroholdings in all districts, except those in the North West and partly South Federal district, were found to have inferior performance compared to the Central Federal district (rich in minerals chernozem), generally statistically significant at 0.01 % for all four models.

There is a positive relationship between gross profit and private and foreign agroholding ownership. Contrary to foreign ownership, the privately held agroholding farms exert a negative influence on land productivity, statistically significant at 0.01 %. This suggests that agroholdings with foreign ownership use farmland in a much more efficient fashion. This also might stem from the fact that due to discounted prices of land, much of agroholdings' land is not utilized. Yet, due to absence of data on operated versus hollow land, the entire land in possession was included in the estimation.

Concerning the regional spread, the results attest to the fact that climatic conditions and soil quality play a poignant role, considering the agroholding profitability. Hence, Central, Northwest, and South Federal districts revealed higher performance indices, compared to the rest.

Given colossal differences existing between the Russian and corporate governance throughout the world, it is reasonable to assume that, perhaps, conventional theory in the West would not be applicable in the region where legal and political environments are not strongly enforced, as they, otherwise, would be in the developed economies. Notwithstanding, our results lie intact with a preponderant literature on Russia, suggesting that state participation, i.e. a mixed state and private ownership is beneficial for profitability, due to "checks and balances" enforced bilaterally. Mixed private-state ownership improves

performance due to improved monitoring preventing from private gains and private investors prevent state from exercising political & social benefits of control, e.g. (LUCY CHERNYKH, 2008). It might be for this reason that private ownership alone, is shown to exert negative relationship with the total revenue, labor and land productivities in the conducted estimations, though only statistically significant for the latter.

4 ULTIMATE OWNERSHIP IMPACT ON FARM PERFORMANCE: AN IN-DEPTH EMPIRICAL SCRUTINY OF BELGOROD AND MOSCOW OBLASTS

4.1 BACKGROUND AND HYPOTHESES

The following Chapter of the dissertation analyzes the impact of ultimate ownership on economic and financial performance⁵ of Russia's agricultural farms in 2001, 2004, and 2007. Using three exclusive databases (Professional Market and Company Analysis System, the First Independent Rating Agency, along with the State Statistics Committee of Belgorod Oblast and Belgorod affiliate of Russian Research Institute of Agricultural Economics), a unique pooled unbalanced dataset was compiled, comprising corporate firm⁶ and farm-level⁷ data, representing 242 farms in regions of Belgorod (68 farms) and Moscow (174 farms).

Both oblasts are strategic Russian agricultural regions where Moscow farms are of crucial importance, with respect to the food supply to the Russia's capital, necessary for sustainability of its economic development and growth. Belgorod oblast is a well-known for its remarkable chernozem soil fertility and is, particularly, thought-provoking when it comes to reasons behind business groups' emergence and development. It is, thus far, the only known region where agroholdings emerged as a result of the oblast governor's decree to establish the integrated structures within the agricultural sector and, thereof, help stimulate reorganization of a priori insolvent agribusiness firms, e.g. WANDEL (2007).

Similar to Chapter 3, in this section the two principal aims of this thesis were complimented from the Corporate Governance perspective following LA PORTA et al. (1999), to portray the corporate ownership in Russia's agricultural sector, analyze the performance of agricultural farms on the basis of Belgorod and Moscow oblasts. The principal idea here was to compare the member versus independently held farm performance, regardless if the farm belonged to a huge agroholding, new agricultural operator, or a small farmer. As long as the farm was owned by a legal entity (firm/farm) through more than two ownership levels – it

⁵ Economic are labor, land productivities, man/land ratio; financial are revenue, gross profit, Return on Assets, Return on Sales, and Return on Equity.

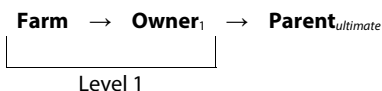
⁶ Data from Financial Statements, authorized to be submitted to and published by the Federal State Statistics Service of the Russian Federation.

⁷ Farm's input and output micro data which is not included in usual Financial Statements of Russian firms.

was defined as a *de facto* agroholding (see Figure 4-1). Consequently, the following hypotheses were tested:

- Private Ultimate Ownership outperforms that of the State
- Stand-alone farms are more efficient than the member-farms
- Consolidated Ownership and Control outperforms that of dispersed

Figure 4-1: *De facto* Agroholding ownership depiction



Source: Author's own illustration.

4.2 DATA

The Federal State Statistics Service was used in the analysis of this Chapter. The data incorporated input and output farm-level variables, such as land size, amortization, material costs, and production volumes. Only three years of data from two of 89 Russian oblasts were feasible to cover due to data availability at the beginning of the Ph.D. project. The ownership data was complimented by the First Independent Rating Agency and the Professional Market and Company Analysis System online databases, where the data were manually collected via extremely scrupulous process, taking into account only the available years. The reason for such meticulousness and difficulty in ownership tracing lies behind the fact that within five years of time, any of the examined farms (or firms, considering levels of corporate farms) might have gone through several mergers or acquisitions, whereof, the Chief Executive Officers, along with other important heads of organizations, also might have changed. This necessitated peculiar attention to ascertain the proper data collection, so that any changes within the management or executives corresponded with the respective year of observations.

4.2.1 Ownership tracing

The bottom-up approach was utilized in this Chapter, e.g. commencing with a farm for which the data was available, the author moved up through ownership levels, until the ultimate majority shareholder was reached. The largest shareholders were traced and the majority shareholding ownership structures were investigated, categorizing farms into stand-alone and corporate types. Similar to (LA PORTA et al., 1999), the ultimate ownership of stand-alone and corporate farms was classified into Private (family 20 % plus 1 share), State (federal, regional, municipal 1 % plus 1 share), Financial (banks, trusts, other financial institutions 5 % plus 1 share), Widely-held (no single controlling shareholder, e.g. 5 or more

owners, each with 20 % or less stock), and Foreign proprietors (legal entities and/or physical persons) and their agricultural farms.

4.2.2 The dataset

The dataset incorporated the following variables utilized to analyze performance of agroholding member farms and stand-alone non-member farms (see Table 4-1).

Table 4-1: Description of data in the Belgorod-Moscow agroholding dataset, 2001-2007

VARIABLE		DESCRIPTION
FARMS		
Agroholding	Dependent corporate ownership (units)	
Stand-alone	Independent ownership (units)	
SIZE		
Land	Total arable soil (hectares)	
Assets	Total current and long-term assets (rubles)	
Labor	Total number of employed (persons)	
PERFORMANCE		
Financial	Total revenue, gross profit, return on assets, sales, equity (rubles)	
Economic	Labor productivity (revenue/labor), land productivity (revenue/land)	
PRODUCTION		
Subsidies	State support for crops, animal husbandry (rubles)	
OWNERSHIP		
Private	Privatized farms (ownership codes, dummies)	
Foreign	Foreign legal and physical entities, and other ownership types (ownership codes, dummies)	
State	Federal, regional, municipal farms (ownership codes, dummies)	
INDUSTRY		
Holding-level	Agricultural/non-agricultural main activity of umbrella firms (industry codes, dummies)	
Farm-level	Agricultural/non-agricultural main activity of dependent/independent farms (industry codes, dummies)	

Source: Author's own illustration.

4.2.3 Regional distribution

The unbalanced Belgorod-Moscow dataset contains a total of 726 observations during 2001, 2004, and 2007, comprising 271 dependent agroholding member farms and 455 independent non-member farms. During the respective period the average farm revenue of dependent member farms constituted 58.01 million rubles and the average gross profit of 9.79 million rubles. The average farm labor amounted to 256 persons, with an average land of 2.80 thousand hectares. Considering Belgorod oblast, the average of all production indicators were

higher in independent non-member farms, e.g. revenue (50.32 %), gross profit (75.85 %), labor (35.77 %) and land (11.92 %) compared to that of dependent member farms. Similarly, most of the production values were greater in privately held farms, during 2001-2007, e.g. revenue (33.25 %), gross profit (34.43 %), labor (16.47 %), except the land, which was slightly lower by 0.02 %, on average, compared to the state farms. With regards to Moscow oblast, the situation is on the contrary with most indicators favoring dependent member farms, e.g. revenue (55.67 %), gross profit (82.79 %), labor (28.26 %) being higher compared to independent farms, except the land, which is lower by (9.41 %). Moscow farms in private ownership while employing less labor (4.80 %), their farmland is greater, on average, by 14.79 %, revenue by 8.53 % and gross profit by 40.53, than that of the state owned farms (see Table 4-2 and Table 8-6 for elaborated descriptive statistics Appendix).

Table 4-2: Descriptive average statistics of farms in Belgorod and Moscow (2001-2007)

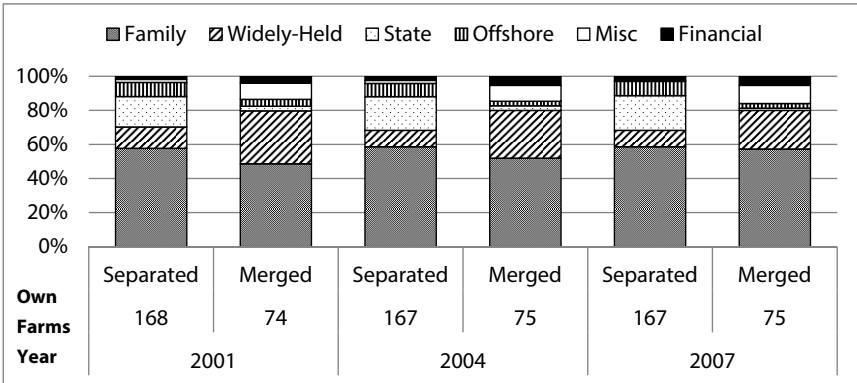
		2001	2004	2007
BELGOROD	TOTAL	68	68	68
	Independent	39	39	39
	Revenue	44.33	43.41	49.35
	Profit	12.07	9.21	10.56
	Labor	341	287	215
	Land	4.17	4.42	4.45
	Dependent	29	29	29
	Revenue	19.56	21.32	27.21
	Profit	2.55	1.17	3.97
	Labor	206	187	148
	Land	3.33	4.10	4.05
	Private	64	64	65
	Revenue	34.26	34.90	40.46
	Profit	8.13	6.08	7.76
	Labor	284	251	186
	Land	3.81	4.26	4.29
MOSCOW	State	4	4	3
	Revenue	25.85	19.40	27.92
	Profit	6.06	0.93	7.42
	Labor	267	146	190
	Land	3.82	4.59	3.96
	TOTAL	174	174	174
	Independent	120	112	106
	Revenue	32.71	31.29	35.37
	Profit	3.90	0.42	2.48
	Labor	268	204	161
	Land	2.72	2.57	2.41
	Dependent	54	62	68
	Revenue	67.32	76.53	80.33
	Profit	12.86	8.17	18.50
	Labor	391	288	204
	Land	2.28	2.35	2.33
	Private	146	145	432
	Revenue	43.53	47.51	54.85
	Profit	6.59	3.31	10.04
	Labor	308	230	175
	Land	2.68	2.54	2.43
	State	33	28	29
	Revenue	43.16	46.89	43.40
	Profit	7.06	2.53	2.27
	Labor	299	259	191
	Land	2.17	2.21	2.13

Source: Author's own illustration.

Note: Revenue and profit depicted in (million rubles), labor (persons), and land (thousand hectares).

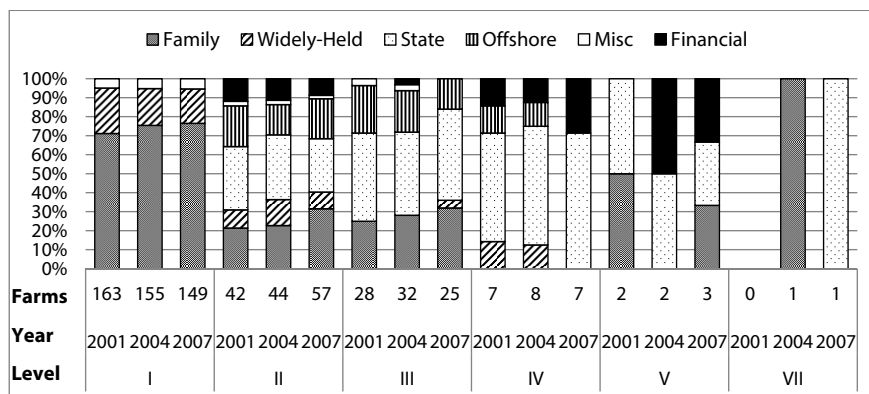
With regards to Russia’s farms’ ultimate ownership type and control classification, during 2001-2007, on average, most farm’ ownership was separated from management or other means of control, such as board director, or a trustee (entitled to act without a warrant) and greater than the merged ownership and control by 58.37 %. In general, larger private shareholding, e.g. umbrella firms owned by families with 75 %-100 % shares, facilitated separation of ownership from control, whereas lower than 75 % ownership stake necessitated principal charter capital owners to serve as chief executives, board members, directors, or trustees, to establish mechanism of control in their firms. Considering the State ownership, the separated ownership from control was 19.32 % higher than the merged. The ownership and control consolidation did not play a significant role for the other ownership types (see Figure 4-2 and Table 8-7 for Belgorod-Moscow descriptive statistics).

Figure 4-2: Belgorod-Moscow farms’ ultimate ownership and control distribution (2001-2007)



Source: Author’s own illustration.

Concerning the way the farms are owned according to the levels of ownership in the Russian Federation, during 2001-2007 most were owned through levels I (64.33 %), II (19.70 %) and III (11.71 %), with levels IV, V and VII constituting 4.27 % of the total share. Regardless of ownership levels, the share of farms owned by families, state, and financial institutions owned gradually grew by 3.31 % (family), 1.24 % (state), and 0.83 % (financial), compared to a decreasing share of widely-held farms (-4.55 %), offshore (-0.41 %), and other (-0.41 %), during 2001-2007, respectively (see Figure 4-3 and Table 8-8 for Belgorod-Moscow dataset descriptive statistics).

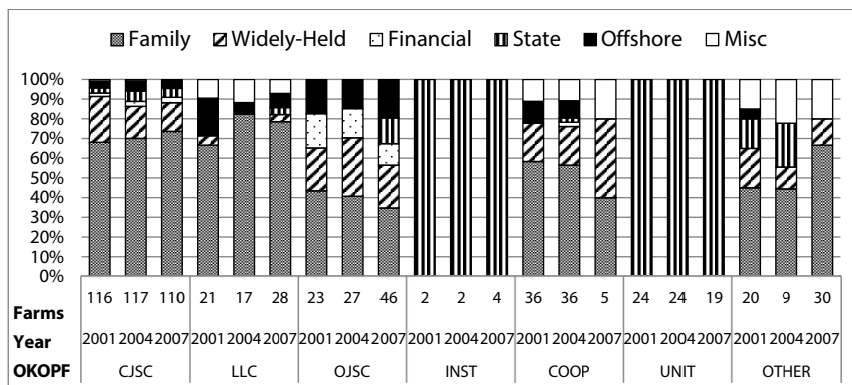
Figure 4-3: Russia's farms' ultimate ownership distribution by ownership levels (2001-2007)

Source: Author's own illustration.

Note: Roman numerals represent the number of levels the dataset happened to contain in the sample.

Contrary to the whole Russia, where on average the majority of enterprises incorporated in a form of a Limited Liability Company, most of the farms in Belgorod and Moscow during 2001-2007 were, on average, incorporated as Closed Joint Stock Companies (47.25 %), followed by the Open Joint Stock Companies (13.22 %), Cooperatives (11.98 %), and state owned Unitary Enterprises (9.23 %). The rest constituted the Institutional (1.10 %) and Other (8.13 %) types of legal entities (see Figure 4-4 and Table 8-9 for Belgorod-Moscow descriptive statistics).

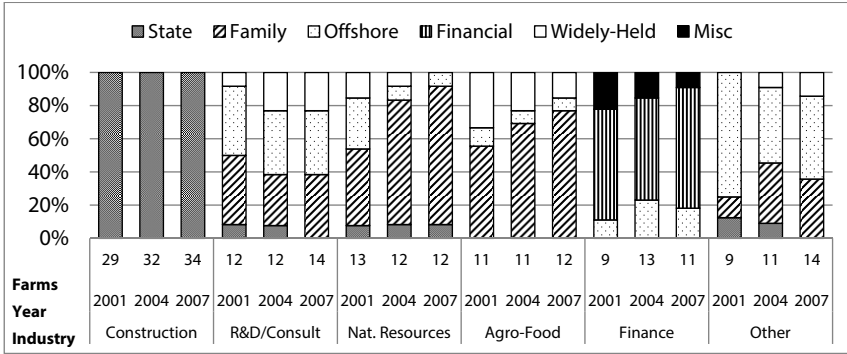
Figure 4-4: Russia's farms' legal organizational form distribution (2001-2007)



Source: Author's own illustration.

Note: CJSC (closed joint stock), LLC (limited liability), OJSC (open joint stock), INST (institution), UNIT (unitary), OTHER (all other types of companies).

The industries the farms' parent companies operated in during 2001-2007 were, on average, mainly comprised of Construction (35.06%) and fully pertained to the government ownership. The other industries comprised Research and Development along with Consulting (14.02%), Natural Resources (13.65%), Agriculture and Food (12.55%), Finance (12.18%), and Other industry types, comprising also those that serve the Federal Government (12.55%). Considering all 271 farms during 2001-2007, regardless the industry, most farms were, on average, owned by the States (37.70%), Families (26.77%), Offshore zones (17.82%), Financial Institutions (8.09%), were Widely-Held (7.75%), and owned by Other types of owners not listed afore (1.88%) (see Figure 4-5 and Table 8-10 for Belgorod-Moscow descriptive statistics).

Figure 4-5: Russia's farms' ultimate owners' industry distribution (2001-2007)

Source: Author's own illustration.

Note: Other includes industries pertinent governmental control.

4.3 METHODOLOGY

The OLS equation constructed in this Chapter to test the hypotheses pertaining to the analysis of the impact of ultimate ownership types on performance of Russia's farms is as follows:

$$\pi_{i,t} = \alpha_0 + \ln Pf_{i,t} + \beta Own_{i,t} + \beta MemCons_{i,t} + \beta C_{i,t} + e_{i,t} \quad (1)$$

Where $\pi_{i,t}$ is performance of firm i at time t , α_0 is a constant, Pf is a production function, Own is ownership structure, $MemCons$ is membership and consolidation, C is control variables, and e – the error term.

The equation may be rewritten as the multiple linear regression model presented below:

$$\begin{aligned} \pi = & \alpha_0 + \alpha_{Sf} \cdot \ln Sf + \alpha_{Lf} \cdot \ln Lf + \alpha_{Af} \cdot \ln Af + \alpha_{Cost} \cdot \ln Cost + \delta_{UState} \cdot \\ & D_{UState} + \delta_{UMember} \cdot D_{UMember} + \delta_{UOwnCeo} \cdot D_{UOwnCeo} + \delta_{USize} \cdot D_{USize} + \\ & \delta_{UDiver} \cdot D_{UDiver} + \delta_{UIndus} \cdot D_{UIndus} + \delta_{Belgorod} \cdot D_{Belgorod} + \delta_{UIncorp} \cdot \\ & D_{UIncorp} + \delta_{UAge} \cdot D_{UAge} + \delta_{Time} \cdot D_{Time} + \varepsilon \end{aligned} \quad (2)$$

Accordingly, π represents dependent variables of farm performance, which consist of natural logarithms of economic performance indicators, i.e. revenue (Rev), gross profit ($Prof$), revenue per 1 employee ($LabProd$), revenue per 1 hectare of land ($LandProd$), as well as financial performance indicators, i.e. natural logarithms of farms' Return on Assets (ROA), Return on Sales (ROS), and Return on Equity (ROE). The farms' size (S), labor (L), and land (A), constituting the independent variables, are represented in natural logarithms by the amount of farms' total value of assets, total number of persons employed, and the total

number of hectares, respectively. The rest of the Cobb-Douglas production type function is represented by Cost of Goods Sold (Cost).

The core control variables testing the hypotheses are represented by dummy variables of farms ultimate owners' types, i.e. Private versus State. State ownership (D_{Ustate}) represents any federal, regional, or municipal ultimate ownership of the sampled farms. The shareholding distribution here ranges from one to a hundred. The reason lies behind the fact that in Russia there exists the Golden Share principle, e.g. CHERNYKH (2005), which allows the state authorities via owning solely 1 (golden) share in a firm (Joint Stock Company), to have a major impact on its decision making, as well as veto power. That is why, although at first glance the farm might have appeared to be owned by a widely-held, financial or foreign firm, as long as government's presence was caught, such farm automatically gained status of the state farm.

State ownership was compared with the Private ownership $D_{UPrivate}$ to verify the differences in ownership-performance relationship, which constitutes Family, Widely-Held, Financial, and Foreign ownership. The Family ownership is composed of 20-100 shares. The Widely-Held ownership incorporate 0.1 %-20 % of total shares with 5 or more owners, e.g. one possesses insufficient control to have a solid impact on the corporation, unless one is a CEO or is on the board of directors, which enables one to influence the firm's decisions. Similar to (LA PORTA et al., 1999), the Financial ownership represented by any financial institution, such as a bank or a pension fund or an insurance company at 20 % of stock cutoff, also comprised the private ownership. The Foreign ownership, e.g. ultimate owners being physical or legal entities registered in foreign countries was integrated into Private ownership at a cutoff of 1 %-100 %. The rationale steams from the idea that as long as the farm is owned with 1 % by a foreign investor, such investor might siphon (via transfer pricing and other techniques) the farms' capital overseas.

To test the ownership and control consolidation and membership hypotheses, dummies ($D_{UOwnCeo}$) and ($D_{UMember}$) were created. The consolidated ownership ($D_{UOwnCeo}$) attained status of 1 if a Chief Executive Owner was also an Owner of the firm he/she operated. The farm membership ($D_{UMember}$) was represented by dummy 1 if a farm was a subsidiary of another firm/farm.

Similarly, the ultimate owners' size (D_{USize}), diversification of activities (D_{UDiver}), industry (D_{UIndus}), and age (D_{UAge}) were used. Ultimate owners' size represented their total value of assets. Diversification portrayed Ultimate Owners' involvement in less than 10, 10-20 and over 20 activities, e.g. financial intermediation, holding, or farming. The Ultimate Owners' industry comprised agriculture, food, research, financial, consulting, construction, natural resources, and federally

connected activities, as defined by the OKVED code of the Russian Federal State Statistics Service. The other dummy variables were given for the Ultimate Owners' Russian classification of types of business entities (D_{Uokopf}) represented by Closed joint Stock Companies (CJSC), Limited Liability Companies (LLC), Open Joint Stock Companies (OJSC), and Institutions (INST). All the financial indicators, before having been converted into natural logarithms were adjusted for the observed year's Russia's inflation within the industry.

4.3.1 Reverse causality

Similar to Subsection 3.4.1 of the Chapter 3, the potentially endogenously correlated ultimate ownership and farm performance, are assumed NOT to suffer from the endogeneity bias due to insignificant ownership changes within the 2001-2007 Belgorod-Moscow panel. The Fixed-effects estimator was used to control for model accuracy and potentially existing unobserved reverse relationship within potential yearly ownership deviations (see Table 3-5).

Table 4-3: Descriptive statistics of ownership changes in Bleogors-Moscow dataset, 2001-2007

	2001	2007	2008
Number of farms	242	242	242
Ownership changes	0	3	6

Source: Author's own illustration.

4.4 RESULTS

Using the Fixed-Effects Ordinary Least Squares (OLS) linear regressions analyses, 7 models were conducted analyzing the impact of ultimate ownership of Russia's farms on their economic and financial performance. The financial performance was represented by the following variables: natural logarithms of Total Revenue, Gross Profit, Return on Assets, Return on Sales, Return on Equity, Labor Productivity (revenue per 1 employee), and Land Productivity (revenue per 1 hectare of land).

State ownership, in comparison with that of Private, proved to exert a negative impact on performance concerning Total Revenue (Model I), Labor Productivity (Model VI), and Land Productivity (Model VII). However, regardless of positive or negative impact, the significance of the results was insignificant for all models.

With respect to agroholding membership, the negative impact was found in farms owned by agroholdings for all the performance indicators, except the Return on Sales (Model IV) and Return on Assets (Model III), albeit highly statistically significant at 0.01 % only for Total Revenue (Model I) and Labor Productivity (Model VI).

The consolidated ultimate ownership and control demonstrated positive impact on Gross Profit (Model II), Return on Assets (Model III), Return on Sales (Model IV), and Return on Equity (Model V), however was statistically insignificant. A situation when Ultimate Owner was also a Chief Executive Officer of the firm or corporation he/she had shareholdings in, the impact of consolidated ownership and control proved to be negative for Total Revenue (Model I), Land Productivity (Model VII), and Labor Productivity (Model VI), only statistically significant at 0.05 % for the latter.

The size of Total Assets of ultimate owners, e.g. d_u_ta1 (< 100 million RUR) and d_u_ta2 (100 million RUR – 1 billion RUR) reveal negative correlation with performance, compared to d_u_ta3 (> 1 billion RUR) for all models, except Return on Equity (Model V) and Total Revenue (Model I for d_u_ta1). The results show negative influence and the only statistical significance for ultimate owners earning below 100 million RUR at 0.05 % of statistical significance for Land Productivity (Model VII). High diversification of activities of Ultimate Owners, e.g. d_u_div21 (>21 activities) proved to be beneficial for farm performance for all models except Return on Assets (Model III), Return on Sales (Model IV), Return on Equity (Model V), and highly statistically significant at 0.05 % for Total Revenue (Model I) and Labor Productivity (Model VI). The same situation belongs to Ultimate Owners diversifying between 10-20 activities, e.g. d_u_div10 , though it was statistically insignificant for all models.

Controlling for the Ultimate Owners' industries, those involved in agriculture positively correlated with performance for all models but Gross Profit (Model II), Return on Assets (Model III), and Returns on Sales (Model IV), though only statistically significant at 0.05 % for Total Revenue (Model I). Ultimate Owners in Research industry showed positive correlation with farm performance for Labor Productivity (Model VI), Land Productivity (Model VII), and Total Revenue (Model I), but only statistically significant at 0.10 % for the latter. The Umbrella Firms in Financial industry revealed positive impact on performance of farms in all models, except Return on Assets (Model III) and Return on Sales (Model IV), though only statistically significant at 0.05 % for Total Revenue (Model I) and at 0.10 % for Labor Productivity (Model VI). Umbrellas in Consulting showed similar impact on performance as those in Finance, though the impact on Total Revenue (Model I) and Labor Productivity (Model VI) was highly statistically significant at 0.01 %. Holding Companies involved in Construction exerted positive impact on Return on Equity (Model V), Land Productivity (Model VII), Labor Productivity (Model VI), and Total Revenue (Model I), though highly statistically significant at 0.05 % for the latter two. Ultimate Owners associated with Natural Resources industry mainly portrayed a negative influence on performance of their farms in regards to Land Productivity (Model VII), Gross Profit (Model II), Return on Assets (Model III),

and Return on Sales (Model IV), statistically significant at 0.10 % for the latter two. Belgorod oblast showed superior positive farm performance compared to that of Moscow, with respect to Return on Equity (Model V), Land Productivity (Model VII), Gross Profit (Model II), Total Revenue (Model I), and Labor Productivity (Model VI), though it was statistically significant at 0.05 % for the latter two.

The dummy connoting farms in Belgorod oblast, revealed a major supremacy performance in terms of Gross Profit (Model II), Return on Equity (Model V), Land Productivity (Model VII), Labor Productivity (Model VI), and Total Revenue (Model I), though highly statistically significant at 0.05 % for the latter two.

The Incorporation, compared to that of Institutional Ownership, showed not to play a significant role, considering all models, except for the Limited Liability Company (*d_u_tllc*). It played a positive role for the Ultimate Owners when it came to all performance indicators, except for Land Productivity (Model VII), and was statistically significant at 0.05 % for Total Revenue (Model I) and Labor Productivity (Model VI).

Tracking for ultimate owners' age revealed that Ultimate Owners older than 10 years were inferior to those that were younger than 10 years upon incorporation. Correlation was portrayed negative for all models except for Gross Profit (Model II), but highly negative and statistically significant at 0.01 % for Land Productivity (Model VII).

Considering the yearly progress, the performance deteriorated largely in 2004 and 2007, compared with 2001 for all models, and was mainly highly statistically significant at 0.01 %, except for Land Productivity (Model VI for 2004) and Total Revenue (Model I for 2007). The only positive improvement was evident for both 2004 and 2007 in Labor Productivity (model VI), highly statistically significant at 0.01 %. The R^2 coefficients for all the estimated models, range between 0.17 and 0.87, suggesting a reasonably high accuracy rate of the predicted outcomes of the utilized models (see Table 4-4).

MODELS							
Dep. Variables	I	II	III	IV	V	VI	VII
	In rev	In grprof	In roa	In ros	In roe	In labprod	In landprod
d_u_i_cons	0.3575*** (-2.802)	-2.0202 (-0.942)	-2.7249 (-1.166)	-2.573 (-1.137)	-0.9358 (-0.461)	0.5849*** (-2.61)	-0.0288 (-0.095)
d_u_i_const	0.4888** (-2.49)	-2.8215 (-0.912)	-0.5767 (-0.227)	-1.0181 (-0.413)	0.1654 (-0.069)	0.7859** (-2.278)	0.1606 (-0.346)
d_u_i_natres	0.1473 (-1.384)	-0.7646 (-0.729)	-2.1395* (-1.796)	-2.2708* (-1.968)	0.5116 (-0.426)	0.2213 (-1.183)	-0.2594 (-1.034)
d_belgorod	0.1950** (-2.064)	0.5749 (-0.797)	-1.3508 (-1.187)	-1.057 (-0.958)	0.0646 (-0.054)	0.3784** (-2.28)	0.3635 (-1.627)
Incorporation	d_u_ajsc	0.5319 (-0.493)	1.4995 (-1.332)	1.329 (-1.218)	-0.2358 (-0.187)	0.2072 (-0.929)	-0.2124 (-0.708)
	d_u_ojsc	0.1399 (-1.091)	0.714 (-0.667)	1.5875 (-1.115)	1.2478 (-0.904)	0.3015 (-1.337)	-0.2906 (-0.96)
	d_u_tllc	0.3222** (-2.379)	2.3242 (-1.944)	0.6657 (-0.463)	0.6366 (-0.457)	0.5645** (-2.372)	-0.1284 (-0.402)
	d_u_firmage10	-0.0358 (-1.075)	0.3533 (-1.425)	-0.1615 (-0.497)	-0.1065 (-0.338)	-0.0994 (-0.26)	-0.2077*** (-2.655)
Year	d_2004	-0.0814*** (-3.902)	-0.5801*** (-4.271)	-1.2239*** (-6.545)	-1.1046*** (-6.096)	-1.2877*** (-5.659)	0.2144*** (-6.573)
	d_2007	0.001 (-0.036)	-0.197 (-1.168)	-1.0441*** (-4.322)	-0.096*** (-4.102)	-1.1351*** (-3.81)	0.6062*** (-17.708)
	Constant	1.6052*** (-4.266)	5.9335** (-2.317)	12.9233*** (-2.934)	12.8349*** (-3.007)	3.1973 (-0.573)	6.0158*** (-9.818)
	Observations	724	514	521	521	536	724
	ll	363.1701	-551.8956	-700.894	-684.4315	-816.5511	-261.2467
	df_m	267	245	251	251	256	266
	miss	108.7251	84.4535	199.0219	169.5801	130.7342	81.4123
	rss	15.5441	257.701	449.639	422.1029	660.5609	87.2337
	rmse	0.1846	0.9806	1.2527	1.2527	1.5387	0.4369
	r2	0.8749	0.2468	0.3068	0.2866	0.1652	0.4827
	r2_a	0.8017	-0.4417	-0.3401	-0.3791	-0.6008	0.1817
	F	122.6748	3.378	4.5795	4.1566	2.1238	29.9799

Source: Author's own estimations. // Note: p-values in parentheses, * p<0.10, ** p<0.05, *** p<0.01.

4.5 CONCLUSION

The hypotheses pertinent to ownership types, e.g. Private versus State, Stand-alone versus Agrohholding members, Consolidated Ownership and Control versus Dispersed, were tested in this part of the Ph.D. Thesis with an in-depth ownership scrutiny level in Belgorod and Moscow oblasts of the Russian Federation. Using the Fixed-Effects Ordinary Least Squares regressions, concerning the Hypothesis 1, Private Ownership outperforms that of the State in terms of Performance, namely Total Revenue, Labor and Land Productivity. However, the aforementioned results proved to be statistically insignificant. The Hypothesis 2 held true for the Gross Profit, Return on Equity, Land Productivity, Labor Productivity and Total Revenue, e.g. positive relationship between individual non-member farms and performance, however only statistically significant for the latter two. With regard to Hypothesis 3, consolidation of Ownership and Control, e.g. an owner being also a CEO of a member/director of the board of directors, mainly proved to be positively related to farm performance, however negative and statistically significant concerning the Total Revenue and Labor Productivity. Concerning the auxiliary observations, the size of Ultimate Owners, in terms of their Total Assets, supports the "Too Big To Fail" argument, where farms' performance whose Ultimate Owners' Total Assets were below one billion rubles, were inferior compared to those owned by Ultimate Owners with Total Assets worth over one billion rubles. Focusing on industry – farm performance relationship, Holding Companies involved in Consulting proved to be the most beneficial as parents of farms for Total Revenue and Labor Productivity. Agrohholdings whose umbrellas were involved mainly in Construction, Finance and Agriculture, also showed significant positive correlation with farm Total Revenue and Labor Productivity. Farms in Belgorod oblast were shown to outperform the farms in Moscow oblast, given the ownership correlation, highly statistically significant for the Total Revenue and Labor Productivity. Lastly, concerning the performance indicators pertinent to answering the main Hypotheses of this Chapter, Total Revenue and Labor Productivity were the only statistically significant variables.

5 AGROHOLDING MANIFESTO: EXPOSING THE 5 W'S OF THE FOUNDING FATHERS OF RUSSIA'S AGRICULTURE

Every agroholding in the dataset, as well as in Russia, is unique with respect to its *raison d'être* and development. The phenomena range from corporate size, labor and capital to political association, financial backing access ability, and ultimate owners' personal and territorial structure, e.g. domestic versus foreign physical and legal entities. Answering the Objective 1 of this thesis, i.e. A comprehensive depiction of ownership structures of agroholdings in Russia, the below case studies provide examples of some of the largest, e.g. by land, total revenue, and scale of operations, and some of the most efficient, e.g. in terms of land, labor productivity, and yield, integrated agricultural business groups. Each case study provides a portrayal of agroholding's complete ownership structure, financial and economic performance, political association, and geographic dissemination.

5.1 AGROSILA GROUP

5.1.1 Background

One of the top 30 most efficient, in terms of yield per hectare, agroholdings in Russia, e.g. (FOMICHOVA-SIMONOVA, 2012), Agrosila Group – is one of the largest actively developing integrated agribusinesses in the Republic of Tatarstan since 2003. The agroholding's main activities comprise a fully integrated supply-chain cycle, e.g. growing cereals and legumes, poultry production, fodder, grain procurement and processing for flour and grits, sugar beet processing, and wholesale. In addition, the group is involved in Real Estate (see Table 5-1).

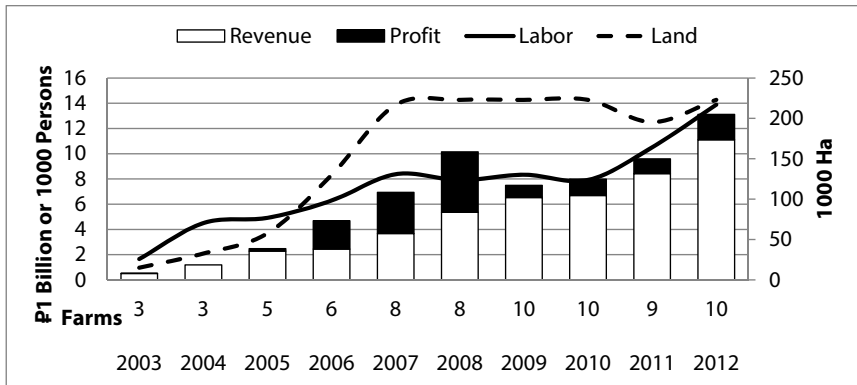
Table 5-1: Agrosila Group ownership structure: By industry (2014)

AGRICULTURE		NON-AGRICULTURE	
Cereal & Crop	af anyak, ooo	Real Estate	agro invest, ooo
	af aznakai, ooo		agrozhilinvest, ooo
	af vostok, ooo		college, oao
	af zainski sakhar, ooo		kamski beton, ooo
	agrosila grupp, ooo		risd, zao
	dzhailil, ooo af	Production & Wholesale	agrosila group zao
	kama, ooo af		chelny-broiler, ooo
	nurkeev, ooo af		energokhimservis, ooo
	sarman, ooo af		finagrotrade, ooo
	zai, ooo agrofirma		kazaninveststroi, ooo
Poultry	naberezhnochelninskaya ptf ooo		
	naberezhnochelninski inkubator, ooo		
	tukaevski plemreproduktor, ooo		

Source: Author's own illustration.

5.1.2 Performance

The group's priorities entail implementing modern technologies throughout the entire supply-chain, e.g. planting, fertilizers, harvesting, storage, stock breeding, animal feed and care, processing plants improvements and expansion, tillage advancement without overturning. This facilitated a swift and successful development of its agricultural sector, e.g. Revenue from 508.83 million RUR (2003) to 11.11 billion RUR (2012); Profit from 13.46 million RUR (2003) to 2.01 billion RUR (2012); Land from 1.65 thousand hectares (2003) to 222.93 thousand hectares (2012); Labor from 1.65 thousand persons (2003) to 13.89 thousand persons (2012) (see Figure 5-1). The group's subsidiary Chelny-Broiler OOO is one of the top 10 poultry producing farms in Russia, e.g. (CHELNY-BROILER, 2014). In 2014 Agrosila possessed 259 thousand hectares of land and is one of the main regional employers in Tatarstan.

Figure 5-1: Agrosila Group: Land, labor, capital (2003-2012)

Source: Author's own illustration.

5.1.3 Geographic dissemination

The Group is located solely in the Republic of Tatarstan and has neither foreign direct investments nor ownership, nor any of its affiliates located outside the republic and the Russian Federation. Its operations encompass Aktanysh, Aznar-kayevo, Sarmanovo, Tukayevsk and Zainsk districts, as well as cities of Kazan (the capital of Tatarstan) and Naberezhniye Chelny.

5.1.4 Ownership structure

Agrosila Group is a strictly family owned business where ownership and control are directly and/or indirectly consolidated via familial relations. For instance, Gimadeyev Damir is a director of Finagrotrade OOO, his son Gimadeyev Aydar is this company's owner, whereas his brother Gimadeyev Ildar is a CEO of the Agrosila Group and a majority shareholder of several subsidiaries of the group, such as Agrozhilinvest OOO and AF Anyak OOO. Speaking of the family business philosophy, Aydar Gimadeyev noted "...the more people there are who share the same values – the stronger is the group", e.g. (MIRSIPYANOVA SANAYEVA, 2013).

5.2 ASTON GROUP

5.2.1 Background

One of the largest Russia's food and food ingredients producers, a leading exporter of agricultural products and vegetable oils, Aston commenced its existence in 1997 and started a dynamic development of its agricultural operations in Rostov oblast. The group's success gained momentum in 2010 when Aston became the "Company of the year" having finalized its major and the only in Russia projects, e.g. power plants with renewable fossil fuels and bio energy

technology (heat, steam and electricity). The agroholding consists of agricultural production, processing, logistics, international trade, as well as shipbuilding and repair units (see Table 5-2).

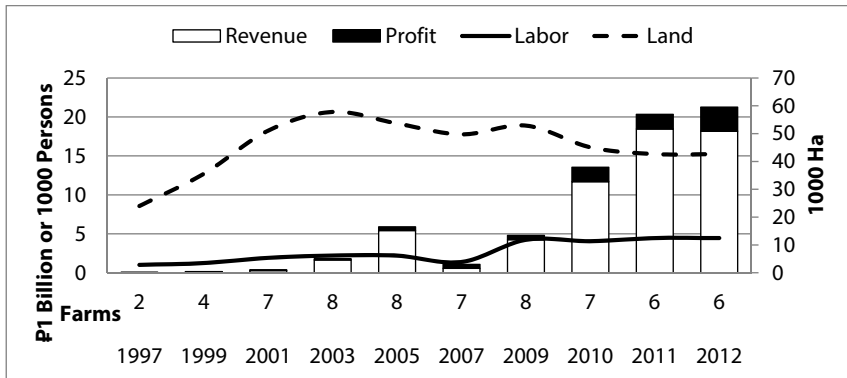
Table 5-2: Aston Group ownership structure: By industry (2014)

AGRICULTURE		Distribution	NON-AGRICULTURE	Other
Cereal & Oil			Holding & Real Estate	
aston-agro, ooo	adk, ooo		air, np	mp taman, oao
krutoyarskoe, ooo	agentstvo aston enterprise ooo		air, ooo	rostovski yakht-klub, ooo
				sovet po sportu vysshikh dostizheni
niva, zao	aston enterpraiz, ooo		aston, oao	ro, roo
szao skvo	aston enterprise, ooo		aston, ooo uk	temirinda, ooo
yubileinoe, ooo	aston-servis, ooo		mlp-don, ooo	
zazerskoe, oao	bpu moryak, ooo		yurzb, ooo	
	challanger shipping, ooo			
	emu moryak, ooo			
	maslenitsa, ooo			
	moryak, oao			
	td aston, ooo			
	traveller shipping, ooo			

Source: Author's own illustration.

5.2.2 Performance

Aston Group is traded at the Moscow Stock Exchange under "VLKR" ticker and in 2012 made 42.7 billion RUR, e.g. (M. FORBES, 2014). The group's famous vegetable oil brands "Zateya", "Volshebnyi Kray", "Svetlitsa", and "Aston" produced at the Morozov district subsidiary, along with all agricultural production and processing facilities prompted a solid growth, e.g. Revenue from 38.63 million RUR (1997) to 18.16 billion RUR (2012), Gross Profit from 14.52 million RUR (1997) to 3.01 billion RUR (2012). The agroholding's land possession fluctuated between 23.98 thousand hectares (1997) to 42.65 thousand hectares (2012). Its labor force increased from 1.02 thousand persons (1997) to 4.46 thousand persons (2012), along with the number of farms, e.g. two (1997) to six (2012) (see Figure 5-2).

Figure 5-2: Aston Group: Land, labor, capital (1995-2012)

Source: Author's own illustration.

5.2.3 Geographic dissemination

The group's operations are mainly conducted in Rostov oblast, except the Taman Seaport (Krasnodar oblast) and Aston Enterprise OOO (Nizhniy Novgorod oblast) involved in river-sea cargo transportation. The trade involves exports to the CIS and other international economies.

5.2.4 Ownership structure

Aston is a family owned business which belongs to Vikulov Vadim and his wife Vikulova Tatyana. The ownership and control are merged, e.g. Mr. Vikulov while being the owner of the group, acts as a Chief Executive Officer of its umbrella company Aston OAO. Similar to most of the successful businesses in the Russian Federation, the majority shareholder participated in regional politics upon being elected a member of the City Council of Rostov oblast during 2003-2004. The following year he became a Chairman of the Board of Directors of the non-commercial partnership "Investment Development Agency of the Rostov Oblast", and subsequently a Chairman of the Board of the National Association of exporters of agricultural production, e.g. (ASTON, 2014). The group's foreign direct investment comes from its largest shareholders in Switzerland, e.g. United Agro Industrial AG and Aston Agro-Industrial AG, e.g. (VOROBYEV, 2014).

5.3 BLACK EARTH FARMING GROUP

5.3.1 Background

One of the Top-30 Most Efficient Land Users of Russia, e.g. (RBC, 2013), since 2007 listed at Nasdaq OMX Stockholm Black Earth Farming operates in South West region of the Russian Federation, and is commonly known under the name

Agro-Invest. Group's main activities comprise wheat, sunflower, sugar beet, corn, oil seed, barley, soya, and potato production. The agricultural operations are complimented with 500 thousand tons of storage capacity, land management, and real estate operations (see Table 5-3). Since 2012 the group signed a strategic cooperation agreement with the PepsiCo supplying its sugar, potatoes and sunflower seeds.

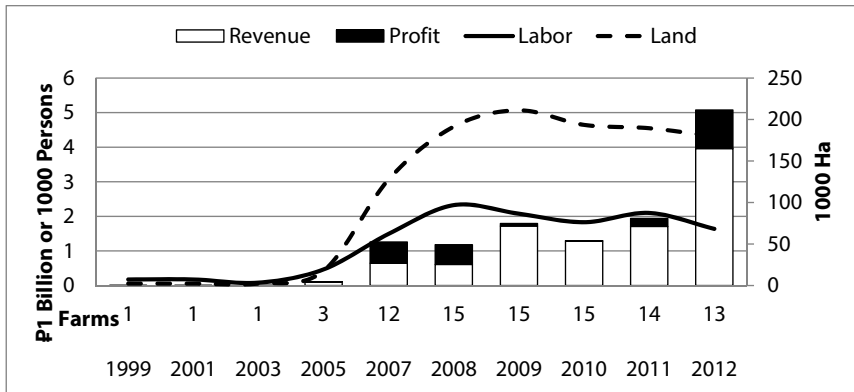
Table 5-3: Black Earth Farming Group ownership structure: By industry (2014)

AGRICULTURE		NON-AGRICULTURE	
Cereal & Crop	uk agro-invest, 000	Land Management	lgov-agro-invest, 000
	shatsk-agro-invest, 000		usman-agro-invest, 000
	podgornoe-agro-invest, 000		usmanskaya zemlya, 000
	kalach-agro-invest, 000		storozhevoe-agro, 000
	verkhnyaya khava-agro-invest, 000	Holding & Real Estate	agro-invest nedvizhimost, 000
	agrolipetsk, 000		uk agro-invest regiony, 000
	dmitriev-agro-invest, zao		belgorodka-agro-invest, 000
	agro-invest-kshen, zao		olym-agro-invest, 000
	stanovoe-agro-invest, 000		selino-agro-invest, 000
	izmalkovo-agro-invest, 000		don, 000
	bezenchuk-agro-invest, 000	Storage	agroterminal, 000
	ostrogozhsk-agro-invest, 000		
	volga-agro-invest, 000		
	sosnovka-agro-invest, 000		
	morshansk-agro-invest, 000		
	chelnovaya-agro-invest, 000		
	novokhopersk-agro-invest, 000		
	gribanovka-agro-invest, 000		

Source: Author's own illustration.

5.3.2 Performance

The group's strong belief in innovative technologies, economies of scale, cost and logistics optimization, as well as land ownership, secured solid corporate returns, e.g. Revenue from 2.26 million RUR (1999) to 3.96 billion RUR (2012), Gross Profit from -2.34 million RUR (1999) to 1.12 billion RUR (2012), Land from 2.36 thousand hectares (1999) to 179.64 thousand hectares (2012), and Labor from 176 persons (1999) to 1.64 thousand persons (2012). The group's number of farms increased from 1 (1999) to 13 (2013) (see Figure 5-3). The group's land holdings in 2013 constituted 308 thousand hectares out of which 82 % are owned by the group. Its Revenue increased to 7.11 billion RUR, and Grain Yield was 2.10 tons/hectare, e.g. (RBC, 2013). Altogether in 2013 the group produced 789 thousand tons of cereals and oilseeds.

Figure 5-3: Black Earth Farming Group: Land, labor, capital

Source: Author's own illustration.

5.3.3 Geographic dissemination

Black Earth Farming operates in the chernozem region of the Russian Federation, e.g. oblasts with the most fertile and mineral rich black soil (see Table 5-4).

5.3.4 Ownership structure

The group stems from the Swedish family and Western banks backed investment firms Kinnevik Investment AB and Vostok Nafta Investment Ltd with Bermudan, Cypriot, and Swedish parent companies. Kinnevik Investment AB as the largest shareholder of the group is a widely held conglomerate. The Black Earth Farming Group has no ownership and control consolidation either, as none of the group's subsidiaries' CEOs have stake in the firms they manage. The group takes pride to have most of its land assets fully owned under its name, given the current existing in the Russian Federation moratorium pertinent to agricultural land selling to foreigners.

Table 5-4: Black Earth Farming Group regional dissemination

Oblast	AGRICULTURE	NON-AGRICULTURE		
	Cereal & Crop	Holding & Real Estate	Land Management	Storage
Voronezh	6	2		
Lipetsk	3		3	1
Kursk	2	3	1	
Tambov	3			
Moscow	1	1		
Samara	2			
Ryazan	1			

Source: Author's own illustration.

5.4 CHERKIZOVO-NAPKO GROUP

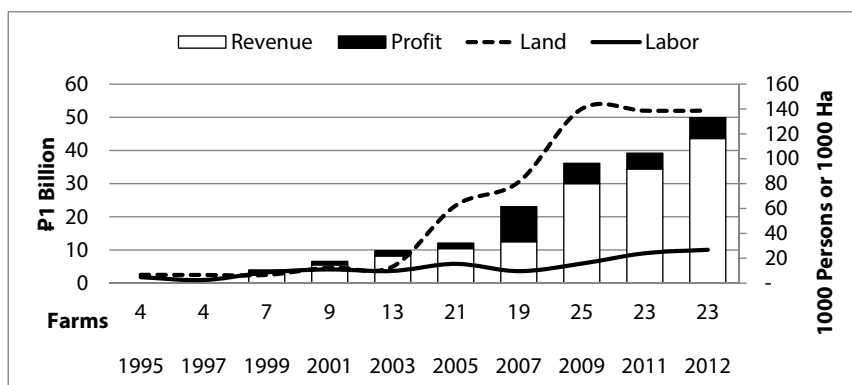
5.4.1 Background

One of the largest diversified poultry, pork and meat processors, the largest fodder manufacturer in Russia, traded at London and Moscow Stock Exchanges, Cherkizovo-Napko incorporate a diversified portfolio of grain, poultry, pork, cattle, and turkey operations. The group vertically integrates an entire supply-chain, e.g. production, processing, logistics, storage, and trade units. Furthermore, the group's portfolio includes Real Estate, Land Management, and Holding Operations (see Table 5-5).

5.4.2 Performance

Comprising 7 poultry (400,000 tons), 14 pork (180,000 tons), 6 meat (190,000 tons), 6 fodder (1,400,000 tons) full cycle production facilities, as well as grain storage capacity surmounting 500,000 tons, the agroholding is ranked 149th in Forbes Russia and made 34.1 billion RUB in revenues in 2013. Considering just the agricultural operations, the conglomerate managed to grow in terms of the Total Revenue from 86.98 million RUR (1995) to 43.58 billion RUR (2012), in Gross Profit from 19.67 million RUR (1995) to 6.30 billion RUR (2012), land bank from 4.75 thousand persons (1995) to 138.60 thousand hectares (2012-2014) (see Figure 5-4).

Figure 5-4: Cherkizovo Group: Land, labor, capital



Source: Author's own illustration.

Table 5-5: Cherkizovo-Napko Group Ownership Structure: By industry (2014)

AGRICULTURE		NON-AGRICULTURE
Cereal & Crop	Cattle	agrotekhsouyz, zao ardymski kombikorm zavod, 000 bikom, 0ao cherkizovo-kashira, zao chmpz, 0ao dzheneraltsehniki, 000 engelski khlebokbt, 0ao kuznetsovski kbt, 000 labinski, zao lipetskmyasoprom, 000 mastervud, 000 mikhailovski kombikorm zavod, 000 molochny zavod zvenigorodski, 0ao myasokbt dankovski, zao okz, 0ao otechestvenny produkt, 000 penzenski kbt khleboproduktov, 0ao penzenski khlebозавод n2, 0ao salski myasokbt, zao sdlk, 000 slavny pekar, 000 zaraisskhlleboprodukt, 0ao zenoprodukt, 0ao
	Poultry	brest, 000 energiya, 000 kids, 000 krasnopolyanskaya ptf, zao mk salski, zao nikp, 000 niva, 0ao novoe perkhushkovo, 000 russko, 000 svetlye dali, 000 tomilinskaya ptf, zao zemelnaya co cherkizovo, 000 zhivaitsinskoe, 0ao
	Pork	agrарista, 000 apk mikhailovski, 000 ardymskaya zerno co, 000 bikom-cherkizovski, 000 td cherkizovo-don, zao cherkizovo-ekaterinburg, 000 cherkizovo-ural, 000 cherkizovo-valdai, 000 khotynetskoe khpp, 0ao luninski elevator, 0ao mosoblprodresursy, 0ao myasnoe tsarstvo, 000 td obedinennaya prod co, 000 petelino, 000 td sernovodski elevator, 0ao simbirski, 000 td td bez, 000 td kurskaya ptf, 000 td myasokbta, 000 td slavny pekar, 000 tpk cherkizovo, 000
	Mixed	gruppa cherkizovo, 0ao mikhailovski, 0ao apk mospitseprom, 0ao nazko, 000 tambovmyasoprom, 000 uk svinovodstvo grup. cherkizovo, 000 uk napko, 000 uk pttisevodstvo grup. cherkizovo, 000 vologdasvinoprom, (lk) 0ao
Cereal & Crop	Cattle	agrarnaya gruppa, 000 af dmitrievka, 0ao af domachevskaya, 0ao af ilinskaya, 0ao af iskra, 0ao af kuzovlevskaya, 0ao af lesopol'yanskaya, 0ao af mayak, 0ao af mednenskaya, 0ao af olshanka, 0ao af plotava, 000 af rassvet, 0ao af rodina, 0ao af rodniki, 0ao af svishchevskaya, 0ao af zarya, 0ao af zarya, 0ao af znamenskaya, 0ao agrokorm, 000 agroresurs-penza, 000 agroresurs-voronezh, zao alekseevskoe, 000 ardymskaya kombikorm co, 000 ardymskoe khpp, 0ao avangard plyus, 000 avangard, 000 bertek, 000 bogachevo-leik, 000 cherkizovo-rastenievodstvo, 000 dekas-3, 000 gpsm-palakh, 000 katyusha, 000 kolos, 0ao kolos, 0ao kppb-invest, 000 lagoda, 0ao lipetskmyaso, 0ao lomovskoe, 0ao mak bami, 000 mapk dva, 000 mapk odin, 000 napko, 000 napko-samara, 000 natko, 000 niva-khotynets, 000 penzenskaya, 000 mts progress, 0ao prostory, 000 razdole, 000 rodina, 0ao sernovodskoe, 0ao sheremetevye biznes-park, 000 tambovmyaso, 000 vishnevyye sady, 000 voronezhmyasoprom, 000 voskhod, 0ao
	Poultry	af pervomaikaya, 0ao af privole, 0ao af solovtsovo, 0ao af znamenka, 0ao alekseevskoe, 0ao bekshanskoe, 0ao evleskoe, 0ao glebovskoe ptf obedinienie, zao kholstovskoe, 0ao krugovskaya ptf, zao kuznetsovski kbt, zao penzamoloko, 000 sergievsk-moloko, 000 uspenskoe, 000 zalesnoe, 0ao
	Pork	apk konstantinovo, 0ao bratsevsckoe, 0ao broiler budushchego, 000 elinar-broiler, zao golitsynskaya ptf, zao istro-senezhskaya broilernaya ptf, 000 kurinoe tsarstvo, 0ao kurinoe tsarstvo-bryansk, zao kurskaya ptf, 0ao kurskelprom, 000 liski-broiler, zao lisko broiler, 000 mosselprom, zao petelinskaya ptf, zao ptf glebovskaya, 000 ramonskaya ptf, 0ao tambovskaya indeika, 000 vasilevskaya, 0ao ptf
	Mixed	af budenovets, 000 af ogarevskaya, 0ao af tulsckaya, 0ao bolshevik, 000 botovo, zao lipetskmyaso, zao lipetskmyasoprom, 0ao orelselprom, zao penzamyasoprom, zao penzenskaya zerno co, 000 rao resurs, 000 af dmitrievka, 0ao af mayak, 0ao af mednenskaya, 0ao af olshanka, 0ao af rodina, 0ao af rodniki, 0ao af zarya, 0ao agroresurs-penza, 000 bertek, 000 bogachevo-leik, 000 kolos, 0ao kolos, 0ao lomovskoe, 0ao mapk dva, 000 mapk odin, 000 progress, 0ao prostory, 000 razdole, 000 rodina, 0ao vishnevyye sady, 000 voskhod, 0ao

Source: Author's own illustration. // Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

5.4.3 Geographic dissemination

The Group operates throughout all continental Russia (see Table 5-6).

5.4.4 Ownership structure

Cherkizovo-Napko Group is a family owned business with the principal owners and Executive Officers Igor Babayev, Sergey Mikhailov, Evgeny Mikhailov, and Ludmila Mikhailova directly and/or indirectly participating in the group's shareholding. Throughout its existence, the conglomerate's parent companies were registered in Bermuda, British Virgin Islands, Canada, Cyprus, Germany, Poland, Spain, USA, which facilitated a solid foreign direct investments and higher financial returns due to reduced tax burdens. In 2011, Cherkizovo acquired Mossel-prom – one of the largest in Europe and the largest in Russia in 2008 agro-industrial poultry, grain and fodder production project, specializing and operating in Central Russia, which belonged to a former member of the Russian Federation Council Sergey Lisovskiy.

Table 5-6: Cherkizovo Group regional dissemination

Oblast	AGRICULTURE					NON-AGRICULTURE			
	Cereal & Crop	Poultry	Mixed	Cattle	Pig	Processing & Production	Distribution	Real Estate & Land Management	Holding & Management
Moscow	10	10	6	3	1	11	7	8	7
Penza	6	5	4	5	3	5	5	1	
Lipetsk	6	1		1	4	2			
Voronezh	6	3	4						
Ulyanovsk	1		1	5		1	1	2	
Tambov	1	1	6		1				1
Samara	4			1		1	1		
Oryol	1				3		1		
Kursk	1	2					1		
Rostov						1	1	1	
Bryansk	1	1							
Krasnodar						1	1		
Vologda					1				1
Belgorod							1		
Chelyabinsk							1		
Kaliningrad						1			
Kirov	1								
Novgorod				1					
Orenburg	1								
Saratov						1			
Sverdlovsk							1		
Tula						1			

Source: Author's owns illustration.

Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

5.5 IVOLGA GROUP

5.5.1 Background

The largest in the world agroholding in terms of land, e.g. 700 thousand hectares in Russia and 800 thousand hectares in Kazakhstan, a member of Russian and Kazakh Grain Unions, Ivolga Group, belonging to Rosinov Vasily Samoylovich and is known in Russian under the name of RVS, OOO. Common to most agroholdings in the Russian Federation, the conglomerate is a completely vertically integrated structure incorporating the whole supply chain. Its blatantly diversified operations range from wheat, sugar beet, vegetables, dairy and meat, bread and bakery products, agricultural machinery, spare parts, elevator and electrical equipment production, to provision of aviation services, computer and office equipment implementation, media and printing industries, and petroleum products (see Table 5-7).

5.5.2 Performance

With 31 elevators (20 in Russia) and a grain storage capacity over 3 million tons, exporting grain to Afghanistan, Turkey, Egypt and CIS regions, Ivolga quickly grew its operations and generated solid returns. The group notably grew in Russia already since 1999 with a Revenue from 85.00 million RUR (1999) to 15.62 billion RUR (2012), Profit from -119.00 million RUR (1999) to 1.33 billion RUR (2012), Land from 65.21 thousand hectares (2003) to 483.47 thousand hectares (2012), Labor from 11 persons (1999) to 13.99 thousand persons (2012), as well as from 1 farm (1999) to 34 farms (2012) in Russia (see Figure 5-5).

5.5.3 Geographic dissemination

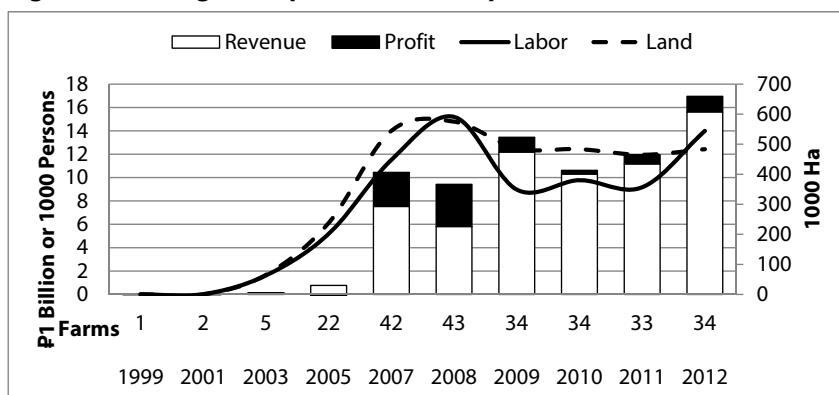
With respect to Russia, the group's operations are conducted mainly in the South West part (Table 5-8).

Table 5-7: Ivolga Group ownership structure: By industry (2014)*

AGRICULTURE		NON-AGRICULTURE	
Cereal & crop	af im. elektrozavoda, ooo	Processing & production	finansagrosbyt, ooo
	af krasnoholmskaya, ooo		ivolga-tsentr, ooo
	agro-grein, ooo		karteks, ooo
	belovskoe ao, ooo		kastorenskoe khp, ooo
	belyaevskaya mts niva, oao		molvino agro, ooo
	bolshesoldatski sveklovod, ooo		orenburg-ivolga, ooo
	bolshesoldatskoe ao, ooo		shchelkovo agrohim, ooo
	burhankul-1, ooo		troitskaya-mts, ooo
	chesnokovskoe, ooo		zernotorgovaya co., ooo
	ivolga-kursk, ooo		zlak, oao
	hutorskoe, ooo	Production & processing	bel sahar, ooo
	ksk-agro, ooo		boinya kulagino, ooo
	lebyazhinskoe, ooo		lastochka, ooo
	lgovagro, ooo		moloko, ooo
	lyskovo, ooo		molokozavod-ivolga, ooo
	medvenkaagro, ooo		myasopromtorg, ooo
	niva 1, ooo		sahar zolotuhino, ooo
	nizhnaya sanarka, ooo		saharinvest, ooo
	novy ural, ooo		troitski kkhp, oao
	oboyanagro, ooo		voronezhssahar, ooo
Mixed	oktyabrskoeagro, ooo	Finance & mgt	evrosoyuz, ooo
	peschanoe, ooo		oboyanski agroinvest, ooo
	peschany, spk		rvs, ooo
	sredneuranski, ooo		uvelskaya invest. co., ooo
	sudbodarovskoe, ooo	Other	svetloe, ooo
	svetloe, ooo		geimsberg, ooo
	tyulgan-ivolga, ooo		novosergievskaya mts, ooo
	varnenskoe, ooo		uamz, oao
	z k povolzhe, ooo		
	zatonnoe, ooo		
	zolotoi kolos, ooo		
	11 kavdivizii, ooo im.		
	cheremisinski sveklovod, ooo		
	cheremisinskoe ao, ooo		
	rybkino, ooo		
	stark, ooo		
	starki, spk		
	zolotuhinskoe agro, ooo		

Source: Author's own illustration.

Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

Figure 5-5: Ivolga Group: Land, labor, capital

Source: Author's own illustration.

5.5.4 Ownership structure

Ivolga is a vastly diversified agricultural family business with a merged ownership and control. While Rozinov Vasiliiy is a Chief Executive Officer of Ivolga Holding, his brothers Rozinov Aleksandr and Rozinov Andrey are the group's Deputy Chief Executive Officers. The other family members, Rozinov Andrey Samoilovich's son Rozinov Andrey Andreyevich along with Rozinova Alena Vladimirovna own shares in group's subsidiaries and affiliates, and exercise control in form of either Board Membership or directly by being Chief Executive Officers. While the son and brother-in-law are involved in Kostanay politics, Vasiliiy Roninov ascertains control and success of his empire via Grain Union and Nur Otan political party membership, and being an independent Executive Officer at KazAgro (Kazakh largest corporation), e.g. (BUKEYEVAKATKOVA, 2013).

Table 5-8: Ivolga Group regional dissemination

Oblast	AGRICULTURE		NON-AGRICULTURE			
	Cereal & Crop	Mixed	Distribution & Storage	Processing & Production	Holding & Finance	Other
Chelyabinsk	8		2	3	2	1
Kaluga		1		4		
Krasnodar	1					
Kursk	9	4	3		1	
Moscow		1	3		1	1
Orenburg	10	2	1	2		1
Rostov	1					
Stavropol						1
Ulyanovsk	1		1			
Voronezh				1		

Source: Author's owns illustration. // Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

5.6 KRASNIY VOSTOK – EDELVEIS GROUP

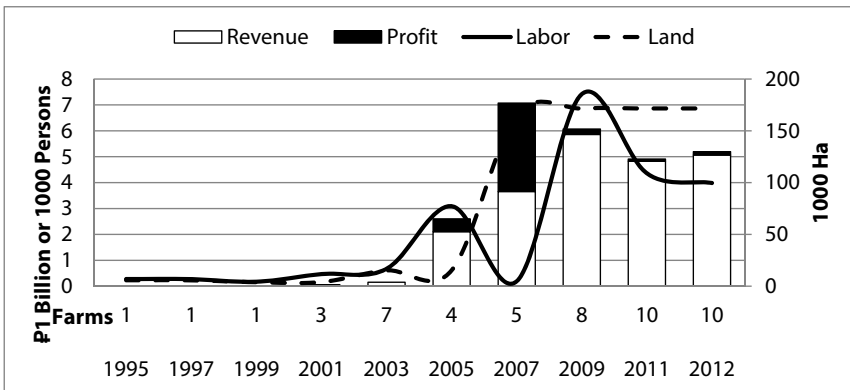
5.6.1 Background

Consisting of 13 largest in Europe mega farms, one of the Top-20 Most Efficient Land Users in Russia, e.g. (RBC, 2013), operating mainly in the Republic of Tatarstan, Krasniy Vostok is a fully vertically integrated by the supply-chain agroholding, involved in cereal and crop production, beer brewing, storage, processing, dairy, animal husbandry production and breeding, logistics, wholesale, trade, real estate, finance and holding units (see Table 5-9)

5.6.2 Performance

Considering the agricultural complex of the group, although Krasniy Vostok began to exist only in 2003, the agroholding already possessed a farm during 1995-1999. The group grew from 2.05 million RUR (1995) to 3.66 billion RUR (2005), in terms of Total Revenue, and from 0.44 million RUR (1995) to 3.41 billion RUR (2005), in terms of Gross Profit. However, the financial returns slumped a bit to 5.01 billion RUR (2012) for Total Revenue, and 0.13 billion RUR (2012) for the Gross Profit. The group's Land increased from 5.75 thousand hectares (1995) to 171.56 thousand hectares (2012) and the employment rose from 280 persons (1995) to 7.42 thousand (2007), yet was reduced to 3.99 (2012), given 1 far, (1995) and 10 farm (2012).

Figure 5-6: Krasniy Vostok Group: Labor, land, capital



Source: Author's own illustration.

Table 5-9: Krasniy Vostok Group ownership structure: By industry (2014)*

AGRICULTURE		NON-AGRICULTURE	
Cereal & crop	ak kv-yuzhnoe zavolzhe, oao	edelveis-v, ooo	akhmetevo, ooo
	azaleevo-v, ooo	gorshechenskoe khpp-a, ooo	alkeevski finansist, ooo
	bolshie klyari, oao	inei servis, ooo	aloe-farm, ooo
	kombikormovy zavod, ooo	market tsentr, ooo	analitika i finansy, ooo
	kugeevski, ooo	molochny karavan, ooo td	choo servis 1, ooo
	kursk. zerno. tech, ooo	portal, ooo	choo energiya, ooo
	kv agro, oao	servettorg, ooo	choo zakame, ooo
	megafarm lebyazhe, ooo	solntsevskoe akhp, ooo	chop kirasa plyus, ooo
	mulile-v, ooo	supermarket koltso, ooo	chop servis-8, ooo
	oktyabrski-v, ooo	tat. zerno. tech., oao	edelveis u, ooo
Cattle	rkh verkhnii uslon, ooo	tk edelveis, zao	id strakhovaya gazeta, ooo
	shirdan-v, ooo	tomsk. partn. menedzherov, ooo	kazan. gostinichny servis, ooo
	sunchaleevo-v, ooo	agrokholding kv, oao	kv-servis, ooo
	ulyanovskaya niva, ooo	almaz, ooo	mt-d-partner. menedzher. 2, ooo
	ulyanovskie zerno. tech., ooo	edelveis grupp, oao	yalkyn, ooo
	vakhitovo-uslon, ooo	edelveis korporeishn, zao	plemdelo-sever. alekseevskoe, ooo
	vostok zernoprod., zao	fpk edvos, ooo	sportivny dom master, ooo
	vzk, ooo	gipermarket koltso, oao	tsentr. Partner. menedzherov-1, ooo
	vzp bilyarsk, ooo	gostinichnoe agentstvo 2, ooo	aiemsi, ooo
	vzp rybnaia sloboda, oao	gum, oao	analiticheski strakhovoi tsentr, ooo
Cattle	vzp severnoe alekseevskoe, oao	gum-3, oao	byuro zalogovykh istorii bat, ooo
	vzp zavolzha, ooo	imyanle-burtaskaya sel. biblioteka 8	energobank (oao), akb
	zeleny dol-v1, ooo	kazan otel grupp, ooo	energolizing, ooo
	apk russki mramor, zao	kazanskaya yarmarka, oao	pk tasfir-apeko, oao
	megaferma berezovka, ooo	akcharlak, ooo	strakhovoe obshchestvo talisman, oao
	megaferma molvino, ooo	edelveis-vostok, ooo	uk energoinvestkapital, ooo
	megaferma oktyabrski, ooo	edelveis-vostokv, ooo	teplokontrol, oao
	megaferma sheremetev, ooo	energoshetpribor, ooo	agroinzheniering xxi, ooo
	megaferma yambukhtino, ooo	kazanskii tekhnologii, ooo	akvamarin, ooo
	plemennoe delo zavolzha, ooo	kv-transavto, ooo	zernotreid, ooo
Cattle	plemennoe delo, ooo	lotos, ooo	tsentrpribor, zao
	plemennoe delo-alkeevskoe, ooo	novo-zarechenskoe u 2, ooo	akvadell, ooo
	sot, kkh	parkovka koltso, zao	aladeya, ooo
	fh ramaevskoe, ooo (poultry)	vodozabor mirny, zao	etalon, ooo

Source: Author's own illustration.

5.6.3 Geographic dissemination

Most of the Krasniy Vostok – Edelveis Group's operations comprise activities in the Republic of Tatarstan of the Russian Federation.

Table 5-10: Krasniy Vostok Group: Regional dissemination

AGRICULTURE			NON-AGRICULTURE					
Oblast	Cereal & Crop	Cattle	Security Service & Labor Recruitment	Distribution	Logistics & Catering	Holding & Real Estate	Finance	Production & Processing
Republic of Tatarstan	20	8	15	11	10	9	8	3
Moscow		1		1		3		4
Ulyanovsk	1	1	1					
Kursk	1							
Novgorod								1
Republic of Mariy El			1					
Republic of Udmurtia			1					
Tambov	1							
Voronezh	1							

Source: Author's own illustration.

5.6.4 Ownership structure

Krasniy Vostok – Edelveis Group is a family owned business with a consolidated ownership and control. Being one of the richest businessmen in Russia, e.g. (FORBES, 2014b), Ayrat Hairullin along with his brother Ilshat Hayrullin own establish control of their business via direct and indirect share participation, as well as by being occupying Chief Executive posts or via Board Membership. Since the age of 24, Ayrat's active involvement in Russia's politics, membership in the State Duma, being First Deputy Chairman of Agricultural Committee since 2003, as well as being a President of the National Milk Producers Union, enabled the brothers to proactively lobby their business, e.g. (LOBBYING.RU, 2014). In addition, foreign direct investment by parent and daughter companies in Belize, British Virgin Islands, Panama, and Switzerland, enabled achievement of successful returns on group's investments.

5.7 PRODIMEX-OSK GROUP

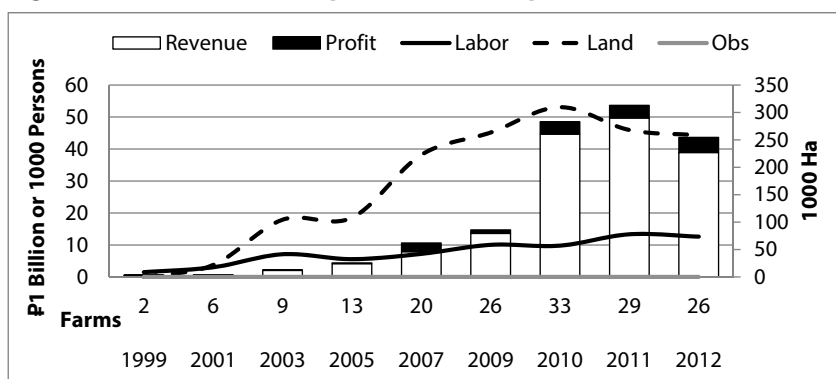
5.7.1 Background

A leading sugar grower and processor in Russia (22 %) in 2014 occupying 570 thousand hectares of land throughout an entire Russia, belonging to one of the richest businessmen in the country, Prodimex is a leading member of Russia's Sugar Union, headed by its group's principal shareholders and Members of the Board, e.g. (FORBES, 2014a). The group known under the names Prodimex and OSK (Obedinennaya Saharnaya Kompaniya) is a vertically integrated largely diversified agricultural holding, encompassing the entire supply-chain operations, e.g. cereal and crop growing, poultry, pork, and cattle farming, sugar beet, vegetables, fruits and berries, and potatoes growing, processing plants, logistics, retail, wholesale, trade, real estate, storage, holding and management units, as well as restaurants, publishing, and educational institutions (see Table 5-11).

5.7.2 Performance

Beginning as a trading house, importing sugar from Ukraine and profiteering on the arbitrage pricing in Russia during early 1990s, e.g. (LEVINSKIY, 2012) Prodimex Group swiftly gained a competitive advantage among its competitors and already showed growth since 2001. Having only 2 farms in 1999 it already made 499.75 million RUR in Total Revenues and managed to acquire 26 farms by 2012, earning 38.90 billion RUR. Group's Gross Profit increased from 104.83 million RUR (1999) to 4.73 billion RUR (2012). The Land Bank increased from 22.02 thousand hectares in 2001 to 258.46 thousand hectares in 2012 (570 thousand hectares by 2014), and the agroholding employment increased from 1.50 thousand persons (1999) to 12.62 thousand persons (2012) (see Figure 5-7).

Figure 5-7: Prodimex Group: Land, labor, capital



Source: Author's own illustration.

Note: The portrayed results are an outcome of the available data and may vary, in real terms.

AGRICULTURE		NON-AGRICULTURE	
af tambovskaya, 000	af krasny klin, 000	agrotorg troitsk, 000	agroprodukt, 000
agroinvest, 000	agrokompleks volzhski, 000	amk ugrinich, 000	agrosoyuz voronezh.
agro-invest, 000	agrosoyuzug, 000	askor, 000	niva, 000
agro-niva, 000	alyans-agro, 000	bio tekhnologii, 000	agrotorg, 000 td
		dmitrotaranovski sahar.	agrotorg-treid, 000
agrosakhar-2, 000 af	anninski kolos, 000	zavod, 000	altai, 000
agroservis, 000	apf ugrenevo, 000	donbiotekh, 000	app stavropole, 000
			bashkirskeya sahar. co.
agrostar, 000	apk agroeko, 000	eks, 0ao	000
alt-agro, 000	bif art, 000	ertilski sakhar, 000	bashkirski sakhar, 000 td
		hokholski sahar. kombinat, 000	
belovode, 000	bif art, zao	izobilnenski sahar. zavod, 000	germes, 000
charyshskoe, 000	dagagrokompleks, 000	000	grand, 000
inskoe, 000 app	druzhba plyus, 000	karlamanski produkt, 000	izumrudny, 000 td
			kantemirovski elevator, 0ao
izumrudnoe, 000	Mixed elan-agro, 000	karlamanski sakhar, 000	
kolhoz im. i.v. stalina, 000	krugly god, 000	khimprom, 000	kompanon, 000
	ovoshchi krasnodar. kraya, 000		
kolhoz vostok, 000		korenovsaksakhar, 0ao	prodimeks m, zao
			prodimeks-kholding, 000
krutovskoe, 000	ovoshchi stavropolya, 000	krasnaya zarya, 000	
		krasnoyaruzhski saharnik, 000	rayan, 000 td
kursk-agro, 000	prostor, 000	l.-plast., 000	rost-agro, 000
kusakskoe, 000	raduzhny-2, 000	liskisakhar, 0ao	sosnovskoe, 000
meliorator, 000 spk	raevskaya, 000	maima-moloko, 000	stroikom, 000
nasha rodina, 000 pz	rostok, 000	meleuzovski sahar. zavod, 0ao	stroitelnye tekhnologii, 000
		merny loskut, 000	syurpriz, 000
paivinskoe, 000	spasski bekon, 000	oosaturm-1	td kupets, 000
penzamolinvest, 000	talmenskoe agro, 000	osk, 0ao	td ugrinich, 000
prodvizhenie, 000	tsch apk, 000	pereleshinski sahar. kombi- nat, 000	
rassvet, 000	vityazevskaya prf., 000		tvm, 000
	yuzhagro, 000		aai novye tekhnologii, 000
		plastika, 000	apk-konsalt, 000
rassvet-agro, 000	ardatov, 000	polimerkonteiner 1, 000	ik triumfalnaya arka, 000
razdolnoe, 000	charyshski, 0ao pz	prkz, 000	infina, 000
rossoshanskoe, 000	krasnye polyany, 000	raevsakhar, 000	isk enbiem-mosoblstroi, 000
rossoshi, 000	malinovka, 000	ryazanskie kombikorma, 000	korenovski sahar. zavod, 0ao
			lesstor, 000
rybnoe, 000	ndn-agro, 000	sadovski sahar. zavod, 000	osk, 0ao
		stavropolsakhar, 0ao	rezonans, 000
rzhavetskoe, 000	Cattle nizhnekamenskoe, 000 af	taim, 000	rskhb upravlenie ak- tivami, 000
shakhovskoe, 000	ph gerefordresurs, 000	tsitrobel, 000	rskhb-strakhovanie, zao
sodruzhestvo, 000	remputmash-agro, 000		sk
soldatskoe, 000	rodnye prostory, 000	tsk, 000	
		uspenski sakharnik, zao	
spk gonokhovski, 000	sibir, 000	zemetchinski sahar. zavod, 0ao	
	tengushevo, 000		smu-55, 000
suvorovo, 000	zalese-agro, 000		stroipodryadgruppa, 000
			td krasnodar-agro, 000
sychevskoe, 000	Poultry donstar, 000	af altai, 000	tda talski, 000
tk agropark, 000	kros, 000	agrokredit-inform, zao	telisikom grupp, 000
tk tyumenagro, 000	malodubenskaya ptf 000	altairesursy, 000	
tolstovskoe, 000	pavlovskaya ptf zao	belve rosy, 000	

AGRICULTURE		NON-AGRICULTURE	
Pig	trunovski agroholding, ooo	bolshaya peremena +, ooo dagestan mtk-severny, ooo masig, ooo	uk chistye prudy, ooo
	ptf akashevskaya, ooo		velikaninvest, ooo
	tver agroprom, ooo		altaigrad, ooo uk
	ukrainskoe, ooo		izumrudnaya strana, ooo uk
	vozrozhdenie, ooo		khk izumrudnaya strana, ooo
Beet	zagorski broiler, ooo	mchik mguk, fl	kkpd-invest, ooo
	znamya, ooo	pp ugrinich, ooo	krasnye vorota, ooo
	af agrosakhar-3, ooo	rest-tur, ooo	regionalnoe razvitie, ooo
	af agrosakhar, ooo	soglasie, ooo	uk analiticheski tsentr, ooo
	agroinvest, ooo	tekhnokrat, ooo	uk dom, ooo
Pig	agrosakhar, ooo	uspeshny vybor, ooo	uk stimul, ooo
	npo meleuz, ooo		uk stolitsa, ooo
	soyuzzagro, ooo		voronezhskakhar, ooo

Source: Author's own illustration.

Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

5.7.3 Geographic dissemination

The operations of Prodimex-OSK are conducted throughout whole of the Russian Federation, with much of assets located in Altai Krai, the Republic of Bashkortostan, Moscow, Rostov, Stavropol, Belgorod, and Voronezh oblasts (see Table 5-12).

5.7.4 Ownership structure

Founded in 1992 the Prodimex-OSK group is a vertically integrated agroholding with a consolidated ownership and control. Both, Hudokormov Igor, being Chairman of the Board of Directors of Prodimex, and Aleksahin Viktor, being the Chief Executive Officer of the group, directly and indirectly own shareholdings in group's subsidiaries. Hudokormov Igor, being the principal (largest) shareholder of the group, ascertains its successful development whilst being a member of the Sugar Union Council. Simultaneously, Aleksahin Viktor is a Chairman of the Board of this very Sugar Union. The agroholding has two affiliates in Cyprus, which allows for efficient foreign direct investment and tax savings for the group.

Table 5-12: Prodimex Group: Regional dissemination (2014)

Oblast	AGRICULTURE					NON-AGRICULTURE				
	Cereal & Crop	Mixed	Cattle	Poultry	Beet	Pig	Processing & Production	Distribution & Storage	Real Estate & Finance	Other Holding & Management
Altai	20	3	4	1			3	10	2	10
Moscow		5		4			4	5	9	1
Voronezh	4	5				1	8	2	1	
Republic of Bashkortostan	1	2			2		4	2		1
Stavropol	2	1			2		2	3		2
Krasnodar	2	2			1		2		2	
Belgorod	3						3			
Republic of Mordovia			5							
Republic of Altai	1						2	1	2	
Rostov				1			1		1	2
Kaliningrad			2				1			
Kursk	3									
Penza	1				1		1			
Republic of Dagestan		1				1		1		1
Samara	1									
Tambov	2						1			
Tver	2	1								
Chelyabinsk							1			1
Ryazan						1	1			
Tula				1					1	
Bryansk						1				
Ivanovo										
Kaluga			1							
Leningrad		1								
Oryol	1									
Primorsky Krai		1								
Republic of Kalmykia		1								
Republic of Mariy El				1						
Republic of Udmurtia							1			
Saratov	1									
Tyumen	1									
Volgograd		1								

Source: Author's own illustration /Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

5.8 RAZGULYAY GROUP

5.8.1 Background

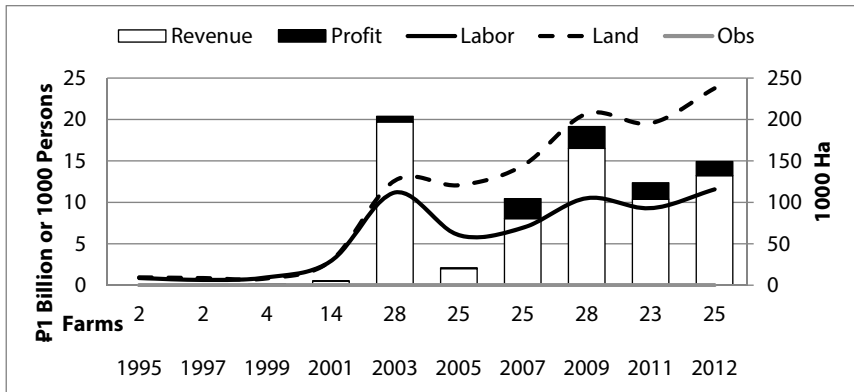
Founded in 1992, traded at the Moscow Stock Exchange, another leader in Russia's sugar market (10 %), occupying over 350 thousand hectares of land (2014), holding 12 elevators, 6 flour milling plants, 3 cereal plants, and 10 sugar refineries with a total annual capacity of 4 million tons of sugar beet processing and 1.4 million tons of raw sugar, Razgulay Group is proactively engaged in sugar beet, grain, rice, soya, poultry, beef and dairy production and processing. The group is a vertically and horizontally integrated agroholding comprising production, processing, storage, distribution, wholesale, trade, real estate and land management, as well as holding and finance operations (see Table 5-13).

5.8.2 Performance

Membership in a number of lobbying organizations, such as Russia's Sugar Beet and Southern Rice Unions, promoted a solid corporate financial growth already since 2003. The group's Total Revenue grew from 6.49 million RUR (1995) to 13.22 billion RUR (2012). Gross Profit increase from 3.35 million RUR (1995) to 1.70 billion RUR (2012). The Land Bank rose from 9.54 thousand hectares (1995) to 237.54 thousand hectares (2012). The group's employment grew from 868 persons (1995) to 11.57 thousand persons (2012). The total count of farms with agricultural land and production increased from 2 (1995) to 25 (2012) (see Figure 5-8).

5.8.3 Geographic dissemination

Razgulay operations are spread all around Russia, with most of its assets located in the Chernozem Central and Southern Federal Districts of the Russian Federation. Though several elevators, e.g. wheat and sugar farms and plants are located in the Republics of Tatarstan, Bashkortostan, Omsk, Orenburg oblasts, as well as Altai Kray (see Table 5-14).

Figure 5-8: Razgulyay Group: Land, labor, capital

Source: Author's own illustration.

5.8.4 Ownership structure

Since its conception, the agroholding was a vertically integrated structure with a consolidated ownership and control where Potapenko Igor while being the largest shareholder of the group also was its Chief Executive Officer. In 2014 Mr. Potapenko was arrested on charges of "large scale frauds", pertinent to alleged land machinations. Presently, the ownership and control is still consolidated by Lazarenko Yelena (Chief Executive Officer and Chairman of the Board) and Karpov Igor (Chief Operations Officer and Chairman of the Management Board), who own shares in group's subsidiaries. Besides the omnipresent participation of Razgulyay Group in various lobbying organizations in the Russian Federation, the financial success of the agroholdings largely depends on its other principal shareholders, e.g. foreign and domestic banks and investment funds, e.g. (INTERFAX, 2012). The Deutsche Bank, State Street Bank and Trust Company, Vnesheconombank, foreign affiliates and subsidiaries located in Bermuda, British Virgin Islands, Cyprus, Lichtenstein, Marshall Islands, and Netherlands, altogether herald the group's financial advantages in terms of tax savings and foreign direct investment.

Table 5-14: Razgulay Group: Regional dissemination (2014)

Oblast	AGRICULTURE			NON-AGRICULTURE				
	Cereal & Crop	Sugar Beet	Mixed	Distribution & Storage	Production	Other & Finance	Holding & Management	Real Estate & Land MGT
Moscow	1		1	5	2	6	8	2
Krasnodar	3	1	1	1	5	1		
Kursk	1	1		3	5			
Belgorod	4	1			2			
Rostov	1		1	2		2		
Orenburg				2		2		1
Stavropol	1			3			1	
Republic of Tatarstan				3	1		1	
Republic of Bashkortostan		1	1	1	1			
Republic of Karachayevo-Cherkessiya		1	1		2			
Oryol	1	1			2			
Omsk				3				
Voronezh	1			1	1			
Altai					1			1
Republic of Karelia					1			1
Samara		1		1				
Ivanovo					1			
Lipetsk								1
Ryazan				1				
Tver	1							
Volgograd								

Source: Author's own illustration.

Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

5.9 RUSAGRO GROUP

5.9.1 Background

Established in 1995 by Moshkovich Vadim, one of Forbes richest Russia's billionaires, a senator from Belgorod and a member of the Council of the Russian Federation since 2006, Rusagro Group is one of Russia's leading sugar manufacturers. The agroholding began as sugar trading operations importing Ukrainian sugar, similar to Razgulay Group, and is now traded at the London Stock Exchange. Moshkovich was one of the first ever to admit that success in Russian business is directly linked to connections with the State, e.g. (FORBES, 2014c). The agroholding is involved in sugar, pork, beef and dairy, soya, corn, peas, and sunflower operations. In addition, and group vertically agglomerates real estate and finance, holding and management, distribution and production facilities, as well as personal protection units, guarding the group's assets (see Table 5-15).

5.9.2 Performance

During 2007-2011, the group sold much of its operations pertinent to sugar and grain production (see Table 5-15 highlighted text), which drastically reduced its Land Bank and Gross Profit. Nonetheless, having acquired Chaplizhenskiy and Nezhegol elevators (largest of former USSR's Strategic State Reserve), the Rusagro Group kept growing constant return to its scale of operations. Considering solely the agricultural production facilities, the group showed growth by Total Revenue increasing from 16.54 million RUR (1995) to 8.61 billion RUR (2012), by Gross Profit increasing from 8.86 million RUR (1995) to 2.65 billion RUR (2012). Labor increased from 1.10 thousand persons (1995) to 9.16 thousand persons (2012) (see Figure 5-9). In 2014 Rusagro controlled 460 thousand hectares of land, e.g. (RUSAGROGROUP, 2014).

Table 5-15: Rusagro Group: Ownership structure by industry (2014)

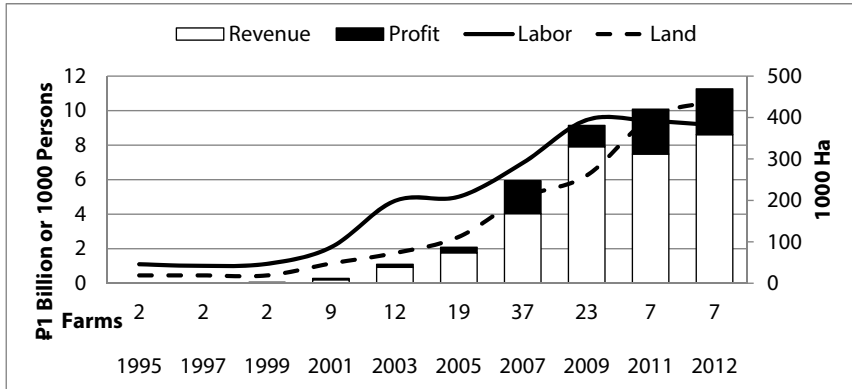
AGRICULTURE		NON-AGRICULTURE	
Cereal & Crop	agronik, ooo	bolshoi sakhar, ooo	avgur esteit, oao
	agrotekhnologii, ooo	firma avek, ooo	bts na tverskoi, zao
	agrotekhnologii, ooo	gk rusagro, ooo	deltainkom, ooo
	fedoseevka-agro, ooo	grup. transforming, ooo	etk n1, zao
	fedoseevskoe pole, ooo	gruppa rusagro, oao	novaya niva, ooo
	grant agro, zao	na tverskoi, oao	regionstroj, ooo
	ivanovskoe, ooo	promsetgarant, ooo ptg	rek n1, zao
	kalininskoe, ooo	rk-reestr, zao	chop rusagro-zashchita, ooo
	khlebnaya niva, ooo	rusagro, fond	kamelot servis, zao
	oskolskie prostory, oao	rusagro-maslo, ooo	ltz, oao
	poletaevskoe, ooo	rusagro-tsentr, ooo	niti im. p.i. snegireva, oao
	rusagro-kozlovka, ooo	rusagro-uchet, ooo	tso pes, oao
	rusagro-shelaevo, ooo	status, zao	zhku, zao
	zlotaya niva, ooo	ters, ooo	
Sugar Beet	rusagro-invest, ooo	velton bank, zao	
	rusagro-kazinka, ooo	finansovy resurs, ooo	
	rusagro-meshkovoe, ooo	komfort, ooo	
	rusagro-novopetrovka, ooo	rusagro-invest, ooo	
	rusagro-novorusanovo, ooo	rusagro-sakhar, ooo	
	rusagro-oskol, ooo	shugar ural, ooo	
	rusagro-pitim, ooo	skhpp, oao	
	rusagro-shebekino, ooo	yauza, ooo	
	rusagro-tsvetovka, ooo	zherdevski elevator, oao	
	rusagro-valuiki, ooo	kauchuk-plast, ooo	
Cattle & Pig	rusagro-volonovka, ooo	kkkhp, zao	
	rusagro-zareche, ooo	krasnogvardeiski hlebozavod, ooo	
	zarya, ooo	medsteklo, oao	
	zveryaevskoe, ooo	samaraagroprompererabotka, zao	
	agro-bekon, ooo	suholozhsktsement, oao	
	belgorodski bekon, ooo	um lanbato, oao	
	rusagro-aidar, zao	valuikisakhar, oao	
	rusagro-moloko, ooo	zhirovoi kombinat, oao	
	tambovski bekon, ooo	znamenski sakharny zavod, oao	
	uralski bekon, zao		

Source: Author's own illustration. // Note: Highlighted are farms which went bankrupt due to reorganization/acquisition during 2007-2011.

5.9.3 Geographic dissemination

Rusagro Group derives most of its financial returns from assets held in Belgorod, Moscow and Tambov. Notwithstanding, the group also has presence in Siberia and other Central Black Soil regions (see Table 5-16).

Figure 5-9: Rusagro Group: Land, labor, capital (1995-2012)



Source: Author's own illustration.

Note: Due to data availability (1995-2008), 2009-2012 years are approximate and higher in real terms.

Table 5-16: Rusagro Group: Regional dissemination (2014)

AGRICULTURE				NON-AGRICULTURE				
Oblast	Cereal & Crop	Cattle & Pig	Sugar Beet	Holding & Finance	Production	Distribution & Storage	Real Estate	Other
Moscow				13	3	3	4	2
Belgorod	5	3	1	1	2		1	1
Tambov	1	1			1	3	1	
Samara					1		1	1
Sverdlovsk					2	1		
Kaluga								1
Kursk					1			
Tyumen								1
Voronezh	1							

Source: Author's own illustration.

5.9.4 Ownership structure

Rusagro Group is a family business owned business belonging to Moshkovich Vadim. Although, in accordance with the legislation of the Russian Federation, politicians may not be involved in business operations, Mr. Moshkovich owns

Rusagro Fond (one of the Rusagro Group subsidiaries) and still maintains control of his family business while being a Senator at the Russian Federation Council since 2006. Basov Maksim – the Chief Executive Officer of Rusagro Group OOO, as well as other Rusagro Group's subsidiaries, maintains direct and indirect shareholdings within the conglomerates, which makes it an agroholding with a consolidated ownership and control, similar to all other Russia's integrated structures. Throughout its existence, the group had shareholders located in Cyprus and Gibraltar, which facilitated foreign direct investment, as well as tax savings and its higher income.

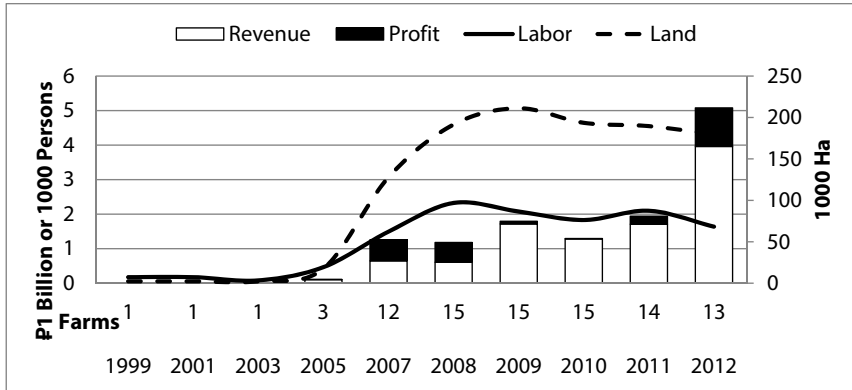
5.10 VAMIN-TATARSTAN GROUP

5.10.1 Background

Ranked one of the Top-30 Most Efficient Land Users in the Russian Federation, another vertically integrated agroholding of Vamin-Tatarstan already in 2013, having 26 agricultural enterprises, 28 milk processing plants, 10 grain farms, The agroholding is involved in cereal and crop, and beef and dairy production, processing, storage, retail and wholesale, real estate and investments (see Table 5-17).

5.10.2 Performance

The agroholding was established in 1994 and began showing solid growth in 2005. Consequently, the group increased its Total Revenue from 2.28 million RUR (1999) to 3.96 billion RUR (2012). Its Gross Profit grew from -2.34 million RUR (1999) to 1.12 billion RUR. The group's farm operations amounting to 1 farm and Land Holdings of 176 hectares in 1999 increased to 13 farms and 179.64 thousand hectares in 2012 (see Figure 5-10). By 2013 the group had 443.8 thousand hectares of land and achieved a Total Revenue of 18.08 billion RUR, e.g. (RBC, 2013).

Figure 5-10: Vamin-Tatarstan Group: Land, labor, capital (1995-2012)

Source: Author's own illustration.

5.10.3 Geographic dissemination

Most of the group assets are conducting operations in the Republic of Tatarstan, except Vamin, OOO (the trading house) and SG MSK, OAO (Life insurance firm) located in Moscow oblast.

5.10.4 Ownership structure

The Vamin-Tatarstan Group is a family owned business belonging to Vagiz Mingazov – a senator from the Republic of Tatarstan and a member of the Russia's Federation Council 2011-2014, actively involved in politics since 1988. The conglomerate has consolidated ownership and control structure where Mingazov Vagiz is a Chief Executive Officer, and his family members, e.g. Mingazov Iskander, Mingazov Mintimer, and Mingazova Roza directly own shares in Vamin-Tatarstan OAO, e.g. (BUSINESSONLINE, 2014).

Table 5-17: Vamin-Tatarstan Group: Ownership structure by industry (2014)

AGRICULTURE		NON-AGRICULTURE		
Cereal & Crop	Mixed	Processing & Production	Retail & Wholesale	Other
af ak-chishma, ooo	af bola, ooo	archa, ooo	baikonur, ooo	arskoe upr. torg, ooo
af archa, ooo	af druzhba, kp ooo	arski pishche kbt, ooo	chulpan, ooo	invest. region, co, oao
af bor, ooo	af ik, ooo	chistopolski mol kbt oao	khk tetra-invest, ooo	kaskad-m, oao
af kukmara, kp ooo	af kama, ooo	vamin tatarstan, oao	korsa, ooo	sg msk, oao
af takanysh, ooo	af sarsazy, ooo		kurkachinskoe khpp, oao	spp ak bars, ooo
af tatarstan, ooo	af severny, kp ooo		narat, ooo	
af vamin aksu, ooo	af tatarstan, ooo		novy liner, ooo	
af vamin archa, kp ooo	af tukai, ooo		obshchestvennoe pitanie, ooo	
af vamin bua, ooo	af urozhai, kp ooo		optovik, ooo	
af vamin chistai, ooo	af vamin mardzhani, ooo		rybno-slobodski zernoprod., ooo	
bio tehnologii, ooo npp	af vamin minzalya, kp ooo		shemordanskoe khpp, oao	
chistopolski elevator, kp oao	af vamin tyulyachi, kp ooo		shushma, ooo	
skhp severny, ooo	arski rybhov, ooo		torg, ooo	
	asanbash, kp ooo		vamin, ooo td	
	novaya zhizn, kp ooo		zainskoe khpp, oao	
	soya kulaevo, ooo			
	vamin tatarstan i co, kt			
	yasnaya polyana, ooo			

Source: Author's own illustration.

Note: Mixed signifies one farm's diversified integrated agricultural and animal husbandry activities.

5.11 SYNOPSIS

Ownership structures, regional distribution, and growth factors, such as political lobbying and/or offshore asset "parenting", complimented with key performance figures, e.g. land, labor, and capital, were presented in the above Chapter 5. Ten out of largest 65 agroholdings of the Russian Federation, constituting over half of Russia's agricultural Total Revenue and close to 90 % of its Gross Profit by 2012, were portrayed answering the Objective 2 of this Thesis, e.g. A comprehensive depiction of ownership structures of agroholdings in Russia. Notwithstanding the heterogeneous agroholdings' development, all domestic and foreign agricultural business groups unveiled a common resemblance, i.e. drastic financial growth during 2001-2003. The reason requires yet a peculiar analysis, but may have resulted due to governmental measures such as that of "Federal Program on Soil Fertility Improvement for 2002-2005", "Federal Scientific Development in Agricultural Complex Program for 2003-2010", "Federal Program on Social Development of Villages for 2003-2013), as well as the most poignant "Priority National Project on Development of Agricultural Complex" which commenced since early 2000's, e.g. (MARCHENKO et al., 2014).

6 SUMMARY AND CONCLUSIONS

This chapter provides the principle findings and conclusions of this thesis. Section 6.1 reinforces the theoretical precepts utilized in support of general business groups' and Russia's agroholdings' *raison d'être*. Section 6.2 reiterates the significance of the empirical results of Chapters 3, 4, and 5. Section 6.3 offers an executive conclusion followed by the portrayal of the future potential development of Russia's integrated structures, given the country's retrospect and current socioeconomic and political determinations.

6.1 THEORETICAL DÉNOUEMENT

The Institutional Economics and Corporate Governance were the main incorporated theories testing the hypotheses of this thesis in quest for reasons behind the omnipotent prevalence of agroholdings in the Russian Federation.

Section 2.1 provided the Institutional perspectives on the existence of the phenomena, suggesting the vertical integration to be an advantageous solution consequent upon high costs of transacting on the market (see 2.1.2), heavy institutional embeddedness (see 2.1.1), and extremely deficient property rights (see 2.1.3) reigning in the Former Soviet Union economies, and particularly, in the Russian Federation.

The inflicted by opportunism omnipresent distrust preventing contractual repetitions, failure due to bounded rationality and uncertainty to predict risks associated with potential hostile takeovers, incomplete contracts due to the hold-up problem stemming from bipartisan unspecified asset relationships, incompetent due to moral hazard and adverse selection decision making – all constituted transactional expenses that impelled large and small vulnerable agribusinesses to integrate into agroholdings and, as a group, surmount the abovementioned risks.

The ubiquitous corruption due to the perverted rule of law, the widespread trust in "blat" – the informal personal connections, the dysfunctional credit markets favoring the largest integrated businesses, as well as the policy makers' belief in the superiority of large-scale farming, inherited from the former kolkhozes and sovkhozes mentality, all were integral embedded institutions, deeply rooted in most of the population which streamlined the formation of agricultural business groups in Russia (see 2.1.2).

The high contractual externalities driven by inefficient bipartisan resource allocation, the fragile judicial system with an incompetent law failing to accurately

define the legal and economic property rights, further urged integration with business groups, *en masse*. Taking into consideration the "do or die" circumstances of the post Soviet Union disintegration transition period, the patronage by the Business Groups served a far more substantial role to smaller farms' and/or firms' than their compromised upon *de facto* or *de jure* accession property rights (see 2.1.3).

Section 2.2 elicited the discussion on the importance of business groups, corporate performance measurement techniques, and emphasized the implication of measuring corporate ownership and performance relationship, given an international experience. A literature review was provided in regards to corporate governance arrangements in the United States, Asia, Western and Eastern Europe, as well as in Russia. Positive and negative argumentation were discussed concerning the ownership structure, e.g. merged versus dispersed ownership and control, family versus non-family governance, business group affiliation versus solitary firm existence, as well as shareholding concentration ratio, as instruments to mitigate the "principal-agent" problem existing in the international corporate realm, and their subsequent impact on firm performance (see section 2.2.1).

The international corporate governance scholarship research suggests that the overall corporate performance impairments, stemming from high transaction costs of the dispersed corporate ownership and control, prove to be alleviated via unification of the latter. The losses derived from the low managerial shareholding participation, their subsequent (potential) opportunistic corporate theft at the expense of the minority shareholders, and the principals' costs associated with monitoring their agents – encourage most corporate structures in the Eastern Europe, as well as in some Western economies, to have a consolidated ownership and control (see section 2.2.2).

6.2 EMPIRICAL DÉNOUEMENT

The occurrence of agroholdings in the Russian Federation during 1995-2014, their regional dissemination, social, economic, and political significance for the country were explained on macro (Chapter 3) and micro (Chapters 4 and 5) levels.

Chapter 3 provided the definition of the agroholding phenomenon, simultaneously explaining the farming structural typology existing in Russia's agricultural complex, e.g. agricultural firms, individual farms, household plots, in accordance with the Russian Federal Statistics Service (see section 3.1). In Chapter 4 the contribution to testing the main hypotheses of the thesis was scrutinizing Farms in two of the most strategically important regions of the Russian Federation (Belgorod and Moscow), paying attention to the ownership types (private

versus state), membership (agroholding farms versus individual farms), ownership and control consolidation, and ownership shareholding concentration ratio (see section 4.1).

In section 3.2 the role of agroholdings in Russia's agribusiness was described from the Regional Distribution, Total Revenue, Land, and Labor perspective, covering the entire Russian Federation. In addition, the State's financial backing was reviewed comparing the agroholdings' corporate farms to individual stand-alone farm enterprises, in terms of subsidies distribution, accounting for farms' geographic location and agribusiness industry, e.g. agriculture versus animal husbandry.

Using an exclusive database of the Russian Institute of Agrarian Problems and Informatics and the Professional Market and Company Analysis System 65 largest agroholdings in Russia were investigated. The former data source supplied the necessary for the estimations farm level performance indicators, and the latter – the ownership intelligence. Applying the Fixed Effects Ordinary Least Squares Regression analysis (see section 3.5), and controlling for the quantified ownership composition, i.e. state (federal, regional, municipal), private and foreign owned farms, the impact of corporate ownership on economic and financial performance of farms (1995-2008) was analyzed, followed by the portrayal of the largest 65 agroholdings' development in Russia (1995-2012).

The results indicated that most of the largest 65 agricultural business groups' farms, during 1995-2012, were primarily situated in the Center, South, and Volga Federal Districts of Russia. By 2012, while accounting for only about 6 % of Land and 6 % of Labor, the agroholdings generated near 40 % of the Total Revenues of the entire agricultural complex of the Russian Federation (see 3.5). The private and foreign held agroholding farms were found to exert a positive impact on their farms' performance, in regards to gross profit, where foreign held agroholdings showed positive correlation with the land productivity. However, privately held agroholdings correlation with the land productivity indicated a negative relationship – all statistically significant at 0.01 %. The regional dissemination played a poignant role concerning the performance of all models, e.g. Total Revenue, Gross Profit, Labor and Land Productivity, suggesting the superiority of the Center, North West, and partly South Federal Districts to the other five regions (see 3.6).

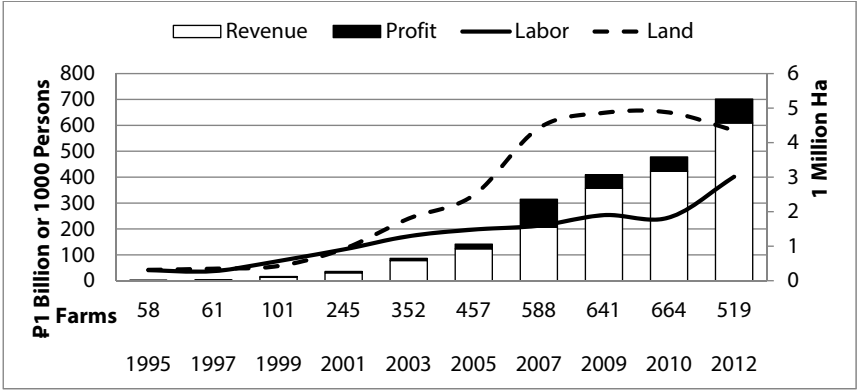
Chapter 4 analyzed the economic relationship between the ultimate ownership structures, e.g. agroholding membership, types, and ownership consolidation, of farms in Belgorod and Moscow oblasts, and the impact on their respective farms in terms of economic, as well as financial performance during 2001-2007. Using unique databases of Professional Market and Company Analysis System, the First Independent Rating Agency, and the State Statistics Committee of Belgorod

Oblast, ownership was traced using the bottom up approach (see 4.2.1) similar to methodology used by (LA PORTA et al., 1999), and compared with the natural logarithms of the Total Revenue, Gross Profit, Return On Assets, Return On Sales, Return On Equity, and Labor and Land Productivity (see 0).

Answering the main hypotheses of this thesis, the estimated Fixed Effects Ordinary Least Squares regression models revealed evidence of negative relationship between farm membership and performance with respect to the Total Revenue and Labor Productivity. The ownership types, e.g. State versus Private exhibited to be statistically insignificant for all models, with regard to farm performance outlook. Ownership and Control merging ascertained to be positively associated with the farm performance, although only statistically significant for Labor Productivity.

Chapter 5 provided a concrete description, in terms of labor, land, and capital, regional significance and precise composition of the largest 10 integrated structures of the Russia’s agricultural complex. Evidently, they and the other 55 largest agroholdings reinvigorated production chains and vastly contributed to the economic recovery in country’s agro-food sector considering the crises of 1998 and 2008. During 2001-2003 periods agroholdings exhibited a rapid growth in terms of the Total Revenue, Land, and Gross Profit. By 2012 possessing only 6.21 % of Labor, 3.86 % of Land, Russia’s largest 65 agroholdings contributed 52.51 % of the Total Revenue and 87.05 % of Gross Profit in Russia’s Agricultural Complex (Figure 6-1).

Figure 6-1: Russia’s largest 65 agroholdings: Land, labor, capital (1995-2012)



Source: Author’s own illustration.

6.3 CONCLUSION AND FUTURE PROSPECTS

With respect to answering the hypotheses of this thesis, e.g. ownership structure portrayal and its subsequent impact on farm performance in the agricultural complex of the Russian Federation, the empirical estimations of Chapter 3 and Chapter 4 showed that the majority of the studied agroholdings, including those portrayed in Chapter 5, integrate the whole agri-food supply-chain via vertical and horizontal incorporation. Most are family owned private businesses with a great deal of connections to political parties, or possess personal or familial current or a priori history in political involvement. The agricultural business group tend to have a consolidate ownership and control, as well as largely appropriate the shareholding shares, e.g. over 51 % plus 1 share of corporate stock. By doing so and due to the fact that most of the corporate agribusiness world in Russia is not publically traded, they secure their control rights over their farms' assets.

Both of the empirical Chapters 3 and 4 confirmed negative relationship between Agroholding Membership and the Total Revenue of farms. Yet, considering Figure 6-1, regardless of the financial crises and any other miscellaneous calamities, the number of farms during 1995-2010, as well as total agroholdings agricultural operations' revenue steadily grew. This suggests that agroholding may use intra-group transfer-pricing mechanism, e.g. showing lower purchasing prices than real values in their financial statements, which ultimately affects the results of the estimations.

The positive impact of private ownership on Gross Profit, overall in Russia, whilst a negative influence on the same variable in Belgorod and Moscow oblast, suggests that the future of agroholdings' development will be dependent upon original acquisition incentive, e.g. pull versus push factors. The economic success of the agroholdings may depend on whether the acquisition motivation will come from an agricultural operators interested in agrarian sector as a core business, or whether it is to come from a *de facto* outsiders to agribusiness attracted to agriculture merely by portfolio diversification purposes, highly discounted prices of land, or compelled to take over the agribusiness, as afore noted in Belgorod Oblast.

Regardless of the last three developmental reasons, the success of agroholdings will vastly be contingent upon the connections of their owners and/or operators, with the state regional and/or supreme bodies, and the financial and juridical legislation of the Russian Federation, e.g. the taxation system and ability to have *de-jure* (foreign legal entities, e.g. Deutsche Bank, etc.) and *de-facto* (offshore zones, e.g. Panama, British Virgin Islands, etc.) foreign direct investments in forms of umbrella or subsidiary firms. Given the experience of agroholdings such as Tatarstan's Krasniy Vostok with its operator-politician Mr. Hayrullin, as well as

other politically associated agribusiness owners and/or operators, such agroholdings might stay afloat notwithstanding their financial efficiency.

Furthermore, considering the current political dilemma between the Russian Federation and the Western economies over Ukraine's illegal territorial occupation, and the fact that some of the 65 examined agroholdings are included in the registry of "systemic companies", i.e. strategically important to Russia agricultural tycoons, in accordance with regional reemployment and revenue generating, such as Wimm-Bill-Dann (currently owned by PepsiCo) or Avida (largest milk producer/exporter in Belgorod oblast) – such agribusinesses will continue to operate regardless of the profitability due to the national socioeconomic significance. Keeping the political perspective in view due to the military crisis escalation in Ukraine, if the West were to impede the Russian agricultural complex prosperity via cutting the *de-facto* or *de-jure* foreign direct investments located in the afore stated offshore zones, and/or via other financial or political means, Russia's domestic and foreign owned agroholdings will necessitate an increased support by the State.

While facilitating the scholars interested in Corporate Governance and Performance Relationship of largest business groups of the agricultural complexes of the Former Soviet Union economies the scare and a priori unavailable farm level data on most of Russia's largest agroholdings, this thesis necessitates further research with respect to the Corporate Governance theory and Ownership structural effect on performance. All of the agroholdings, similar to the Belgorod-Moscow in-depth analysis in Chapter 4, ought to be studied via individual case studies bases, to be able to incorporate crucially important dummies potentially impacting the farm performance, such as merged vs. dispersed ownership and control, agroholding membership, and share concentration ratio after 2012, in the analysis. In addition, the quantitative empirical scrutiny will be much more productive given the potential qualitative interviews vis-à-vis the principal agroholding owners, as well as regional and national governments and significant agri-food lobbying bodies, such as grain or milk producers' unions, etc.

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8 APPENDIX

Table 8-1: Descriptive statistics (distribution of agroholding farms), 1995-2012

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total	245	252	262	284	351	416	566	693	811	868	971	1,079	1,124	1,111	1,128	1,088	892	871
Independent	187	194	201	220	250	277	321	394	459	485	514	546	536	495	487	424	361	352
Dependent	58	58	61	64	101	139	245	299	352	383	457	533	588	616	641	664	531	519
Avg	2	2	2	2	3	4	6	6	6	6	7	9	9	9	10	10	8	8
SD	2	2	2	2	2	4	5	6	6	6	6	7	8	8	7	7	7	6
Min	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Max	7	7	7	7	10	22	26	28	28	30	28	32	42	43	34	34	33	34
Holdings	25	25	27	28	37	38	44	51	55	59	61	61	64	65	65	65	63	63
PRIVATE																		
Avg	2	2	2	2	3	3	5	5	6	6	7	8	8	9	9	9	8	8
SD	2	2	2	2	2	4	5	6	6	6	6	7	8	7	7	7	6	6
Min	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Max	6	6	6	6	9	22	26	27	28	30	26	32	42	43	33	33	32	33
Sum	55	55	57	60	89	120	222	270	315	342	405	478	533	560	584	606	483	470
Holdings	23	23	24	25	33	35	43	50	54	57	59	60	63	65	65	64	62	62
STATE																		
Avg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
SD	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	1
Min	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Max	1	1	1	1	1	2	2	2	2	3	3	3	2	2	3	3	4	4
Sum	3	3	3	3	7	11	10	11	14	19	17	18	20	17	18	23	19	24
Holdings	3	3	3	3	7	10	9	9	11	14	12	14	15	13	13	17	13	16
FOREIGN																		
Avg	0	0	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1
SD	0	0	0	0	0	1	2	2	2	1	1	2	1	1	1	1	1	1
Min	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Max	0	0	1	1	1	4	7	8	7	6	6	7	7	7	7	4	3	3
Sum	0	0	1	1	5	8	13	18	23	22	35	37	35	39	39	35	29	25
Holdings	0	0	1	1	5	5	7	10	11	14	20	19	20	22	25	27	23	20

Source: Author's own estimation.

Note: Avg (Average), SD (standard deviation), Min (minimum), Max (maximum).

Table 8-2: Descriptive statistics (total revenue of agroholdings), 1995-2012

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ALL																		
Avg 1 bil rub	0.02	0.03	0.03	0.04	0.13	0.13	0.13	0.14	0.22	0.21	0.27	0.30	0.35	0.42	0.56	0.64	0.93	1.17
SD 1 bil rub	0.03	0.04	0.05	0.07	0.40	0.40	0.44	0.50	1.05	0.57	0.78	0.89	1.28	1.41	1.70	2.27	3.36	3.81
Min 1 bil rub	0.39	0.58	0.20	0.51	0.09	0.04	0.03	0.04	0.06	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.09
Max 1 bil rub	0.19	0.26	0.34	0.50	2.77	3.27	4.14	5.31	17.02	5.04	7.28	12.00	22.75	17.15	20.50	29.06	42.02	49.29
Sum 1 bil rub	1.17	1.62	1.83	2.52	13.32	18.60	30.78	41.68	78.15	79.60	123.52	158.09	206.79	261.72	357.39	422.62	491.28	609.25
PRIVATE																		
Avg 1 bil rub	0.02	0.03	0.03	0.04	0.10	0.10	0.10	0.12	0.15	0.17	0.22	0.24	0.30	0.38	0.49	0.57	0.81	1.02
SD 1 bil rub	0.03	0.04	0.05	0.08	0.31	0.29	0.34	0.43	0.50	0.48	0.66	0.67	0.89	1.27	1.52	2.23	3.16	3.18
Min 1 mil rub	0.39	0.58	0.82	0.51	2.08	0.06	0.08	0.04	0.06	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.09
Max 1 bil rub	0.19	0.26	0.34	0.50	2.72	2.47	3.86	5.31	5.68	4.63	6.05	7.35	10.04	17.15	17.89	29.06	42.02	39.30
Sum 1 bil rub	1.12	1.52	1.72	2.38	8.95	12.28	22.00	31.53	47.04	59.33	90.55	116.04	159.63	212.92	288.16	347.50	392.68	477.86
STATE																		
Avg 1 bil rub	0.02	0.03	0.04	0.05	0.46	0.38	0.52	0.53	0.52	0.44	0.52	0.57	0.40	0.65	1.22	1.14	1.52	1.68
SD 1 bil rub	0.02	0.04	0.04	0.05	1.02	0.96	1.28	1.37	1.34	1.14	1.19	1.29	0.45	0.65	1.86	1.89	2.51	2.59
Min 1 mil rub	2.05	3.63	3.80	3.99	0.09	0.04	0.03	3.71	9.19	5.93	3.05	0.20	1.61	18.56	6.05	5.33	11.26	2.26
Max 1 bil rub	0.04	0.07	0.08	0.10	2.77	3.27	4.14	4.64	5.14	5.04	4.97	5.44	1.63	2.80	7.78	8.47	10.68	11.47
Sum 1 bil rub	0.06	0.10	0.11	0.14	3.24	4.13	5.19	5.84	7.24	8.31	8.87	10.32	8.03	11.13	22.05	26.28	28.94	40.42
FOREIGN																		
Avg 1 bil rub	-	-	0.00	0.00	0.23	0.27	0.28	0.24	1.04	0.54	0.69	0.86	1.12	0.97	1.21	1.40	2.40	3.64
SD 1 bil rub	-	-	-	0.33	0.43	0.52	0.48	3.51	0.93	1.50	2.14	3.86	2.78	3.37	2.96	5.94	-	10.13
Min 1 mil rub	-	-	0.20	2.59	0.37	0.52	0.09	0.54	0.19	1.49	0.01	0.02	0.01	0.11	0.04	0.01	0.05	1.65
Max 1 bil rub	-	-	0.00	0.00	0.79	1.30	1.94	2.06	17.02	3.92	7.28	12.00	22.75	16.75	20.50	13.96	27.92	49.29
Sum 1 bil rub	-	-	0.00	0.00	1.14	2.19	3.59	4.31	23.87	11.96	24.10	31.73	39.13	37.67	47.19	48.84	69.66	90.97

Source: Author's own estimation.

Note: Avg (Average), SD (Standard Deviation), Min (minimum), Max (maximum), rub (Russian rubles), bil (billion), mil (million).

Table 8-3: Descriptive statistics (gross profit of agroholdings), 1995-2012

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ALL																		
Avg 1 bil rub	0.01	0.01	0.01	0.01	0.03	0.02	0.02	0.02	0.02	0.02	0.04	0.14	0.18	0.24	0.08	0.08	0.12	0.20
SD 1 bil rub	0.02	0.02	0.02	0.02	0.11	0.09	0.09	0.09	0.10	0.08	0.12	0.37	0.52	0.68	0.29	0.28	0.39	0.54
Min 1 bil rub	0.00	0.00	0.00	0.00	-0.02	-0.04	-0.01	-0.05	-0.09	-0.08	-0.06	-0.02	-0.02	-0.03	-0.30	-0.42	-0.15	-0.19
Max 1 bil rub	0.11	0.11	0.11	0.13	0.93	0.73	0.89	1.16	1.19	0.68	1.01	3.65	6.68	9.92	3.70	2.69	5.41	6.35
Sum 1 bil rub	0.47	0.37	0.53	0.66	2.90	3.02	5.19	5.28	8.12	9.26	17.69	75.84	108.04	149.36	51.68	55.42	61.79	92.02
PRIVATE																		
Avg 1 bil rub	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.02	0.03	0.13	0.16	0.21	0.07	0.07	0.10	0.17
SD 1 bil rub	0.02	0.02	0.02	0.02	0.10	0.08	0.05	0.05	0.07	0.06	0.10	0.34	0.48	0.64	0.25	0.25	0.32	0.45
Min 1 bil rub	0.00	0.00	0.00	0.00	-0.02	-0.04	-0.01	-0.05	-0.09	-0.08	-0.06	-0.02	-0.02	-0.03	-0.30	-0.24	-0.15	-0.19
Max 1 bil rub	0.11	0.11	0.11	0.13	0.93	0.73	0.56	0.60	0.75	0.59	0.83	3.65	6.68	9.92	3.19	2.69	4.01	4.39
Sum 1 bil rub	0.44	0.34	0.50	0.60	2.01	1.99	3.26	3.15	5.15	6.66	12.89	59.99	87.43	119.10	40.11	43.06	47.81	72.42
STATE																		
Avg 1 bil rub	0.01	0.03	0.01	0.02	0.10	0.06	0.10	0.12	0.09	0.05	0.06	0.19	0.27	0.52	0.17	0.15	0.14	0.25
SD 1 bil rub	0.01	0.01	0.02	0.23	0.19	0.28	0.35	0.32	0.16	0.14	0.29	0.36	0.57	0.23	0.00	0.23	0.23	0.34
Min 1 mil rub	0.44	32.24	1.99	1.23	-4.18	-19.93	-3.97	-15.27	-56.73	-26.54	-1.96	-2.35	-16.63	-5.27	-137.51	-84.57	-57.53	-7.54
Max 1 bil rub	0.02	0.03	0.03	0.04	0.62	0.62	0.89	1.16	1.19	0.68	0.59	1.09	1.27	2.26	0.88	0.97	0.92	1.35
Sum 1 bil rub	0.03	0.03	0.03	0.05	0.70	0.69	1.02	1.27	1.33	0.91	1.05	3.45	5.33	8.82	3.12	3.38	2.61	5.88
FOREIGN																		
Avg 1 bil rub	-	-	0.00	0.00	0.05	0.04	0.07	0.05	0.07	0.08	0.11	0.34	0.44	0.55	0.22	0.26	0.39	0.55
SD 1 bil rub	-	-	0.05	0.09	0.19	0.14	0.15	0.15	0.23	0.68	0.88	1.07	0.62	0.56	1.03	0.00	0.00	1.35
Min 1 mil rub	-	-	-0.65	1.13	0.85	-10.86	-2.08	-10.96	-8.70	-5.87	-44.82	-11.29	-12.54	-10.88	-67.34	-419.74	-70.74	-12.91
Max 1 bil rub	-	-	0.00	0.00	0.12	0.27	0.68	0.59	0.56	0.55	1.01	2.96	4.03	4.98	3.70	2.60	5.41	6.35
Sum 1 bil rub	-	-	0.00	0.00	0.19	0.34	0.90	0.86	1.64	1.68	3.75	12.40	15.29	21.44	8.44	8.98	11.37	13.73

Source: Author's own estimation.

Note: Avg (Average), SD (Standard Deviation), Min (minimum), Max (maximum), rub (Russian rubles), bil (billion), mil (million).

Table 8-4: Descriptive statistics (total land of agroholdings), 1995-2012

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Avg 1 tsd ha	5.45	5.74	5.84	5.93	6.20	5.94	5.66	6.70	7.41	7.32	8.38	9.77	11.85	13.38	12.60	13.06	14.20	15.17
SD 1 tsd ha	5.62	5.62	5.89	6.12	7.27	7.71	6.83	9.30	10.50	10.06	10.67	12.35	14.59	17.05	16.28	16.47	17.34	17.97
Min 1 tsd ha	0.04	0.04	0.04	0.04	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.01	0.02	0.03	0.03	0.03	0.04	0.03
Max 1 mil ha	0.02	0.02	0.02	0.02	0.04	0.05	0.06	0.09	0.09	0.09	0.09	0.13	0.17	0.17	0.17	0.17	0.17	0.17
Sum 1 mil ha	0.32	0.33	0.35	0.36	0.43	0.57	0.92	1.49	1.80	1.93	2.48	3.52	4.42	5.14	4.86	4.87	4.12	4.35
Avg 1 tsd ha	5.54	5.85	6.03	6.16	6.06	5.97	5.40	6.44	7.22	7.18	8.28	9.44	11.49	13.13	12.18	12.57	13.69	14.67
SD 1 tsd ha	5.74	5.73	6.04	6.26	6.95	7.57	6.13	8.54	9.71	9.30	10.13	10.43	11.96	14.89	13.91	14.09	14.43	15.26
Min 1 tsd ha	0.04	0.04	0.04	0.04	0.02	0.02	0.04	0.04	0.04	0.04	0.04	0.01	0.02	0.03	0.03	0.03	0.04	0.03
Max 1 mil ha	0.02	0.02	0.02	0.02	0.04	0.05	0.06	0.09	0.09	0.09	0.09	0.09	0.09	0.12	0.12	0.12	0.12	0.12
Sum 1 mil ha	0.30	0.32	0.34	0.35	0.39	0.54	0.84	1.36	1.65	1.77	2.29	3.17	4.02	4.75	4.48	4.44	3.70	3.89
Avg 1 tsd ha	3.65	3.70	3.73	3.12	2.57	1.72	1.75	1.60	1.77	1.78	2.88	2.80	3.30	4.02	5.18	8.83	7.59	9.91
SD 1 tsd ha	2.35	2.26	2.17	1.52	1.89	1.81	1.86	1.64	1.25	1.24	3.63	3.68	4.23	6.28	6.67	10.15	9.82	11.28
Min 1 tsd ha	1.12	1.27	1.40	1.37	1.23	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Max 1 tsd ha	5.75	5.75	5.70	4.08	3.91	3.87	4.00	3.42	3.00	3.14	11.26	11.26	11.26	14.89	14.89	32.07	30.21	32.07
Sum 1 tsd ha	10.95	11.10	11.19	9.36	5.14	6.86	6.98	6.41	10.64	17.79	23.02	22.37	29.74	28.12	41.43	97.17	83.50	###
Avg 1 tsd ha	-	-	1.34	1.34	14.35	13.25	19.58	17.33	16.02	20.00	14.80	20.15	26.44	23.72	33.80	37.45	37.45	37.45
SD 1 tsd ha	-	-	18.39	18.67	17.34	21.93	23.47	25.45	21.16	32.73	44.23	45.36	53.38	55.29	55.29	0.00	0.00	55.29
Min 1 tsd ha	-	-	1.34	1.34	1.34	0.05	0.05	0.05	0.36	0.36	0.36	0.16	0.16	0.04	0.10	0.10	0.10	0.10
Max 1 tsd ha	-	-	1.34	1.34	27.35	26.45	39.82	52.54	62.37	62.24	62.13	125.33	165.64	171.56	171.56	171.56	171.56	###
Sum 1 tsd ha	-	-	1.34	1.34	28.69	26.50	78.30	121.32	144.19	140.03	162.83	322.41	370.10	355.80	338.04	337.04	337.04	###

Source: Author's own estimation.

Note: Avg (Average), SD (Standard Deviation), Min (minimum), Max (maximum), tsd (thousand), ha (hectares).

Table 8-5: Descriptive statistics (total labor of agroholdings), 1995-2012

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ALL																		
Avg 1 tsd pers	0.72	0.67	0.61	0.60	0.56	0.48	0.36	0.38	0.40	0.36	0.35	0.33	0.29	0.38	0.40	0.37	0.60	0.77
SD 1 tsd pers	0.61	0.57	0.61	0.69	0.83	0.79	0.65	0.64	0.76	0.69	0.67	0.68	0.62	0.85	0.81	0.74	1.69	2.49
Min 1 tsd pers	0.10	0.09	0.07	0.07	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Max 1 tsd pers	3.71	3.24	3.44	3.97	5.60	6.65	7.26	7.02	7.71	8.30	8.29	8.47	8.77	8.75	7.50	7.50	30.00	30.00
Sum 1 tsd pers	41.96	38.57	37.10	38.50	56.26	66.25	87.26	113.86	139.05	138.46	158.06	177.95	172.85	233.38	253.47	244.15	319.38	401.37
PRIVATE																		
Avg 1 tsd pers	0.72	0.66	0.61	0.61	0.51	0.44	0.33	0.36	0.36	0.33	0.33	0.32	0.29	0.37	0.36	0.34	0.52	0.66
SD 1 tsd pers	0.62	0.58	0.63	0.71	0.72	0.72	0.60	0.60	0.73	0.65	0.66	0.68	0.62	0.87	0.77	0.69	1.61	2.16
Min 1 tsd pers	0.10	0.09	0.07	0.07	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
Max 1 tsd pers	3.71	3.24	3.44	3.97	5.60	6.65	7.26	7.02	7.71	8.30	8.29	8.47	8.77	8.75	7.50	7.50	30.00	30.00
Sum 1 tsd pers	39.68	36.37	35.00	36.58	45.82	52.45	72.51	96.81	114.47	111.59	131.84	154.89	152.62	207.62	211.38	204.86	249.37	307.98
STATE																		
Avg 1 tsd pers	0.76	0.73	0.67	0.59	0.69	0.62	0.68	0.62	0.72	0.63	0.55	0.50	0.41	0.55	0.85	0.80	2.44	2.94
SD 1 tsd pers	0.37	0.39	0.36	0.40	1.07	0.85	0.89	0.87	1.02	0.91	0.77	0.75	0.45	0.46	1.03	1.06	2.89	6.15
Min 1 tsd pers	0.33	0.28	0.27	0.18	0.01	0.01	0.01	0.05	0.02	0.02	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Max 1 tsd pers	1.01	0.98	0.97	0.96	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	1.35	1.57	3.00	3.00	7.50	30.00
Sum 1 tsd pers	2.28	2.20	2.02	1.77	4.82	6.87	6.77	6.80	10.11	12.01	9.37	8.98	8.20	9.43	15.33	18.42	46.34	70.47
FOREIGN																		
Avg 1 tsd pers	-	-	0.08	0.16	1.12	0.87	0.61	0.57	0.63	0.68	0.48	0.38	0.34	0.42	0.69	0.60	0.82	0.92
SD 1 tsd pers	-	-	1.92	1.51	1.14	1.00	0.94	1.04	0.80	0.62	0.63	0.66	1.11	1.03	1.17	0.00	0.00	1.22
Min 1 tsd pers	-	-	0.08	0.16	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01
Max 1 tsd pers	-	-	0.08	0.16	4.51	4.52	4.27	4.36	3.74	4.29	3.74	2.83	3.19	3.65	3.00	3.00	3.00	3.00
Sum 1 tsd pers	-	-	0.08	0.16	5.61	6.93	7.98	10.25	14.47	14.87	16.85	14.08	12.02	16.33	26.76	20.88	23.66	22.92

Source: Author's own estimation.

Note: Avg (Average), SD (Standard Deviation), Min (minimum), Max (maximum), tsd (thousand), pers (persons).

Table 8-6: Descriptive statistics of farms in Belgorod and Moscow (2001-2007)

		2001				2004				2007			
		AVG	SD	MIN	MAX	AVG	SD	MIN	MAX	AVG	SD	MIN	MAX
Total		68				68				68			
BELGOROD	Independent	39				39				39			
	Revenue	44.33	57.06	0.33	354.54	43.41	57.45	1.28	353.50	49.35	68.71	0.00	389.94
	Profit	12.07	23.27	-5.13	146.61	9.21	20.73	-0.98	129.86	10.56	23.08	-14.54	135.76
	Labor	341	286	6	1,709	287	275	4	1,686	215	264	3	1,570
	Land	4.17	2.78	0.12	15.22	4.42	2.93	0.11	15.22	4.45	3.16	0.11	15.22
	Dependent	29				29				29			
	Revenue	19.56	9.50	3.79	47.51	21.32	9.74	6.41	51.68	27.21	16.83	0.70	71.80
	Profit	2.55	2.65	-1.65	12.08	1.17	4.08	-8.26	14.53	3.97	7.30	-11.14	21.63
	Labor	206	88	60	421	187	93	23	406	148	79	2	368
	Land	3.33	1.42	1.03	7.40	4.10	1.84	1.09	8.77	4.05	2.42	0.16	10.55
	Private	64				64				65			
	Revenue	34.26	46.45	0.33	354.54	34.90	46.31	1.28	353.50	40.46	55.20	0.00	389.94
	Profit	8.13	18.78	-5.13	146.61	6.08	16.78	-8.26	129.86	7.76	18.71	-14.54	135.76
	Labor	284	240	6	1709	251	226	4	1686	186	213	2	1570
	Land	3.81	2.34	0.12	15.22	4.26	2.55	0.11	15.22	4.29	2.91	0.11	15.22
	State	4				4				3			
	Revenue	25.85	9.60	18.41	39.84	19.40	7.71	13.38	29.79	27.92	4.96	23.51	33.29
	Profit	6.06	4.11	2.95	12.08	0.93	2.66	-2.91	2.82	7.42	5.01	4.07	13.18
	Labor	267	34	232	312	146	101	23	250	190	14	179	205
	Land	3.82	2.36	1.58	7.06	4.59	1.90	2.68	7.03	3.96	1.14	2.68	4.85
Total		174				174				174			
MOSCOW	Independent	120				112				106			
	Revenue	32.71	46.30	1.41	434.29	31.29	39.75	3.01	340.52	35.37	42.30	2.11	280.72
	Profit	3.90	10.23	-29.30	87.07	0.42	11.19	-29.97	98.10	2.48	9.17	-26.42	47.28
	Labor	268	199	41	1,180	204	157	41	915	161	145	14	842
	Land	2.72	1.48	0.05	9.57	2.57	1.51	0.05	9.56	2.41	1.84	0.03	12.04
	Dependent	54				62				68			
	Revenue	67.32	99.62	1.50	603.90	76.53	174.09	0.62	1,161.48	80.33	200.76	0.16	1,209.87
	Profit	12.86	29.08	-4.68	181.98	8.17	48.50	-69.72	351.73	18.50	86.83	-13.10	647.53
	Labor	391	362	25	2,112	288	329	18	2,310	204	218	11	1,442
	Land	2.28	1.50	0.01	6.28	2.35	1.72	0.01	6.28	2.33	1.50	0.01	6.28
	Private	146				145				432			
	Revenue	43.53	73.28	1.41	603.90	47.51	118.20	1.67	1,161.48	54.85	141.62	1.63	1,209.87
	Profit	6.59	19.88	-29.30	181.98	3.31	32.88	-69.72	351.73	10.04	60.13	-26.42	647.53
	Labor	308	273	41	2112	230	236	34	2310	175	176	12	1442
	Land	2.68	1.47	0.01	9.57	2.54	1.57	0.01	9.56	2.43	1.76	0.01	12.04
	State	33				28				29			
	Revenue	43.16	48.02	1.50	195.83	46.89	54.44	0.62	233.07	43.40	53.72	0.16	245.92
	Profit	7.06	12.41	-6.78	44.59	2.53	10.57	-21.28	35.28	2.27	9.63	-13.10	36.55
	Labor	299	235	25	954	259	238	18	875	191	189	11	760
	Land	2.17	1.54	0.12	6.28	2.21	1.68	0.12	6.28	2.13	1.49	0.04	6.28

Source: Author's own illustration.

Note: Revenue and profit depicted in (million rubles), labor (persons), and land (thousand hectares).

Table 8-7: Belgorod-Moscow farms' ultimate ownership and control: Consolidated versus dispersed

Years	Number of observations										Share of observations									
	All			Separated			Merged				All			Separated				Merged		
	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007		
BELGOROD																				
Family 20	5	4	7	2	2	2	3	2	5	7	6	10	4	5	5	15	8	19		
Family 50	5	9	5	2	2		3	7	5	7	13	7	4	5		15	28	19		
Family 100	29	28	31	22	21	24	7	7	7	43	41	46	46	49	59	35	28	26		
Widely-Held	9	9	9	6	5	5	3	4	4	13	13	13	13	12	12	15	16	15		
Financial	5	6	6	3	3	3	2	3	3	7	9	9	6	7	7	10	12	11		
State	3	4	4	3	4	4				4	6	6	6	6	9	10				
Offshore	7	3	2	7	3	2				10	4	3	15	7	5					
Miscellaneous	5	5	4	3	3	1	2	2	3	7	7	6	6	7	2	10	8	11		
Total	68	68	68	48	43	41	20	25	27	100	100	100	100	100	100	100	100	100		
MOSCOW																				
Family 20	19	22	22	8	9	10	11	13	12	11	13	13	7	7	8	20	26	25		
Family 50	6	7	8	1	3	2	5	4	6	3	4	5	1	2	2	9	8	13		
Family 100	69	67	68	62	61	60	7	6	8	40	39	39	52	49	48	13	12	17		
Widely-Held	35	28	24	15	11	11	20	17	13	20	16	14	13	9	9	37	34	27		
Financial	1	2	2		1	1	1	1	1	1	1	1	1	1	1	2	2	2		
State	29	31	31	27	29	30	2	2	2	17	18	18	23	23	24	4	4	2		
Offshore	10	12	14	7	10	12	3	2	2	6	7	8	6	8	10	6	4	4		
Miscellaneous	5	5	5				5	5	5	3	3	3				9	10	10		
Total	174	174	174	120	124	126	54	50	48	100	100	100	100	100	100	100	100	100		
ALL																				
Family 20	24	26	29	10	11	12	14	15	17	10	11	12	6	7	7	19	20	23		
Family 50	11	16	13	3	5	2	8	11	11	5	7	5	2	3	1	11	15	15		
Family 100	98	95	99	84	82	84	14	13	15	40	39	41	50	49	50	19	17	20		
Widely-Held	44	37	33	21	16	16	23	21	17	18	15	14	13	10	10	31	28	23		
Financial	6	8	8	3	4	4	3	4	4	2	3	3	2	2	2	4	5	5		
State	32	35	35	30	33	34	2	2	2	13	14	14	18	20	20	3	3	1		
Offshore	17	15	16	14	13	14	3	2	2	7	6	7	8	8	8	4	3	3		
Miscellaneous	10	10	9	3	3	1	7	7	8	4	4	4	2	2	1	9	9	11		
Total	242	242	242	168	167	167	74	75	75	100	100	100	100	100	100	100	100	100		

Source: Author's own illustration.

[illegible]

Source: Author's own illustration.

Table 8-9: Belgorod-Moscow structure of farms' ultimate owners' OKOPF (number of observations, 2001-2007)

	TOTAL			CJSC			LLC			OJSC			INST			COOP			UNIT			OTHER		
	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007	2001	2004	2007
BELGOROD																								
Family 20	5	4	7	3	3	3	3	3	1	1	1	3	3	1	1	1	1	1						
Family 50	5	9	5	2	3	1	3	4	3	2	1													
Family 100	29	28	31	13	13	15	6	6	8	4	4	3	2	1			6	5						
Widely-Held	9	9	9	5	4	4				2	3	3	2				2	2						
Financial	5	6	6	1	2	2				4	4	4	1											
State	3	4	4		1				1								1	1	3	2	2			
Offshore	7	3	2				4	1		3	2	2												
Miscellaneous	5	5	4	1	1		2	2	2								2	2						
Total	68	68	68	25	27	25	15	13	14	14	15	17				11	11		3	2	2			
MOSCOW																								
Family 20	19	22	22	9	12	10	1	2	4	1	1	1				4	6	1				4	2	6
Family 50	6	7	8	3	3	2	1	1	3	1	3					2	2							
Family 100	69	67	68	49	48	50	3	1	4	4	4	5				8	12	1				5	2	8
Widely-Held	35	28	24	22	15	12	1		1	3	5	7				5	7	2				4	1	2
Financial	1	2	2	1	1	1						1					1							
State	29	31	31	3	5	5						5	2	2	4				21	22	17	3	2	
Offshore	10	12	14	4	6	5			2	1	2	7				4	4					1		
Miscellaneous	5	5	5													2	3	1				3	2	4
Total	174	174	174	91	90	85	6	4	14	9	12	29	2	2	4	25	35	5	21	22	17	20	9	20
ALL																								
Family 20	24	26	29	12	15	13	1	2	4	2	4	4				5	7	1				4	2	7
Family 50	11	16	13	5	6	3	4	5	6	3	4					2	2							
Family 100	98	95	99	62	61	65	9	7	12	8	8	8				14	17	1				5	2	13
Widely-Held	44	37	33	27	19	16	1		1	5	8	10				7	9	2				4	1	4
Financial	6	8	8	2	3	3				4	4	5					1							
State	32	35	35	3	6	5			1			6	2	2	4		1		24	24	19	3	2	
Offshore	17	15	16	4	6	5	4	1	2	4	4	9				4	4					1		
Miscellaneous	10	10	9	1	1		2	2	2							4	5	1				3	2	6
Total	242	242	242	116	117	110	21	17	28	23	27	46	2	2	4	36	46	5	24	24	19	20	9	30

Source: Author's own illustration. // Note: CJSC (closed joint stock), LLC (limited liability), OJSC (open joint stock), INST (institution), UNIT (unitary), OTHER (all other company types).

Table 8-10: Belgorod-Moscow structure of farms' ultimate holding companies' industries (number of observations, 2001-2007)

	All	Agri.	Food	Federal	R&D	Finance	Consult.	Constr.	Nat. Res.	Other
BELGOROD	2001	3	1							
	2004	7	1							
	2007	3								
	2001	3	1							
	2004	3	1							
	2007	3	1							
	2001	6	2	2	2	1				
	2004	5	2	2	1					
	2007	2	2	1	1					
	2001	5	6							
MOSCOW	2001	4								
	2004	3								
	2007	4								
	2001	4								
	2004	4								
	2007	2								
	2001	9	4	5	1	3	2	1		
	2004	29	4	1	2	1				
	2007	5	1	2	1					
	2001	4	5	1	1					
ALL	2001	3	1							
	2004	7	1							
	2007	3								
	2001	3	1							
	2004	7	1							
	2007	3								
	2001	6	2	2	2	1				
	2004	5	6							
	2007	3	4							
	2001	7	3	2						
	2001	2	1							
	2004	29	4	5	1	3	2	1		
	2007	5	1	2	1					
	2001	4	1	2	1					
	2004	4	1	1						
	2007	5	1	1						
	2001	3	7	1	1	3				
	2004	4	6	1	1					
	2007	1	2							
	2001	29	31							
	2001	10	14	1	1	1	1	2	3	1
	2004	62	68	2	2	3	2	5	8	2
	2007	4	4	5	2	2	3	2	5	4
	2001	4	8	1	3	1	2	1		1
	2004	5	11	2	2	1	2	2	1	1
	2007	11	8	15	2	2	3	1	1	3
	2001	6	8	7	2	2	1	1	1	
	2004	6	8	8						
	2007	32	35	35						
	2001	17	15	16						
	2001	2	2	1						
	2004	83	91	97	6	6	5	5	7	3
	2007	5	5	5	7	3	5	5	3	5
	2001	1	1	1	1	1	1	2	3	1
	2004	3	2	2	3	1	3	2	4	3
	2007	2	2	1						
	2001	6	6	6	6	6	6	6	6	6
	2004	29	32	34	13	12	12	6	6	9
	2007	6	9	12	6	9	12	6	9	12
	2001	1	1	1	1	1	1	1	1	1

Source: Author's own illustration. // Note: Agri. (agriculture), R&D (Research and Development), Consult. (Consulting), Constr. (Construction), Nat. Res. (Natural Resources).

Table 8-11: Worldwide governance indicators (1996-2012)

		1996	1998	2002	2003	2005	2006	2008	2009	2011	2012
Corruption control	CIS	-0.90	-0.85	-0.97	-0.86	-0.90	-0.82	-0.87	-0.93	-0.93	-0.85
	EU	1.67	1.76	1.69	1.65	1.17	1.21	1.06	1.03	1.02	1.01
	OECD	1.43	1.44	1.39	1.41	1.35	1.37	1.35	1.30	1.28	1.27
	RUSSIA	-1.02	-0.94	-0.92	-0.71	-0.78	-0.85	-1.05	-1.09	-1.04	-1.01
Government effectiveness	CIS	-0.78	-0.83	-0.84	-0.78	-0.78	-0.75	-0.67	-0.65	-0.63	-0.58
	EU	1.65	1.70	1.71	1.71	1.30	1.27	1.14	1.16	1.15	1.14
	OECD	1.43	1.45	1.47	1.47	1.42	1.38	1.34	1.35	1.33	1.30
	RUSSIA	-0.52	-0.77	-0.34	-0.39	-0.46	-0.45	-0.34	-0.40	-0.45	-0.43
Political stability, no violence	CIS	-0.68	-0.62	-0.58	-0.55	-0.64	-0.67	-0.28	-0.32	-0.45	-0.39
	EU	1.10	1.08	1.13	0.86	0.84	0.86	0.78	0.68	0.76	0.76
	OECD	0.94	0.92	0.97	0.79	0.77	0.80	0.77	0.68	0.71	0.70
	RUSSIA	-1.23	-1.12	-0.77	-1.20	-1.25	-0.91	-0.76	-0.95	-0.99	-0.82
Regulatory quality	CIS	-0.80	-0.89	-0.84	-0.76	-0.79	-0.76	-0.59	-0.58	-0.57	-0.59
	EU	1.38	1.33	1.49	1.48	1.28	1.29	1.29	1.27	1.21	1.19
	OECD	1.22	1.21	1.30	1.31	1.31	1.31	1.33	1.31	1.29	1.27
	RUSSIA	-0.28	-0.44	-0.26	-0.18	-0.18	-0.41	-0.39	-0.35	-0.36	-0.36
Rule of law	CIS	-0.99	-0.98	-0.99	-0.93	-0.93	-0.98	-0.85	-0.86	-0.86	-0.81
	EU	1.50	1.49	1.49	1.51	1.20	1.23	1.17	1.16	1.16	1.14
	OECD	1.31	1.33	1.30	1.32	1.30	1.31	1.32	1.31	1.30	1.27
	RUSSIA	-0.87	-0.97	-0.87	-0.93	-0.91	-0.93	-0.93	-0.77	-0.74	-0.82
Voice, accountability	CIS	-0.89	-0.82	-1.00	-1.01	-0.99	-1.02	-1.06	-1.04	-1.01	-1.01
	EU	1.41	1.36	1.33	1.34	1.26	1.20	1.15	1.14	1.12	1.12
	OECD	1.25	1.19	1.20	1.21	1.27	1.19	1.19	1.19	1.16	1.16
	RUSSIA	-0.30	-0.55	-0.47	-0.58	-0.68	-0.90	-0.85	-0.90	-0.86	-0.96

Source: WORLD BANK (author's own estimates).

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