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Abstract

This Thesis consists of three chapters. The first chapter entitled "Land and Power: Evidences of Clientelism in Ukraine" investigates the relationship between political corruption and land market outcomes. Three rounds of Parliamentary elections in Ukraine are analyzed. An evidence of systematically lower rental rates for land in districts that exhibit greater electoral support for parties that form the Parliamentary Majority after the elections is found. Also, with the implementation of the land reform that granted more secure property rights for land, political popularity of the centrist parties increased significantly, while the share of votes given to the right or left-wing parties decreased.

The second chapter entitled "Land Market in Ukraine: Good or Bad News?" examines a reaction of investors of agricultural companies to events connected with the extension of the moratorium on land sales in Ukraine. The analysis is done for a sample of Ukrainian big agricultural companies that are traded on a stock exchange using an event study methodology and a dummy-regression approach. Results suggest that the majority of investors of agricultural companies reacted negatively to the extensions of the moratorium before 2010, however, their reaction has changed afterwards. In 2011 the lion's share of investors perceived negatively events connected with the elimination of the moratorium. This might have had to do with a change in political power in Ukraine that happened in 2010. Also, current proposal of the Law "On the Land

Market" that if adopted would automatically dismiss the moratorium does not favour business of big agricultural companies. Therefore, investors currently prefer the moratorium to be in place. Dummy-regression approach suggests that investors' reaction is stronger for companies with larger land holdings. Also, political connections are important; however, their effect is significant only for some post 2010 events. Results suggest that investors of big agricultural companies are not ready for the introduction of the land market under current political and economic conditions in the country.

The third chapter entitled "Impact of Political Regime Shifts on Stock Returns of Oligarch Firms" studies the evolution of the stock prices of 19 politically connected firms around the time of the Orange revolution and two other crucial political events (2010 Presidential elections and the arrest of Yuliya Tymoshenko) in Ukraine. Using an event-study approach I find that political connections do matter in Ukraine. Companies that are strongly linked with the two major Ukrainian parties (Orange coalition and the Party of Regions) are sensitive to shifts of the political regime.

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Contents

List of Figures

List of Tables

Chapter 1

Land and Power: Evidences of Clientelism in Ukraine

1.1. Introduction

In Ukraine activities of political parties have a very strong impact on almost every aspect of economic and social life of the population. Very often political powers distribute resources between different groups of society unevenly. Some regions and districts tend to get more in terms of financing, state subsidies and so on if compared to other districts of the country. Political connections to parties that have a lot of political power, especially those that form the Majority in the Parliament, play crucial role here. Those that have the majority power in the Parliament have the power to form the Coalition Government and, hence, impact economic and social life of every region and a country as a whole. Cases of abusive political control and

corruption are not uncommon in Ukraine and they are often manifested through political favours, clientilism, and violations of human rights. Parliamentary and Presidential elections in Ukraine are often discredited by massive falsifications and political manipulations exercised by the ruling elites. Even though people try to change things for better, like in the case of the Orange Revolution, so far their efforts to improve the political situation in the country appear to be futile1.

This chapter investigates the relationship between the political corruption and the development of the land2 market in Ukraine. As indicated by Keefer (2007), younger democracies are more prone to clientelism, political violence, and targeted transfers to narrow

[1] The Orange Revolution burst out in November 2004 as a reaction to massive falsifications of the Presidential elections that resulted with the victory of Viktor Yanukovych, a candidate supported by the ruling elites. As a result, millions of people throughout the country went out on the streets with a demand of fair re-elections. The leader of the Orange Revolution, Viktor Yushchenko, became the President of Ukraine in January 2005 after the re-elections. After being on his post for 5 years, Viktor Yushchenko, however, was not able to eliminate political corruption in Ukraine and gain enough support throughout the country to win the next elections in 2010. As a result, his long-term rival from the times of the Orange Revolution, Viktor Yanukovych, became the next President of Ukraine. This was a huge disappointment for the millions of people who at the time of the Orange Revolution were fighting against Yanukovych and his regime.

[2] In this paper *land* refers exclusively to agricultural land.

groups of voters. In Ukraine some politicians tend to buy votes of the electorate by exchanging favours for the votes. Such favours can take a form of lower rental rates for agricultural land for companies who encourage their employees to vote for a specific party during the elections. Due to the lack of bargaining power and low security of property rights for land, landowners almost never (re)negotiate their land leasing contracts. Conditions of the latter are usually decided by the agricultural companies (i.e. the tenants) and the ruling elites in a village or district. Around the elections times the elites tend to grant discounts for rental rates to those companies that promise to encourage their workers to vote for a specific political party. Companies, in turn, use employment as a power to control political behavior of their employees by encouraging them to vote for a particular party. As shown by Baland and Robinson (2008), because employers concede rents to workers, whose effort is imperfectly observed, they have a power to politically control their employees threatening them with the withdrawal of those rents. Hence, companies have a possibility to supply the votes of their employees in exchange for different kinds of favours and material

discounts. Such market imperfections tend to occur especially under the malfunctioning political institutions and predominantly in the agrarian economies (Baland and Robinson, 2008; Malefakis, 1970).

Rural areas of Ukraine that are mostly agricultural have a perfect environment for political manipulations and corruption. Majority of people in villages are employed in agriculture, have the lowest levels of income and have limited access to financial markets (State Statistics Service of Ukraine, 2012). Levels of inequality in rural areas are high as well. According to Robinson and Verdier (2003) these are exactly the conditions under which clientelism3, political corruption and abusive political control tend to emerge and develop. Moreover, security of property rights for agricultural land is very low in Ukraine; and even though landowners have formal property rights for their land plots, they cannot really fully exercise them due to the absence of the land market and proper

[3] Clientelism denotes a transaction between a politician or a political party and a member of electorate where material favours are exchanged for the vote during the elections (Wantchekon, 2003).

institutional frameworks that would control and regulate the market transactions with land. Currently there is a moratorium on land sales that prevents landowners from selling their plots and using them as a mortgage. The only transaction they can legally perform is to rent the land. However, the bargaining power of individual landowners in renting relationships is very weak. If individual landowner has on average 4 ha of land, an average agricultural company rents around 2000 ha of land accumulated by signing thousands of lease agreements with the landowners. In such a framework agricultural companies have a lot of power and access to financial and legal resources that allows them to get the lowest rental rates possible. Often the head of a village council or another official responsible for land resources in the village/district stands as an intermediary between a company and individual landowners and has enough power to manipulate the voting behavior of both by promising them favours in exchange for their political support. As documented by the Ukrainian Parliament Commissioner for Human Rights (2004, 2008, 2010), there were many instances throughout Ukraine when landowners were forced by

the village and district officials to sign leasing agreements on terms that were profitable for a lessee, but not to a lessor. Renting contracts are often violated by the tenants and village officials rarely react against these violations by defending the rights of landowners. Moreover, around the elections time village/district officials are often forced by the ruling elites to carry on propaganda and campaign for a pro-elite candidate/party. This propaganda has to ensure a specific satisfactory number of votes if the official in question wants to keep his/her post after the elections (the Ukrainian Parliament Commissioner for Human Rights, 2004, 2008). Being under the pressure from the upper echelons of power, the officials tend to create clientelistic relations with those voters that have the power to control political behavior of others and at the same time need some favours from the officials. Officials from rural areas tend to create clientelistic relations with agricultural companies that have bargaining and market power by supporting them when signing land leasing agreements. In this way, a company gets lower rental rates, while the officials get electoral support. This chapter aims at answering the

question whether indeed political parties tend to allocate more assets and resources to the communities that would give them the strongest electoral support. The question is explored in the area of agricultural and land-leasing relationships using a unique agricultural database that once matched with political data allows for the estimation of existence of clientelistic relationships in the land market framework. Although clientelism may exist in other frameworks and markets, this research tries to detect and evaluate it with the land market data as the first step. Exploring clientelism in other markets can be a topic for further research.

The mechanism behind the main hypothesis, which is an existence of clientelism and politically motivated distribution of resources in the land market in Ukraine, involves four main players: ruling elites, district officials, agricultural companies, and employees of the agricultural companies. Before the elections ruling elites give a task to district officials to ensure a proper electoral support for the ruling party in a district; otherwise district officials lose their privileges and perquisites given by the elites in the period following the elections. Incidentally, district officials are not

interested in opposition party taking over the power after the elections, because in this case they will lose either their jobs4 or preferential treatment they have established with the current elites. Hence, in any way district officials that are linked/loyal to the ruling power have incentives to make sure that power remains after the elections. In order to fulfill their task, district officials carry on propaganda on different levels. Usually agricultural companies have strong and already established connections with district officials before the elections. That is because there is usually a small number of agricultural companies operating in a district (sometimes just only one); and companies have been interacting before the elections time with the officials while gathering information about the land to lease, registering their leases, and getting different land permits. Very often the companies give informal "gifts" to the officials in order to facilitate a very bureaucratic process of registering a lease. These "gifts" the value of which fluctuates around 250 USD/ha (BG Capital, 2010) are even taken into account by agricultural market

[4] Usually as a new party comes to power, it reshuffles all-level officials in order to form a new loyal to the party team.

analysts when calculating the rate of return on the land leasing operations. In this way, by promising different favours and discounts, district officials can ask agricultural companies to campaign for the ruling elites among their employees/villagers. If an agricultural company agrees and the party in question wins the elections, the former gets sizable discounts on its land rents and possibly other favours from district officials; if the party does not get enough votes, however, then the company pays the market rate of rent that it would have paid in any case without the deal.

Usually agricultural companies employ local population to work on the land. As discussed above, rural areas in Ukraine have very little opportunities in terms of employment other than in agriculture; and, hence, agricultural companies provide rural population with the main sources of income. In such a way agricultural companies have a power to affect voting behavior of their employees by threatening them with the withdrawal of their jobs.

Even though landowners currently have very weak property rights for their land, they used to be much weaker during 1990s and early 2000s. The land reform

that started in 1991 was supposed to divide agricultural land among former members of soviet *kolhozes* and create a proper institutional framework for the development of the land market. The land is now divided, however, the proper institutions are still absent. At the beginning of 2006 only 80% of landowners had state certificates that provided a right to their holders to exercise property rights for their land plots (State Agency of Land Resources of Ukraine, 2012b). According to a research conducted by de Janvry et al. (2011), land reforms that grant property rights for land are only profitable to pro-market oriented right-wing parties. Authors analyzed voting behavior of Mexicans before and after they were granted complete property rights for land and concluded that after the reform they tend to vote more for the pro-market parties rather than for the pro-state parties. This may be due to the fact that having more secure property rights for land, landowners are more inclined to vote for those parties that can provide policies more favourable for protection and productive use of assets (such as land plots). Hence, there is a close relationship between the land market reforms and political outcomes. This

chapter tests the hypothesis whether the gain of property rights indeed leads to an increase of pro-market political orientation of landowners, and whether the change of ruling parties in the Parliament is affected by the implementation of the land titling programme.

Results of the chapter suggest that agricultural companies, located in districts that support more the parties that form the Parliamentary Majority after the elections, tend to pay lower rental rates for land after the elections. Also, the implementation of the land titling programme was mostly beneficial for the centrist parties rather than the right-wing parties, as the former were the ones gaining more votes with the implementation of the reform.

This chapter relates to several strands of literature. Firstly, it explores issues connected with the effect of land reform on the strengthening of the property rights and efficient resource allocation (Canto, 1985; Grossman, 1994; Biswanger et al., 1995; Mookherjee, 1997; Banerjee, et al., 2002, etc). There are many papers that explore the impact of land reforms on productivity and economic performance of agents. However, there has been not much research done on the shifts of

political preferences as a result of the land reforms. This chapter empirically illustrates the case of Ukrainian land reform when political choices of the electorate are affected by the improvement of property rights for land.

Secondly, the chapter relates to a growing body of research about the connection between the land reforms, economic development, and policy-making choices. In her recent papers Melissa Dell (2010, 2012) finds evidence of the high degree of correlation between land reforms undertaken in the past and the economic development present today in Latin American countries. In Mexico and Peru the agrarian reform that placed some major restrictions on markets led to formation of clientelistic relationships. Large landowners had a huge power over the policy-makers and lobbied the public goods provision in regions where their landholdings were situated. Moreover, historical evidence suggests that there are many instances when the revolutionary regimes use land reforms in order to gain political support of the landowners/landless classes (Tuma, 1965; Warriner, 1969; and King, 1977).

Thirdly, the chapter explores such issues as

clientelism, political corruption, and vote buying. There are many evidences of political corruption and vote buying behavior in developing countries (Snyder, 1991; Wantchekon, 2003; Keefer, 2007) that tend to be more profound in an environment with high inequality and low productivity (Robinson and Verdier, 2003). Baland and Robinson (2012, 2008) investigated the impact of vote buying and political control on factor markets. They showed that the introduction of a secret ballot in Chile led not only to a change in a voting behavior, but also to a decrease of price of land. This chapter contributes to an existing literature by investigating not only economic implications of vote buying and political control in the absence of secure property rights and land market inefficiencies, but also explores a very specific mechanism that allows for an existence of such market failures.

Finally, the chapter explores issues connected with the unequal distribution of resources due to political reasons and politically motivated transfers. Main theories behind these topics consider transfers from politicians to either core (for example, Cox and McCubbins, 1986) or swing voters (Lindbeck and

Weibull, 1987). Evidences of politically motivates transfers are found in many countries, for example, the US (Grossman, 1994; Levitt and Snyder, 1995; Berry et al., 2010), Spain (Solle-Olle and Sorribas-Navarro, 2008), India (Arulampalam et al., 2009) etc. Most of these papers, however, use data for federal states and find evidences of politically motivated transfers from the central Government to regional Governments. The present research, on the other hand, considers, first of all, a unitarian state and, second of all, studies politically motivated benefits to certain economic classes of the society (i. e. agricultural companies) rather than direct transfers.

The chapter is organized in the following way. The next section gives an overview of the political system in Ukraine and describes the main parties in the Parliament. Then the history of the land reform is outlined. The model specification and estimation strategy is discussed in the section following the description of data used in the research. Finally, results are analyzed and conclusions are made.

1.2. An overview of political system in Ukraine

Political system of Ukraine is characterized by high instability and a constantly changing electoral legislation. Since 1991, when Ukraine became independent, there were five Parliamentary elections and all of them were regulated by different laws. Even the political system of the country was changed several times. According to the 1996 Constitution, Ukraine was the presidential-parliamentary republic where the President was the head of the state and could appoint all members of the Cabinet of Ministers himself, except for the Prime-Minister. The Prime-Minister was to be appointed with consent of the Parliamentary majority. However, in December 2004 during the Orange Revolution the political system of Ukraine was changed to parliamentary-presidential. This was a compromise between the two competing political powers that allowed the Orange leaders5 to have Presidential re-elections in exchange for basically giving up the

5 Leaders of the Orange Revolution were Viktor Yushchenko (political party 'Our Ukraine' (ukrainian – 'Nasha Ukraina')), Yuliya Tymoshenko (political party BYUT ('Bloc of Yuliya Tymoshenko')) etc.

majority of the Presidential powers to the Parliament. At the time, the majority in the Parliament was formed by the parties close to ruling elites and especially to the former President, Leonid Kuchma, who was actively supporting Viktor Yanukovych and his 2004 Presidential campaign. The 2004 political compromise meant that from that time on the President was not the head of executive power in the country, the Prime-Minister was. The Cabinet of Ministers was to be elected by the Parliament. Hence, even though Yanukovych lost 2004 Presidential elections, he and his entourage could easily rule the country as before under the new political system. The latter was in place until 2010, when the Constitutional Court of Ukraine dismissed the 2004 amendments to the Constitution and ruled in favor of the old system. The country went back to being presidential-parliamentary republic as before. Incidentally, 2010 was the year when Yanukovych became the President of Ukraine.

These examples of constantly changing legislation show how easy it is to manipulate political powers in Ukraine. The power can migrate back and force from one authority to another, depending on who is at the

wheels of state. This chapter analyzes three rounds of Parliamentary elections in Ukraine where the 2002 elections were held in the presidential-parliamentary republic, while 2006 and 2007 (extraordinary) elections were held in the parliamentary-presidential republic. Hence, the delegates elected to the Parliament in 2006 and 2007 gained even more power than their predecessors. This generated stronger incentives for political parties to get into the Parliament as they had much more to gain if they won in 2006 and 2007.

It is not only the political system that has been constantly changing in Ukraine, almost every new round of elections was held in accordance with a different election law. Parliamentary elections of 2002 were held under a mixed voting system, when 225 delegates were elected by proportional representation in a nation-wide district based on the electoral lists of political parties, and the other 225 delegates were elected according to the plurality rule. According to the system of proportional representation, parliamentary mandates are divided between the parties proportional to the number of votes they get in a nation-wide district. If a party gets, for example, 35 mandates, then the

delegates become first 35 people from its electoral list. As for the plurality rule, the country is divided into 225 single-seat electoral districts and the winner in each of them becomes a delegate in the Parliament.

The 2006 and 2007 elections were held, however, based on a different voting system. The plurality rule was dropped from the system and all 450 parliamentary delegates were elected in accordance with the system of proportional representation in a nation-wide district based on the electoral lists of political parties. The threshold to get into the Parliament was decreased from 4% in 2002 to only 3% in 2006/07. These changes were widely criticized, especially the decrease of the passing point to 3%. Also, the system of proportional representation is less personified; so that voters give their votes not really to actual people, but to political parties that decide the order with which each candidate appears on their electoral lists.

Changes in political and voting systems of Ukraine were among the main reasons behind the political crisis of 2006-2007 when the Parliament failed to form a sustainable coalition Government. During August 2006 – December 2007, the situation when the President

(Viktor Yushchenko) and the Prime-Minister (Viktor Yanukovych) were not only from different political camps, but also had diametrically different political views caused major distress in the society. The President, not supported by the Prime-Minister and the Parliamentary majority, could not fully exercise his authority and had to fight for every law. The fact that neither the Constitution, nor existing legislation could resolve the conflict between the state powers, made this situation even worse. The crisis reached its peak in spring 2007 when the President announced the dissolution of the Parliament and extraordinary Parliamentary elections to be held in late September 2007. This political maneuver failed to cure the heart of the problem, the most what it did was to postpone it. The distribution of votes for the parties was only slightly different second time around in 2007, and 4 out of 5 parties that have got to the Parliament in 2006 were there also in 2007.

Table 1.1 shows the distribution of mandates in the Parliament after 2002, 2006, and 2007 elections. The majority of parties in Ukrainian Parliament are left-central or left. There is only one party that declares to

have right/right-central views. The Parliament is elected for the period of 4 years. The last round of elections was at the end of October, 2012. Pre-2002 rounds of elections are not considered in this research due to the lack of data on land reform and other land-related variables. Data section provides more information regarding this issue.

After the elections parties that have got to the Parliament start to carry on negotiations about the composition of the Parliamentary majority. It is formed to pass different laws, as the law is considered to be passed only if at least 226 delegates (50%+1 of mandates) vote for its adoption. As seen in Table 1.1, there was no such case when the party would get 50% of mandates to the Parliament based on the election results. Hence, parties have to unite and form a political coalition to make Parliamentary machine working properly.

During 2002-2006 the majority was formed with only two parties: ZaYedU and SDPUo. Both of them represented big business and ruling elites. De-facto leader of ZaYedU was Leonid Kuchma, the President of Ukraine at the time, that gave the party an unlimited

access to administrative resources of the country. In Ukrainian context, administrative resources signify an (illegal) utilization of official resources in favour of a certain political camp. According to Dmytrycheva et al. (2002), ZaYedU having in its electoral list representatives of regional political powers and big business started to use administrative resources of the former and financial resources of the latter to ensure its victory in the elections. Authors provided evidences that many regional leaders were intimidated and given instructions to ensure ZaYedU won in each of the regions; otherwise, that would have given grounds for immediate resignations of the regional governors and heads of district administrations. They were obliged to carry on propaganda for the party among different strata of the society and especially among the heads of collective farms and, hence, rural population engaged in agricultural activity. Moreover, a part of ZaYedU was formed with Agrarian Party of Ukraine that had wide interests in agriculture and had an impact on country life and farming. There could have been a sort of clientelistic relationship between the party and its voters.

As for the SDPUo that stands for a social-democratic party of Ukraine (united), this party has also had close relationships with the former President Leonid Kuchma. The leader of the party, Viktor Medvedchuk, was the head of Kuchma's Presidential administration and, as rumored, was responsible for manipulating the media's coverage of political events in favour of pro-Kuchma's powers. Involvement of SDPUo leadership in falsification of 2004 Presidential elections and also falsification of local elections in Mukacheve[6] was widely discussed in press. After these events, political opponents of the party accused it of totalitarianism and fascistic ideology. The party also took part in 2006 Parliamentary elections, however, did not pass the 3% voting barrier and did not get into the Parliament.

After the 2006 elections the Parliamentary majority was formed with BYUT, NUNS, and SPU. However, this coalition was not around for a long time, as it fell apart after just a month of being formed. Disagreements

[6] Mukacheve is a city in Western Ukraine. Massive falsifications were recorded during the mayor elections in spring 2004. According to falsified results the next mayor of the city should have been a member of SDPUo. However, the election results were declared null and void by the Court that has also sentenced several officials involved in falsifications.

between the leaders of the blocs destroyed it. Viktor Yushchenko, the leader of NUNS and the President of Ukraine at that time, and Yuliya Tymoshenko, the leader of BYUT, could not find the way to work their political differences through. This led to the creation of a new coalition in July 2006 between PR, CPU, and SPU. The leader of PR, Viktor Yanukovych, became the Prime-Minister of Ukraine as a result.

The Party of Regions took part in 2002 elections as a part of ZaYedU bloc. In 2004 the leader of the party, Viktor Yanukovych, was a candidate in the Presidential elections of 2004. The party had close connections to Kuchma and his administration and represented big business predominantly from eastern regions of Ukraine. Yanukovych and his camp were accused of falsifications of 2004 Presidential elections that started the Orange Revolution in Ukraine. Evidences of massive political abuse and control were documented by the media and independent experts. The same vote-buying scheme used for 2002 Parliamentary elections was also used for 2004 Presidential elections.

After the 2007 extraordinary elections the Parliamentary coalition was formed by BYUT, NUNS,

and BL. The latter joined only at the end of 2008. The coalition existed until the beginning of 2010 - up until after the 2010 Presidential elections when Viktor Yanukovych became the new President. The new Parliamentary coalition formed in March 2010 consisted of pro-Yanukovych PR, CPU, and BL.

In Ukraine elections to the regional and district councils are held based on the proportional system (the same one that is active for the Parliamentary elections), and this has led to regional and district councils being formed with the same parties that have got to the Parliament. Hence, elections outcomes of the national Parliament are almost the exact match for the elections outcomes of the regional and district councils.

Falsification of elections became a tradition in Ukraine and developed into a very successful industry. In her interview to NBN on April 11, 2012, a vice-chairwoman of the Central Elections Committee of Ukraine, Zhanna Usenko-Chorna, says that Ukraine is the world leader in falsifications of elections results. Moreover, the former chair of the Central Elections Committee, Mykhaylo Ryabets, in his speech for "Glavkom" on September 5, 2012, said that every

election that was held in Ukraine since independence had falsifications going on. Instances of vote buying and abusive political control in rural areas are discussed by Yuriy Bublyk, a head of a village council in Poltava region, in his interview for "Newspaper po-ukrainsky" on June 15, 2012. He says that there is a constant pressure on the heads of village and district councils over the land plots. One of the most common cases of abuse is when a businessman[7] with connections to the powerful politicians comes to a village council and wants to get some land. If he is refused, then the head of the council could be faced with fake criminal charges and constant illegitimate inspections from the tax office. If a businessman's request is satisfied, however, the head of the council can count on a generous reward. Also Yuriy Bublyk says that the pressure on the council becomes even more profound around the elections when the head of the council is given the responsibility to ensure a certain number of votes in his/her village. The pressure comes from the powerful party: post-2007 Parliamentary elections and especially post-2010

[7] This can also refer to higher standing officials.

Presidential elections it would be pro-Yanukovych parties like PR. As for the pre-2006 period, it would be pro-Kuchma and pro-Yanukovych parties like ZaYedU, PR, SDPUo etc.

To sum up, political environment in Ukraine is very unstable. Political leadership of the country has many disagreements that stand on the way of forming a strong and united coalition. Instances of massive falsifications during the elections, abusive political control, and vote-buying bahaviour are not uncommon. On the contrary, they start being a part of everyday life of Ukrainian society, especially rural population that can be easily manipulated. Big business sponsors political campaigns of the parties in order to get favours later on, when the party is in power. Ukrainian businessmen tend to go into the politics to either protect their businesses, or enlarge them. Many agricultural companies have their representatives and lobbyists in the Parliament. Clientelism is wide spread and developed in all spheres of life including agriculture and land market.

1.3. History of the Land Reform in Ukraine

After the dissolution of the Soviet Union and proclamation of independence of Ukraine in 1991, the need for a land reform and a legal definition of property rights for land emerged. During the Soviet times, the only owner of the land was the State and property rights did not exist. So the Government of newly independent Ukraine decided[8] to start the land reform by giving freedom to farms and collective enterprises to manage their activities independently from the state. Also, people that during the Soviet times worked in kolhozes[9] were granted the collective ownership rights for the land and property of former kolhozes. This basically meant that a particular person could not exercise the property rights unilaterally, it could have only been done collectively with the consent of other members of a collective enterprise. So during its initial stage the Land Reform was basically a replication of a soviet style of reformation where everyone, at least

[8] See the Resolution of the Parliament of Ukraine "On the Land Reform" (dated March 15th, 1991) and the Law of Ukraine "On the Forms of Land Tenure" (dated January 30th,1992).
[9] Kolhoz is a Soviet collective farm.

nominally, was supposed to be equal and get the same share of land.

During 1994-1995 the process of transferring the land into the private property sped up a bit10. The land of collective enterprises was formally divided between their members equally and they were given the State Certificate. The latter gave a right to its holder to exercise the property rights for a piece of land; however, the Certificate could only be used upon withdrawal from a collective enterprise. In practice, the decision whether to allow a member to exit from the collective enterprise lied upon the head of an enterprise and very often people were denied their requests to leave the enterprise and, hence, exercise their property rights (Ukrainian Parliament Commissioner for Human Rights, 2004). Also, boundaries of the parcels were not established at that time, and even if a person could exit from the collective enterprise, it was very difficult, if not impossible, to actually get a piece of land. In order to

10 See Presidential Decree "On Urgent Measures to Accelerate the Land Reform in Agricultural Production" (dated November 10th, 1994) and "On the Procedure for Dividing the Land Parcels Collectively Owned by Agricultural Enterprises and Organizations" (dated August 8th, 1995).

resolve all the problems with the exit from the collective enterprise, the President of Ukraine issued a Decree on December 3rd, 1999, "On Urgent Measures to Accelerate Reforms in Agriculture" where he gave the right to members of collective enterprises to exit them without a consent of majority of other members and keep their property rights for land after the exit.

The Certificate gave the right to its holder to rent the land in possession. However, a standard land leasing agreement drafted by the state-level administrative units did not (and still do not) contain any information about the quality of leased land parcel, responsibility of a lessee as to the rational and environmentally-friendly use of the land, its preservation, and restitution to a lessor in an original state. Therefore, lessees do not undertake any responsibility to preserve and maintain the leased land during the period of tenancy. Lessors, on the other hand, living mostly in rural areas and not having enough information and means to secure their property rights are usually left with exhausted land after the expiration of the rental period.

Urged by many market imperfections and improper functioning institutions that failed to regulate the land

market, the Parliament of Ukraine adopted the Land Code of Ukraine that became effective on January 1st, 2002. The Land Code establishes that the property rights for a land parcel are given by the State Act (issued in exchange of the old Certificates) that certifies the right for the land use, private property right or leasing right of its holder. To be valid the Act should be registered and specify the size and borders of the parcel in nature. Those legal and natural persons that acquired property rights for a land parcel before January 1st, 2001 were supposed to go through the land registration formalities again.

At this point, security of the property rights for land for holders of the State Acts increased a lot in comparison with the situation before the ratification of the Land Code of Ukraine. Now private property rights for land were protected by the Code and land owners could make use of their land parcels in a way they wanted that was not prohibited by the law, and did not need any consent from the third parties (i.e. collective enterprises). However, another problem emerged: people started speculating with the membership lists of the collective enterprises. Council officials could be

bribed to put a name of a person not entitled for a land plot on the list and with that give him/her this right for land. Also, the new Land Code failed to regulate market transactions with the old Certificates that were to be exchanged for the new Acts. So the Parliament established the moratorium on land sales that prohibited any market transaction with agricultural land, except for renting. The moratorium is still active and is supposed to be lifted on January 1, 2016.

As a consequence of the moratorium on land sales, land owners are prevented from using their land parcels to get credit. Banks cannot provide mortgages using land parcels, because a guarantee as in case of the bad loan, financial institutions will not be able to get ownership rights for a pledged parcel. Hence, land owners cannot fully exercise their property rights for land and lack investment opportunities to develop agricultural production on their land.

As for the registration of the State Acts, the crucial role here is supposed to be played by the State Land Cadastre which is not yet properly functioning in Ukraine. According to the report of Roth and Valletta (2006), data that are required to secure property rights

for land of the State Acts holders are gathered in a piecemeal manner from different sources. This causes massive violations of the property rights of land owners (according to the Commissioner for Human Rights, 2004, 2008, 2010), as their property rights are not formally recognized by the state[11].

Figure 1.1 shows the number of State Acts issued each year during the last decade. According to it the majority of Acts were issued by 2007. Hence, one can divide the period of land reformation in Ukraine into two intervals: pre-2007 and post-2007 when majority of landowners are granted the private property rights for land. This allows for formal testing of the implementation of the reform.

On August 19th, 2008 the President of Ukraine issued a Decree "On Urgent Measures for Protection of Owners of Land Parcels" that established a minimum rental rate at the level of 3% of the nominal value of land. However, the level of 3% is only a recommendation and the Decree cannot be treated as such that establishes a

[11] Absence of the State Land Cadastre means, legally speaking, that the state does not recognize ownership rights for land as it does not keep track of the State Acts in a unified manner (Court of Auditors of Ukraine, 2010).

binding obligation for a lessee to pay the rent not less than the level specified. Therefore, the common practice nowadays is to underpay for rented land that causes land owners to get little return on their assets while big sharks of agricultural business prosper.

To sum up, property rights for agricultural land are not fully secured in Ukraine. In order to complete the Land Reform, the Government has to undertake some measures that would allow land owners to fully exercise their property rights. There is a need for the adoption of the Law "On the Land Market" that would properly regulate rental (or market) relationships between a lessor and a lessee, and that would establish a set of responsibilities and obligations to preserve the land and use environmentally-friendly practices in agricultural production.

1.4. Data

There are two main datasets used in the research: land market and elections outcomes datasets. The land market and farming variables are taken from the

original 10 years panel dataset called "50-sg" provided by the State Statistics Service of Ukraine (SSSU). The dataset contains information on production, financials, land usage, and tenure of Ukrainian agricultural enterprises and farms that submit their annual reports to the SSSU on a mandatory basis each year. On average there are 9 000 agricultural companies (out of approximately 16 000 active in Ukraine) in the dataset for each year starting from 2001 and ending with 2010. The dataset is an unbalanced panel as companies tend to start and end their businesses at different points in time. The dataset excludes most of the small farms that have different rules of reporting their economic and financial statistics to SSSU. So "50-sg" includes companies that on average have 1 000 ha of land and 50 employees. This dataset is suitable for the purposes of the research as only medium or big companies should have enough market and bargaining power to be able to establish clientelistic relationships with officials, as well as be able to impact the voting behavior of their employees.

The data on the land reform progress is collected partly from the web-page of the State Agency of Land

Resources of Ukraine12 and is partly provided by the Agency itself. It contains information on the amount of State Acts issued and exchanged for the State Certificates in each region during 2002-2006. See Figure 1.1 for a visual representation.

Elections outcomes data is provided by the Central Elections Committee of Ukraine and can be freely accessed on their web-page. The data contains the number of votes received by each party that takes part in the Parliamentary elections in electoral districts. During 2001-2010 (the years for which land data is available) there were three rounds of Parliamentary elections in Ukraine: 2002, 2006, and 2007 extraordinary elections. This chapter used only data on the voting outcomes of the parties that actually got into the Parliament by surpassing the passing point of 4% of total votes in 2002 and 3% in 2006 and 2007. That is because it is assumed that only parties in power can reward their voters in case of clientelistic relationships between them. Voting outcomes data is available for electoral districts that can consist of several territorial

12 http://www.dazru.gov.ua/terra/control/uk/index

districts13. Because the land data is a territorial district level data, the data on elections is matched with the data on territorial districts. So in cases where several territorial districts are a part of one electoral district, those territorial districts have the same voting information. Also, 2002 elections were held based on the mixed voting system where 50% of delegates were elected based on the plurality rule and the other 50% - based on the proportional representation system. Due to the fact that the plurality rule allowed for unaffiliated candidates to become delegates and most of the people elected based on this rule were actually unaffiliated, only voting outcomes of the proportional representation system were considered. In any case, it is assumed that voting outcomes of the proportional representation system are a good proxy for the voting outcomes of the plurality rule: on average, the percentage of delegates elected based on the plurality rule that after being elected to the Parliament have joined a specific party, coincides with the percentage of votes this party have

13 The territory of Ukraine is divided into 24 regions and Autonomous Republic of Crimea (ARC), and each region (including ARC) is, in turn, divided into districts. The smallest unit of analysis in this paper is a territorial district.

got based on proportional representation system.

Table 1.A in Appendix 1.9 contains a detailed summary statistics of the explanatory and dependent variables used in the research.

1.5. Methodology

In order to test for the presence of clientelistic relationship between the political parties and agricultural companies, the following model is estimated:

$$\mathrm{Re}nt_{itd} = \alpha + \beta V_{pTd} + \gamma C_{itd} + \nu_r + \sigma_t + \varepsilon_{itd}, \qquad (1)$$

$i = 1,...,N$
$t = 2001,...,2010$
$T = 2002,2006,2007$
$d = 1,...,D$
$r = 1,...,R$

$\mathrm{Re}nt_{itd}$ is a rent for leased land paid by a company i at time t located in district d. V_{pTd} is voting outcomes for a party p at elections time T in district d. C_{itd} is a vector

of controls for a company *i* at time *t* located in district *d*. C_{itd} includes the following variables: natural logarithm of the number of employees, state support (i.e. subsidies and donations from the Government that are given based on the last-period earnings of an enterprise), and political loyalty variables. ν_r are regional fixed effects, σ_t are time fixed effects.

Several least-squares dummy variables (LSDV) models are estimated based on the equation (1):

$$\begin{aligned} &\mathrm{Re}nt_{itd} = \alpha + \beta V_{pd2002} + \gamma C_{itd} + \nu_r + \sigma_t + \varepsilon_{itd}, \\ &t = 2002,...,2005 \\ &\mathrm{Re}nt_{itd} = \alpha + \beta V_{pd2006} + \gamma C_{itd} + \nu_r + \sigma_t + \varepsilon_{itd}, \\ &t = 2006,...,2007 \\ &\mathrm{Re}nt_{itd} = \alpha + \beta V_{pd2007} + \gamma C_{itd} + \nu_r + \sigma_t + \varepsilon_{itd}, \\ &t = 2007,...,2010 \end{aligned} \quad (2)$$

Rent payments paid by the companies during 2002-2005 are regressed on the percentage of votes received by each party elected to the Parliament in 2002. The

parties that got the power in 2002 stayed in the Parliament until the next elections in March 2006. The same logic applies to 2006 and 2007 elections held in March 2006 and the end of September 2007, respectively.

V_{pd2002} is the percentage of votes received by a party p in district d during the 2002 Parliamentary elections. It contains voting outcomes of the following parties: NU, CPU, ZaYedU, BYUT, SPU, and SDPUo. V_{pd2006} is the percentage of votes received by a party p in district d during the 2006 Parliamentary elections. It contains voting outcomes of the following parties: NUNS, CPU, PR, BYUT, and SPU. Finally, V_{pd2007} is the percentage of votes received by a party p in district d during the 2007 Parliamentary elections. It contains voting outcomes of the following parties: NUNS, CPU, PR, BYUT, and BL (refer to Table 1.1 for more details about the parties). V_{pd2002},V_{pd2006}, and V_{pd2007} are time-invariant, but vary across districts and parties.

Variables natural logarithm of the *Number of Employees*, *State Support*, and *Political Loyalty* are used to control for company specific trends and

regional/political trends. Natural logarithm of the *Number of Employees* is widely used in the corporate finance literature as a proxy for the firm size and bargaining power of a company (Lucas, 1978; Shalit and Sankar, 1977; Kumar et al., 1999; Claessens and Laeven, 2006). *State Support* is the amount of state subsidies received by the company in a given year. The vector of *Political Loyalty* variables contain: ZaYedU-loyal, *BYUT-loyal*, *PR-loyal*, *NU-loyal*, and *NUNS-loyal* variables. Each of them is a dummy taking value of 1 if an oligarch that supports a certain political party/power has assets located in a given city/town/district; and 0 otherwise. For example, if Rinat Akhmetov who actively supports PR has assets located in Donetsk, then the value of *PR-loyal* variable for Donetsk is 1. These variables are all time and location variant. *ZaYedU-loyal* and *PR-loyal* account for assets of oligarchs loyal to ZaYedU and PR, namely Rinat Akhmetov, Viktor Pinchuk, and Serhiy Tihipko. *ZaYedU-loyal* is used for 2002-elections only and PR-loyal is used for 2006 and 2007 elections. *ZaYedU-loyal* and *PR-loyal* accounted for assets of the same oligarchs, because oligarchs that supported ZaYedU in 2002, were also supporting PR during 2006-

2010. *NU-loyal* and *NUNS-loyal* account for assets of Poroshenko and Serhiy Taruta (ISD) loyal to NU/NUNS and its leader Viktor Yushchenko. *NU-loyal* was used for 2002 elections only, while *NUNS-loyal* was used for 2006 and 2007 elections. *BYUT-loyal* accounts for assets of Zhevago, Verevs'kyy, and Haiduk (ISD) that have been supporting Tymoshenko and her BYUT since 2002. Only oligarchs that openly express (i.e. in media, so that their political loyalty has grounds and proofs) their support for a certain political power are used in order to construct the *Political Loyalty* variables. Data on oligarchs and location of their assets was taken from the Forbes Ukraine database[14] and from the websites of the corresponding oligarchs. *Political Loyalty* variables are proxies for a closeness of a certain party to certain regions/districts. So that if an oligarch who supports a certain party has financial interests in a particular region, then one can assume that party would also be interested in investing in that region.

Finally, in order to test the relationship between the voting behaviour and implementation of the land

[14] http://forbes.ua/ratings/1

reform, the following model is estimated with region specific and time fixed effects and robust standard errors:

$$V_{prt} = \alpha + \beta \,\mathrm{Re}\, form_{rt} + \nu_r + \sigma_t + \varepsilon_{prt} \qquad (3)$$

$\mathrm{Re}\, form_{rt}$ is the share of State Acts issued or exchanged for State Certificates in region *r* at time *t*. V_{prt} is a vector containing the share of votes received by a party *p* in region *r* at time *t*. The land reform data on a regional level is available only for 2002-2006. Hence, the two-year panel data is constructed merging elections data for 2002 and 2006 with the land reform data. Only parties that have got to the Parliament in 2002 as well as in 2006 are used for testing this model (to take advantage of having the panel structure of the data). These are NUNS, BYUT, CPU, SPU, and PR. Because PR participated in 2002 elections as a part of ZaYedU bloc, the data for this party consists of the share of votes received by ZaYedU in 2002 and the share of votes received by PR itself in 2006.

Although panel structure of the data used in this

chapter copes with time-invariant unobservable confounding factors that possibly affect rental rates or political preferences of the voters, there may be other time-variant unobservables that can be a source of the omitted variable bias in our estimation. In order to reduce this bias, different control variables are included; however, this problem is hard to be tackled with available data.

1.6. Estimation results

Estimation of the impact of Parliamentary elections on the rental rates for agricultural land is performed on a sample of more than 16 000 agricultural companies located throughout Ukraine. Estimation is done with the least squares dummy variable OLS regressions with region specific and time fixed effects. Region specific fixed effects absorb effects particular to each region, while time fixed effects are added to control for unexpected variation or special events that could affect the rental rates.

Table 1.2 presents regression results for the first

equation of model (2) described in the methodology section. NU_{2002}, CPU_{2002}, $ZaYedU_{2002}$, $BYUT_{2002}$, SPU_{2002}, $SDPUo_{2002}$ are 2002 elections results for each particular party. Panels IV-IX present the regression results for each party, while panel I contains results of the model where all the elections results for all the parties are explanatory variables simultaneously in the same regression. Panel II presents results of the estimation where the main independent variables are those for the parties that have formed the Majority in the Parliament after the 2002 elections. Finally, panel III contains results of the estimation where the main independent variables are elections outcomes for those parties that have been in opposition after the elections. Different specifications of the model displayed in panels I-IX are presented in order to test whether indeed parties that form the Parliamentary Majority have significantly more power to reward their voters after the elections, when compared to parties that form the Parliamentary Opposition.

Dependent variable, *Rent*, as well as control variables, natural logarithm of the *Number of Employees*, *State Support* and *Political Loyalty*, are firm-level variables that

change over firms and over time. NU_{2002}, CPU_{2002}, $ZaYedU_{2002}$, $BYUT_{2002}$, SPU_{2002}, $SDPUo_{2002}$ change over districts, but not over time. So companies located in the same districts have the same values of elections results. 2002 elections results were matched with other variables that changed over 2002-2005, because there were new Parliamentary elections in March 2006. So that the effect of 2002 elections is expected to last over the 4 years of the 2002 Parliament seat.

According to Panel I of Table 1.2, rents paid in districts with higher support for NU, BYUT, SPU and SDPUo tend to be significantly higher after the elections. However, rent is significantly lower in districts where oligarchs loyal to ZaYedU have their assets located. At the same time rental rates are significantly higher in districts where assets of BUYT-loyal oligarchs are located. Once we separate elections variables for the parties forming the Majority and the Opposition in Panel II and III, results change a little bit. This is probably because results in Panel I may be majorly driven by multicolinearity stemming from the correlation between the main independent variables (i.e. elections outcomes variables). According to Panels II

and III, post elections rents are significantly lower in district that express higher support for the parties forming the Parliamentary Majority; while rents in district that support parties from the opposition tend to be significantly higher.

According to results shown in Panels IV-IX, rental rates paid for land by companies located in districts with higher electoral support for CPU_{2002}, $ZaYedU_{2002}$, and $SDPUo_{2002}$ tend to be significantly lower. So for every 1% of votes in a district, companies pay from 59 to 177 UAH[15] less in rent for each hectare of land that they rent. During 2002-2005 an average company in our sample leased 1700 ha of land. Hence, a discount of 59 (177) UAH on each hectare per year generates a total saving of 100 300 (300 900) UAH per year. Usually land leasing agreements in Ukraine are concluded for 5-10 years. This means that in total, an average company could have saved from 501 500 to 3 009 000 UAH. However, if one considers not an average company, but a big agricultural holding that rents 50 000 ha of land and more, than savings amount to 2 950 000 UAH per

[15] 1 UAH ~ 0.1 EUR

year and to 14 750 000 UAH over the course of 5 years. It is reasonable to assume that as the amount of land holdings a company cultivates increases, it has more financial incentives to engage into clientelistic relations with political parties.

Coefficients on CPU_{2002}, $ZaYedU_{2002}$ and $SDPUo_{2002}$ are negative (panels IV-IX). Incidentally, ZaYedU and SDPUo formed the Parliamentary majority after the 2002 elections. They were often supported by the Communist Party (CPU) when there were important laws to vote for that required more votes from other parties. Hence, results presented in Table 1.2 are consistent with a priory expectations to find systematically lower rental rates in districts that support parties forming the Parliamentary majority after the elections. As discussed above, parties that form the Majority can also affect the composition of the Cabinet of Ministers (Ministerial seats are usually given to delegates from the parties forming the Majority) and have larger spectrum of power than opposition parties.

Positive coefficient on SPU_{2002}, NU_{2002}, and $BYUT_{2002}$ variables in panels IV-IX suggest that companies tend to pay higher rental rates for land in districts that have

shown higher electoral support to these parties during 2002 elections. Positive coefficient on SPU_{2002}, NU_{2002}, and $BYUT_{2002}$ can be a reflection of a pro-landowner policies and actions implemented by the parties in districts that exhibit higher electoral support. Incidentally, these were the parties that were in the opposition during the 2002-2005.

The coefficient on the *State Support* variable is negative and almost constant throughout panels I-VI. However, its effect is very small and is essentially zero. The coefficient of *Ln_Employees*, on the other hand, is positive and significant throughout the panels, and this result means that when the political aspect is taken out, larger companies with more market power tend to pay higher rental rates for land. This is probably because they have more financial resources to offer landowners for the best pieces of land.

As for the *Political Loyalty* variables, only *ZaYedU-loyal* variable is constantly negative and significant throughout the panels. This result suggests that districts where ZaYedU-loyal oligarchs locate their assets tend to be rewarded with systematically lower rental rates for land after the elections. *BYUT-loyal* and *NU-loyal*

variables are either not significant at all (*NU-loyal*) or positive and marginally significant (*BYUT-loyal*). This suggests that these parties do not reward districts with oligarchic assets after the elections.

In general, results of Table 1.2 are in line with our hypothesis and confirm a priory expectations to find an evidence of clientelistic relationships between political parties and agricultural companies. Companies tend to pay lower rental rates for land in districts that show greater electoral support to parties forming the Majority in the Parliament after the 2002 elections.

Results for the 2006 Parliamentary elections are presented in Table 1.3. Dependent variable Rent and other control variables are again company specific and change over time. PR_{2006}, $BYUT_{2006}$, $NUNS_{2006}$, SPU_{2006}, and CPU_{2006} are 2006 elections results that change over districts, but not over time. 2006 elections took place in March 2006 and the next elections were held at the end of September 2007 with the new Parliament taking over in December 2007. Hence, parties elected in 2006 continued to have impact on political and economic aspects of life of Ukrainians till the end of 2007.

Panel I of Table 1.3 shows that rental rates are

significantly lower in districts that exhibit higher electoral support for CPU, while the rent is significantly higher in districts that support BYUT an SPU. These results resemble closely the results presented in panels II and III, where political outcomes of parties forming the Majority and the Opposition in the Parliament are regressed separately.

According to panels IV-VIII of Table 1.3, agricultural companies paid significantly lower rental rates for land in districts that showed higher support for PR and CPU. Incidentally, these were the two parties forming the Majority Coalition in the Parliament starting from the mid-summer 2006. By engaging in clientelistic relations with PR, a company that cultivated 1 700 ha of land could have saved up to 154 700 UAH per year for each additional 1% of votes during the elections; while for CPU supporters, this number could have increased up to 783 700 UAH per year.

Companies that are located in districts that support BYUT and SPU tend to pay significantly higher rental rates, however. One of the possible explanations of the positive coefficients on $BYUT_{2006}$ and SPU_{2006} is that these parties try to make their voters (landowners)

happy by improving conditions of their land-leasing contracts. SPU and BYUT declare themselves to be left and central-left parties, correspondingly, and they tend to put special care into their electorate in the rural areas. Mostly, these are landowners.

The coefficient on $NUNS_{2006}$ is insignificant. It seems like this party does not have or does not exercise any political control over the land market players in Ukraine.

Coefficients of the control variables show similar patterns to the 2002 elections results presented in Table 1.2. The effect of *State Support* on rental rates tends to be close to zero, while *Ln_Employees* is positive and significant again. Districts where BYUT-loyal oligarchic assets are located tend to get higher rental rates, while districts with PR-loyal oligarchic assets tend to have lower rental rates.

Results for 2006-2007 confirm findings presented in Table 1.2: companies located in districts that support political parties that later on form the Parliamentary Majority, tend to pay less rent for the land. Hence, there is a systematic evidence of clientelistic relations between the parties and the companies and it seems like it

persists over time.

Table 1.4 presents the results for the final round of elections under consideration. In 2007 there were five parties that got to the Parliament, and four of them were there also after the 2006 elections. Only SPU could not get enough votes to stay in the Parliament, so that BL took it place instead. As before, PR_{2007}, $BYUT_{2007}$, $NUNS_{2007}$, CPU_{2007}, and BL_{2007} do not vary over time, but over districts. 2007 elections results were matched with land variables over 2008-2010, because 2007 elections took place in late September 2007 and the Parliament of the new convocation took over the seats only at the end of 2007.

All of the parties, except for BYUT and NUNS, showed a negative impact of the number of votes they received during 2007 elections on the rental rates paid by the companies located in districts with the highest electoral support. Incidentally, NUNS and BYUT were in the same political camp after the 2007 elections, while PR, CPU and occasionally BL were on the other side of political barricades. BL was a particular case, however, because this party had a very unstable political behavior during 2007-2010 and formed alliances with both

BYUT/NUNS and PR/CPU at different points in time.

According to panel II, districts with higher support for BYUT were getting higher rental rates, while districts that supported BL – lower rental rates. Results in panel II suggest that PR and CPU tend to reward their voters after the elections with lower rents as well. These results have been also confirmed in panels IV-VIII, according to which rents paid in districts that supported BUYT and NUNS were significantly higher than rents paid in districts with the strong support for PR, BL, and CPU. Incidentally, BYUT and NUNS formed the Majority Coalition in Parliament during 2008-2009, however, their coalition was never strong and they had many disagreements during the whole time of its existence. In early 2010, PR, CPU and BL formed the new Parliamentary Majority that was in power until the end of 2012.

Control variables again exhibit the same impact on the dependent variable as in Tables 1.2 and 1.3. The effect of state support is negative and significant, while the market power in terms of the number of employees has a positive impact on rental rates. As for the *Political Loyalty* variables, the results show that districts with

BYUT-loyal oligarchic assets have higher rents for land, while districts with PR-loyal oligarchic assets have significantly lower rental rates for land.

In general, results of the last round of elections under consideration support previous findings and suggest the existence of clientelistic relationships in some districts, especially those that show support for PR, CPU, and BL.

1.7. Implementation of the Land Reform

In order to test the hypothesis that after gaining more property rights for land landowners tend to support more pro-market oriented parties, model (3) is estimated with fixed effects and robust standard errors. Table 1.5 presents results of the estimation. The dataset constructed for this purpose is a two-time periods panel where political variables are elections results for 2002 and 2006. The smallest unit of analysis is a region. Because PR took part in 2002 elections as a part of ZaYedU bloc, PR variable in Table 1.5 combined elections data of ZaYedU in 2002 and PR itself in 2006.

Control variables included into the estimation are the average amount of land owned and the average rent rate in the region.

According to Table 1.5, PR and BYUT increased the number of their voters due to the implementation of the land reform in Ukraine. The shares of votes given to these parties increases with the share of State Acts issued that certify property rights for land. NUNS and CPU, on the other hand, seem to lose their voters with the implementation of the land reform. Interestingly, CPU is in the 'extreme' left of the political spectrum of Ukraine, while NUNS is in the 'extreme' right. PR and BYUT, on the other hand, are left-central parties that gravitate towards the center. Hence, it seems like with the implementation of the land reform Ukrainian voters tend to give their votes more to centrists parties. Ideology and policies of both BYUT and PR are rather similar and these parties can be thought of as pro-market oriented, especially if compared to CPU which is a communist party. Results of the estimation for the SPU seem to be insignificant, however.

One of the main reasons of the increased popularity of the centrist parties in recent years is that the ideology

of centrists is appealing to different layers of the society. Centrists mainly concentrate their attention on guarantying social stability and increasing levels of social security of the population, in this way covering interests of a very large share of the population. Parties that gravitate towards the extreme right or left of the political spectrum, however, have rather limited electorate. The popularity of CPU peaked during the 1990s and was mostly caused by inertia of some people that were used to the rule of the Communist Party during the Soviet times. In 2000s, however, the popularity of CPU was constantly decreasing. As for NUNS, the party's ideology is mainly supported by the Western regions of the country and it is not very appealing to the Eastern once. Due to geographic, historical, and cultural reasons Western Ukrainians mostly support pro-European integration and nationalistic ideas, while Eastern Ukrainians are more prone to support pro-Russian integration. By stressing the importance of the pro-European and NATO integration, NUNS may be losing potential voters in Eastern regions of the country. Centrists parties like PR and BYUT do their best to please electorate in both

Western and Eastern Ukraine, and hence, win over other parties during the elections.

Thus, results presented in Table 1.5 may be explained by the peculiarity of political spectrum in Ukraine, where pro-market oriented parties like NUNS not only have progressive economic reforms in their statutes, but also political ideology that is supported by the niche voters and is not appealing to the majority of people. Centrist parties, on the other hand, manage to attract voters from different regions and social groups, thus, ensuring their popularity and political success.

1.8. Conclusions

This chapter investigates issues connected with clientelism and vote buying behaviour in Ukraine. Parliamentary elections are often accompanied with massive falsifications, political control, and manipulations. A land market channel through which this political control is exercised is analyzed in this research. Around the elections times district/village level officials are put pressure on to ensure a certain

number of votes in their districts. In order to perform well with their task, they tend to engage into clientelistic relations with agricultural companies that have enough market power to control political behavior of their employees. In return, the companies get lower rental rates for agricultural land.

By matching land data with data on elections results, three rounds of Parliamentary elections are analyzed. Results suggest that companies located in districts with higher electoral support for parties that form the Parliamentary Majority in the period after the elections, tend to get lower rental rates for land. This effect persists over the three rounds of elections analyzed.

Finally, the chapter investigates the relationship between implementation of the land reform in the country and voting outcomes of different parties. Results suggest that centrist parties tend to gain more from the implementation of the land reform and an increase in the security of the property rights for land. These results, however, may be driven by the peculiarity of political situation in Ukraine where pro-market oriented parties fail to appeal to voters from different regions and social classes.

Table 1.1. Distribution of parliamentary mandates after the elections.

Parties	Political wing	Parliamentary elections, % mandates		
		31.03.2002*	26.03.2006	30.09.2007
Nasha Ukraina (NU) – NUNS[16]***	Right-central	24.6	14.0	14.2
Communist Party of Ukraine (CPU)	Left	14.0	3.7	5.4
Za Yedynu Ukrainu (ZaYedU)***	Left-central	40.6	-	-
Bloc of Yuliya Tymoshenko (BYUT)***	Left-central	5.1	22.3	30.7
Socialist Party of Ukraine (SPU)	Left	4.6	5.7	-
SDPUo	Left-central	6.6	-	-
Party of Regions (PR)	Left-central	-	32.1	34.4
Bloc of Lytvyn (BL)***	Left-central	-	-	4.0
Unaffiliated**		4.5	-	-

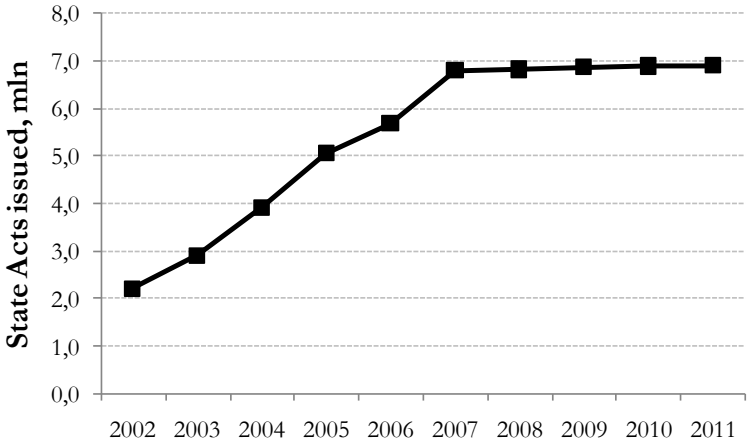
Source: Central Elections Committee of Ukraine.

Notes: * 2002 elections were held based on the mixed voting system explained above; hence, the final number of mandates each party got consisted of mandates got in a nation-wide district (proportional system), mandates got in the single-seat district (plurality rule), and mandates got from interfactional switches[17]. ** Unaffiliated members of the Parliament are those that do not belong to any of existing political factions in the Parliament and are elected based on the plurality rule. *** Political blocs formed with several parties to participate in elections.

[16] During the 2002 and 2006-07 Parliamentary elections political bloc Nasha Ukraina (NU) was formed of different number of parties. It changed its name from NU to NUNS for the 2006-07 elections. Although the name and the composition of the bloc changed slightly in 2006-07, the leadership and political vision remained the same.

[17] Parties that get seats in the Parliament form factions. Until December 2004 when interfactional switches were banned, it was a common practice for the delegates in Ukrainian Parliament to switch between the factions. Parties used to even pay members of other parties to switch in order to increase the number of seats they had. Usually interfactional switches happened before some major voting in the Parliament or when the Parliamentary majority was to be formed. Interfactional switches were again allowed in late 2010 after the Constitutional Court of Ukraine dismissed 2004 amendments to the Constitution.

Figure 1.1. Number of State Acts issued and exchanged for State Certificates.



Source: State Agency of Land Resources of Ukraine (2012a).

Table 1.2. Estimation results for years 2002-2005.

Rent 2002-2005	I	II	III	IV	V	VI	VII	VIII	IX
NU	148.955***		96.476***	90.203***					
t-stat	(4.86)		(4.52)	(5.51)					
CPU	-15.866		-47.794		-177.105***				
t-stat	(-0.41)		(-1.41)		(-7.64)				
ZaYedU	44.497	-83.208***				-59.5903***			
t-stat	(1.42)	(-3.65)				(-2.75)			
BYUT	186.945***		131.897***				126.806***		
t-stat	(4.49)		(3.86)				(4.01)		
SPU	127.023***		85.881***					87.261***	
t-stat	(4.47)		(3.73)					(4.81)	
SDPUo	244.416***	-190.886***							-124.858**
t-stat	(2.98)	(-3.31)							(-2.28)
state_support	-0.001*	-0.001	-0.0009*	-0.001*	-0.001*	-0.001	-0.001	-0.001	-0.000*
t-stat	(-1.66)	(-1.59)	(-1.64)	(-1.71)	(-1.67)	(-1.61)	(-1.61)	(-1.59)	(-1.64)
ln_employees	12.666***	13.241***	12.749***	13.273***	13.015***	13.311***	13.209***	13.049***	13.307***
t-stat	(12.73)	(13.31)	(12.82)	(13.35)	(13.09)	(13.38)	(13.27)	(13.1)	(13.37)
ZaYedU_loyal	-19.049***	-22.310***	-20.556***	-21.052***	-23.227***	-22.033***	-20.021***	-18.305***	-19.544***
t-stat	(-3.55)	(-4.28)	(-3.95)	(-4.08)	(-4.5)	(-4.23)	(-3.89)	(-3.55)	(-3.79)
BYUT_loyal	11.980*	5.318	11.307*	5.638	12.7092*	1.741	5.222	13.085*	7.429
t-stat	(1.73)	(0.78)	(1.64)	(0.83)	(1.87)	(0.33)	(0.77)	(1.91)	(1.11)
NU_loyal	2.804	2.670	2.957	3.294	1.083	5.277	0.074	4.581	3.057
t-stat	(0.53)	(0.51)	(0.56)	(0.63)	(0.21)	(0.78)	(0.01)	(0.88)	(0.59)
Const	33.089	108.096***	84.441***	69.143***	142.65***	82.443***	77.117***	79.071***	94.518***
t-stat	(1.31)	(10.03)	(5.38)	(9.14)	(12.81)	(11.01)	(10.46)	(10.74)	(9.34)
Regional FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.102	0.097	0.101	0.097	0.099	0.096	0.097	0.097	0.096
Obs.	13495	13495	13495	13495	13495	13495	13495	13495	13495

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Dependent variable is $Rent_{itd}$, where t =2002, ..., 2005.

Table 1.3. Estimation results for years 2006-2007.

Rent 2006-2007	I	II	III	IV	V	VI	VII	VIII
PR	58.087	-6.441		-91.113***				
t-stat	(1.63)	(-0.31)		(-5.54)				
BYUT	138.046***		126.632***		126.66***			
t-stat	(3.66)		(5.74)		(5.74)			
NUNS	-3.972		5.092			6.5490		
t-stat	(-0.09)		(0.18)			(0.23)		
SPU	295.470***	219.848***					230.79***	
t-stat	(6.24)	(5.75)					(7.23)	
CPU	-294.323***	-438.483***						-461.60***
t-stat	(-2.88)	(-5.05)						(-5.58)
state_support	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
t-stat	(-1.21)	(-1.35)	(-1.42)	(-1.45)	(-1.41)	(-1.48)	(-1.28)	(-1.54)
ln_employees	11.818***	11.921***	12.187***	12.179***	12.188***	12.384***	12.101***	12.197***
t-stat	(12.32)	(12.42)	(12.68)	(12.67)	(12.68)	(12.87)	(12.61)	(12.69)
PR_loyal	-6.292	-8.020	-9.133*	-9.823*	-9.115*	-8.034	-5.400	-10.502**
t-stat	(-1.22)	(-1.57)	(-1.81)	(-1.93)	(-1.8)	(-1.58)	(-1.06)	(-2.06)
BYUT_loyal	10.728**	13.315***	9.534*	13.152***	9.4845*	11.694**	13.793***	11.122**
t-stat	(1.97)	(2.46)	(1.76)	(2.43)	(1.75)	(2.15)	(2.55)	(2.05)
NUNS_loyal	7.617	7.332	3.971	4.949	3.979	4.784	8.083	4.156
t-stat	(1.31)	(1.26)	(0.68)	(0.85)	(0.68)	(0.82)	(1.39)	(0.71)
Const	52.154*	105.686***	76.188***	137.70***	76.593***	83.486***	81.105***	105.746***
t-stat	(1.83)	(7.77)	(10.33)	(11.57)	(10.91)	(11.47)	(11.74)	(13.34)
Regional fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.116	0.114	0.110	0.110	0.110	0.107	0.111	0.110
Obs.	11174	11174	11174	11174	11174	11174	11174	11174

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Dependent variable is $Rent_{itd}$, where t =2006, 2007.

Table 1.4. Estimation results for years 2008-2010.

Rent 2008-2010	I	II	III	IV	V	VI	VII	VIII
PR	-100.767***		-120.087***	-154.4***				
t-stat	(-3.63)		(-5.93)	(-8.74)				
BYUT	100.566***	183.209***			197.768***			
t-stat	(3.47)	(8.79)			(10.02)			
NUNS	-44.054	35.366				131.304***		
t-stat	(-1.05)	(0.96)				(3.7)		
CPU	-155.341		-356.876***				-655.284***	
t-stat	(-1.41)		(-3.47)				(-7.29)	
BL	-341.799***	-254.153***						-356.426***
t-stat	(-4.08)	(-3.18)						(-4.49)
state_support	-0.0007**	-0.0007**	-0.0007**	-0.0007**	-0.0007**	-0.0007**	-0.0007***	-0.0007**
t-stat	(-2.3)	(-2.34)	(-2.3)	(-2.27)	(-2.33)	(-2.35)	(-2.36)	(-2.34)
ln_employees	15.308***	15.398***	15.442***	15.491***	15.427***	15.758***	15.580***	15.729***
t-stat	(15.87)	(15.96)	(16)	(16.05)	(15.99)	(16.3)	(16.13)	(16.27)
PR_loyal	-25.014***	-24.373***	-22.050***	-22.144***	-23.310***	-20.573***	-21.413***	-23.143***
t-stat	(-4.87)	(-4.75)	(-4.31)	(-4.33)	(-4.56)	(-4.01)	(-4.19)	(-4.5)
BYUT_loyal	18.283***	18.209***	21.712***	22.494***	19.224***	22.272***	19.890***	18.298***
t-stat	(3.39)	(3.37)	(4.04)	(4.19)	(3.59)	(4.13)	(3.71)	(3.39)
NUNS_loyal	0.034	0.339	-0.199	-0.174	-0.033	0.076	-0.553	-0.449
t-stat	(0.01)	(0.05)	(-0.03)	(-0.03)	(-0.01)	(0.01)	(-0.09)	(-0.07)
Const	260.353***	171.315***	271.673***	267.023***	161.024***	160.957***	219.790***	190.416***
t-stat	(11.25)	(20.05)	(21.15)	(20.9)	(23.21)	(21.29)	(23.36)	(24.09)
Regional fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Year fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
R-squared	0.199	0.1981	0.197	0.1964	0.1976	0.1934	0.1953	0.1937
Obs.	16498	16498	16498	16498	16498	16498	16498	16498

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Dependent variable is $Rent_{itd}$, where t =2008, ..., 2010.

Table 1.5. Implementation of the land reform results.

Dependent variables	Land Reform implementation
PR	0.342***
t-stat	(3.41)
BYUT	0.325***
t-stat	(4.93)
NUNS	-0.191***
t-stat	(-2.69)
CPU	-0.317***
t-stat	(-6.28)
SPU	-0.028
t-stat	(-1.24)
Controls	YES
FE	YES
Obs.	50

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level.

1.9. Appendix

Table 1.A. Description of variables.

Years	Variable	Obs	Mean	SD	Median	Min	Max	Unit of Measurement
2002-2005	rent_actual	39599	83	76	78	0	1872	UAH/ha
2006-2007	rent_actual	15595	107	87	105	0	1497	UAH/ha
2008-2010	rent_actual	26924	205	159	192	0	3464	UAH/ha
2002-2005	leased_land	39599	1708	2099	1284	0	92948	ha
2006-2007	leased_land	15594	1905	3133	1295	0	181262	ha
2008-2010	leased_land	26924	1925	4049	1195	0	181263	ha
2002-2005	land	39599	1883	2182	1422	0	106360	ha
2006-2007	land	15595	2056	3362	1417	1	181262	ha
2008-2010	land	26924	2037	4063	1281	1	181263	ha
2002-2010	ln_employees	94934	4	1	4	0	9	Ln(# of persons)
	state_support	43611	420	2456	80	0	161252	Ths. UAH
2002-2010	PR_loyal	82865	0.058	0.234	0	0	1	
	Orange_loyal	82865	0.034	0.182	0	0	1	
	Tymoshenko_loyal	82865	0.034	0.180	0	0	1	
2002	NU	588	0.238	0.215	0.199	0.012	0.802	% of votes received
	CPU	588	0.202	0.126	0.173	0.007	0.468	
	ZaYedU	588	0.120	0.091	0.093	0.010	0.517	
	BYUT	588	0.071	0.054	0.064	0.005	0.285	
	SPU	588	0.092	0.089	0.063	0.003	0.418	
	SDPUo	588	0.060	0.040	0.051	0.006	0.234	
2006	NUNS	588	0.146	0.117	0.114	0.008	0.543	% of votes received
	CPU	588	0.041	0.022	0.042	0.001	0.099	
	BYUT	588	0.230	0.134	0.241	0.015	0.494	
	SPU	588	0.075	0.055	0.059	0.003	0.204	
	PR	588	0.287	0.243	0.182	0.006	0.821	
2007	NUNS	588	0.150	0.103	0.142	0.011	0.483	% of votes received
	CPU	588	0.054	0.027	0.058	0.001	0.111	
	BYUT	588	0.320	0.182	0.366	0.024	0.636	
	LP	588	0.044	0.023	0.043	0.006	0.149	
	PR	588	0.314	0.233	0.229	0.013	0.823	
2002	Land_reform	25	41.256	15.501	37.800	21.600	80.400	% of State Acts issued
2005	Land_reform	25	81.872	13.725	86.400	58.900	99.500	

Chapter 2

Land Market in Ukraine: Good or Bad News?

2.1. Introduction

Lately there has been a rising interest in land issues among development and agricultural economists. The main causes of concern are growing instances of land grabbing, rising food prices, climate change and positive population growth that increase demand for agricultural products. All of these make land policy be on the top of the list of priorities for policy-makers. Many developing economies as part of their food security programs are now seeking ways to enter markets of countries with abundant amounts of land suitable for agricultural production in order to produce food and then export it back home, and in this way combat the problem of food production deficit. In this respect, Ukraine with its extremely fertile black soils and suitable for agricultural production climate has

been watched closely by the international community. The country is about to finish a land reform and create a market for agricultural land that has been absent for almost 20 years. Although many perceive creation of the land market as a positive thing for economic and social development of Ukraine, there are still lots of gaps in regulation and legal framework. The aim of this chapter is to shed light on the way investors perceive creation of the land market in Ukraine conditional on political environment in the country.

Currently there is a moratorium on sales of agricultural land in Ukraine and landowners are allowed only to rent it or give it under succession or under a will. The moratorium has been prolonged several times since 2004 and it is supposed to be eliminated starting from January 2016. Although there have been many surveys and studies (ISNASU, 2010, 2011) conducted in Ukraine to find out what landowners and small farm owners think of elimination of the moratorium, there is little information available about the way big agricultural companies that rent hundreds of thousands of hectares of land see it. It is perceived by default that big agricultural holdings

prefer the moratorium to be eliminated to finally get a possibility to buy out land they currently rent. Landowners and small farm owners, on the other hand, seem to be against the elimination of the moratorium under current political and economic conditions present in the country. They seem to consider elimination of the moratorium to be a tool for an enrichment of politicians and Ukrainian and foreign businessmen, and associate the creation of the land market with an emergence of land monopolies (see Appendix 2.A for more details).

By exploring factors that may possibly affect the way big companies and their investors see the moratorium, this chapter addresses a question whether there is really a divergence in perception of the moratorium among landowners and investors of big land-renting companies. The chapter answers a question of how investors perceive the introduction of the land market and whether they think of it as good or bad news. The main objective of this research, therefore, is to study the reaction of financial markets to the prolongation of the moratorium on land sales in Ukraine. The impact of extension of the moratorium on agricultural producers is quantified using an event study methodology.

Estimation is done for the universe of Ukrainian agricultural companies listed on the stock exchanges and that have hundred thousands of rented farmland at their disposal. Results of the chapter have important policy implications as they would suggest whether Ukrainian agricultural producers are ready for the moratorium to be eliminated or not.

The main findings of the chapter suggest that there is a shift in investors' perception of the moratorium connected events that happen around 2010: before 2010 the majority of investors of big agricultural companies were in favour of elimination of the moratorium, however, in 2011 the consensus among them disappeared and the majority of investors preferred the moratorium to be in place. There is a strong evidence of an anticipation effect, when stock returns start to react to the event before it actually happens. This might be due to a formal character of events in the sample: almost all of them are adoptions of legal acts by the Parliament that are widely discussed for some time prior to the voting date. Hence, investors might start incorporating their expectations about the outcome of the vote at some point before an event. Moreover, because some

companies have their representatives in the Parliament and other types of political connections, investors of these companies might have access to insider information about the final decisions. Findings of dummy regression approach suggest that political connections indeed matter; however, their impact on abnormal returns of agricultural companies becomes significant only for some events after 2010. Also, moratorium connected events have stronger impact on returns of companies with larger land banks. Interestingly, the shift in investors' perception of the moratorium coincides with the time when the new President and his team come to power. His presidency is characterized by increased corruption levels, stronger pressure on private business and decreased freedom of speech. Also, the difference in investors' perception of the moratorium between 2008-09 and 2011-12 can be attributed to the adoption of the Law "On the Land Market" in the first reading that if adopted in the second reading, will automatically eliminate the moratorium. The results indeed indicate a strong negative reaction of investors to this Law.

The chapter relates to a strand of literature concerned

with estimation of the effect of land reforms on economic and social development of countries where they take place. Using Indian panel data, Besley and Burgess (2000) have shown that there exists a positive relationship between a land reform and poverty reduction and it comes from the change in terms of land contracts. Results of their paper suggest that by securing rights of tenants, it is possible to improve their economic conditions and, hence, reduce rural poverty. Banerjee et al. (2002) take a step forward and analyze the impact of tenancy reform in West Bengal, India, on agricultural productivity. Authors find that an increase in security of tenurial rights leads to significant improvements in agricultural productivity. According to Deininger et al. (2004), when opening the land market, more secure property rights for land may generate major efficiency gains. This can occur through the process of market selection when better and more efficient farmers oust less efficient ones. The evidence from the Mexican land reform is consistent with this hypothesis and confirms existence of farmer selection that leads to efficiency gains (Olinto and Deininger, 2002).

Land reforms that enable landowners to use their land assets as collateral and, in such a way, increase their access to the credit market are also positively associated with investment efficiency and economic growth (Banerjee, 1999). As discussed by Galor and Zeira (1993) and Banerjee and Newman (1993), efficiency gains can be obtained by distributing wealth more equally and securing the rights of economic agents to dispose of their assets. However, access to credit markets channel through which land reforms may improve economic performance has been doubted by some researchers and has not found much popularity. In particular, Johnson (2001) has found no relationship between the land reform and access to credit in Mexico, hence, arguing that low productivity and low levels of capital usage by agricultural producers in developing countries have nothing to do with little access to credit markets. Also, in presence of insurance market failures, collateral is subject to credit risk and, therefore, even if being able to get a loan, a farmer is not insured against the default (Boucher et al., 2008).

All of the papers discussed above analyze the impact of land reforms either on landowners or small

agricultural producers. This research, on the other hand, considers big agricultural holdings and the way their investors react to changes in land legislation. Even though there are many papers that analyze differential effect of size of agricultural companies (e. g. inverse relationship between the farm size and productivity (Bardhan, 1973; Binswanger et al., 1995; Barrett, 1996 etc)), there is little done on the impact of land reforms and regulations on big holdings that are responsible for a lion's share of agricultural production[18].

This chapter contributes to existing research by examining the reaction of investors of big agricultural companies to the prolongation of the moratorium on land sales in Ukraine. It discusses whether the land reform is desired by agricultural producers and land tenants and whether they consider it to be beneficial or cost-generating. Moreover, it quantifies the costs/benefits of prolongation of the moratorium for big

[18] In Ukraine, agriculture accounts for 8-10% of GDP (State Statistics Service of Ukraine, 2012) and is considered to be one of the most stable sectors of economy. As noted by Leonid Kozachenko, the head of Ukrainian Agrarian Confederation, in a BBC article on February 6, 2012, 'troubles' in agriculture caused by the new Law "On the Land Market" and 'dissatisfaction' with it of big agricultural players can lead to a decline in GDP growth of up to 1% annually.

agricultural companies.

Another strand of literature that the chapter is related to is political event studies that explore the effect of political events on financial markets and performance of private companies. Kim and Mei (2001) find that political news has significant impact on stock market returns. Their results are consistent with findings of La Porta et al. (1997) that show a close relationship between capital markets and legal systems. Also empirical findings suggest that stock returns react to major political events, like the end of civil war in Angola (Guidolin and La Ferrara, 2007), or terrorist activity in the Basque Country (Abadie and Gardeazabal, 2003), or the death of the leader of the country (Fisman, 2001). Moreover, political instability may be negatively associated with investment and savings (Venieris and Gupta, 1986; Alesina and Perotti, 1996), and economic growth (Barro, 1991; Mauro, 1995; and Alesina et al., 1996). Hence, the growing evidence suggests that political events have significant impact on performance of companies traded on the stock markets. This chapter contributes to the existing research by examining a specific change in legislation (i.e. prolongation of the

moratorium on land sales) and its impact on performance of big agricultural companies. It aims at understanding not only whether there is a reaction of financial markets to the moratorium but also what kind of reaction (positive, negative, or none) stock returns of agricultural companies experience, how their reaction changes over time, and what factors might possibly affect the change in their reaction.

The chapter is organized in the following way. First, history of the moratorium is discussed and the background of political situation in Ukraine is given. Next section discusses methodology used in the chapter and data. Then, main empirical results are presented together with robustness checks. Finally, conclusions are made.

2.2. History of the moratorium and political situation in Ukraine

Ukraine has started the land reform after gaining its independence in 1991. Before that, during the times of the Soviet Union, land was exclusively in the state's

ownership. A state collective farm, the so-called "*kolhoz*", was the only form of agricultural production unit. After the proclamation of independence of Ukraine, one of the most important issues was to decide what to do with "*kolhozes*" and their land19. During 199120 and 199221 first legal acts that regulated land ownership were adopted and they basically established private property for land in the country. Collective ownership rights for land were given to former employees and members of "*kolhozes*". However, they were prevented from fully exercising their ownership rights by the 1992 Land Code (Part 2, Article 17) that imposed a ban on disposal of land plots. The 1992 Land Code was basically identical to the Land Code of the Soviet Union, and hence, there was an urgent need for the new land legislation that would describe and regulate land relationships in independent Ukraine in a proper way. At the beginning of 2001, while the Parliament of Ukraine was working on the development

19 From now on land refers to agricultural land.
20 On March 15, 1991 Ukrainian Parliament issued the Resolution "On the Land Reform".
21 On January 30, 1992 passed the Law "On the Forms of Land Tenure".

of the new Land Code, it decided to impose22 a moratorium on land sales in order to prevent speculations and illegitimate deals with land in the meantime:

"…owners of land portions temporarily cannot conclude agreements on purchase and sale or gift of a land portion or otherwise alienate the above-mentioned land portions, except for their demise and in the instance of a purchase of land plots for state and public needs".

The moratorium prevented owners of land plots from using their plots as a mortgage, agricultural land could only be rented or given under succession or under a will. It was supposed to be a temporary measure that would be lifted once the new Land Code were in place. However, when in October 2001 Ukrainian Parliament finally adopted the Land Code, the moratorium on land sales was not eliminated, but on the contrary, was prolonged till January 1st, 2005. The Parliament explained this decision with the lack of proper legal and institutional frameworks that would regulate market transactions with land (i.e. exchange, sale, purchase, or

22 The Law of Ukraine "On Agreements on the Alienation of a Land Portion" adopted on January 18, 2001.

gift). According to the new Land Code, property rights for land were attached to the State Act that gave its holder the right to use the land plot. Despite the fact that holders of the State Act had the legal right to purchase, sell, gift, exchange, and mortgage[23] their land plots, they could not actually exercise this right. The only transaction with land they could perform was to lease it or give it under succession or under a will.

The Parliament kept extending the moratorium for the next couple of years and declared[24] that the main condition for it to be removed is to adopt two legal acts, specifically the Law "On the Land Cadastre" and the Law "On the Land Market". The Law "On the Land Cadastre" that legalizes data about the land plots has been already adopted in July 2011. Project of the Law "On the Land Market" was adopted by the Parliament of Ukraine in the first reading in December 2011. Currently, the moratorium on the land sales is still in place and is supposed to be lifted on January 1, 2016.

[23] According to the Presidential Decree dated December 3, 1999 "On Urgent Measures to Accelerate Reforms in Agriculture".

[24] Parliament detailed the main conditions for the moratorium to be removed in the Law of Ukraine "On the State Budget of Ukraine for 2008 and Amendment of Some Pieces of Legislation of Ukraine" adopted on December 28, 2007.

Table 2.1 summarizes the timeline of the moratorium. Only events that have happened after December 2008 are included into the sample because most of the agricultural companies under consideration went public at the end of 2007 only. Hence, there is not enough trade quotes to analyze events that have happened prior to 2008.

The direct consequence of the moratorium on land sales is that 42% (or 17.4 million ha) of agricultural land in the country is being rented[25][26] (while the rest is being used privately or by the state). Being unable to buy or sell land, agricultural producers are left with the only option which is to rent. In 2010, the 85 biggest agricultural producers were cultivating more than 2.5 million ha of rented farmland (State Statistics Service of Ukraine, 2010). In contrast, in Germany, for example, 92% of all farms have less than 100 ha of land in possession (Federal Statistical Office, 2010), while in

[25] State Agency of Land Resources of Ukraine. Accessed October 24, 2011. http://www.dazru.gov.ua/terra/control/uk/publish/article?art_id=130669&cat_id=20657

[26] Total agricultural land constitutes 41.6 million ha, 26% of which is in the state property, while the remaining 74% is used privately. Land can be rented from private landowners as well as from the state.

Poland 100 largest farms use around 20-2000 ha of land each (Polish Statistics Office, 2012). Usually big agricultural companies in Ukraine sign thousands of land leasing contracts with landowners who at most can have 100 ha of land unilaterally at their disposal. Operating in such a framework, agricultural companies depend heavily on changes in land legislation. Elimination of the moratorium on land sales in Ukraine would give them the possibility to finally purchase land they operate on, removing in this way costs of signing rental agreements that include direct rental and time costs, as well as costs of dealing with the red-tape incurred while legalizing and registering the agreements. However, liquidity constraints especially relevant after the 2008 financial crisis and currently worsened economic situation in the country may lead to the lack of credit opportunities being available to agricultural companies wishing to purchase land after the moratorium is lifted. Hence, agricultural producers face a very high risk as in the presence of credit market inefficiencies they might not be able to buy out land they rent when land becomes a market good. In such a framework, it is not a priory obvious whether

elimination of the moratorium is desirable by agricultural companies or not.

Moreover, current political situation in Ukraine is far from being open and investor-friendly. In 2011 corruption has increased (Transparency International, 2011) and economic freedom has fallen in the country (Heritage Foundation, 2011). Also in just 2 years since 2010 when the new President of Ukraine has been elected, perception of people that country is going in the wrong direction has increased rapidly and they seem to believe Ukraine is quickly moving away from democracy (Razumkov Center, 2010, 2011). Moreover, freedom of speech after the 2010 Presidential elections has also been declining: 45% of respondents in November 2011 think that freedom of speech has declined after Viktor Yanukovych, the President of Ukraine, came to power, as opposed to 19% in April 2010 (Rating Group, 2011). See Appendix 2.B for graphs and more details. A quantity of protests, meetings and demonstrations against the new Government reforms has increased in 2010-2011 as well. In fact, during 2010 alone, the number of prohibitions and violations of peaceful demonstrations exceeded the number of such

violations for the whole period of 2005-2009[27] (Democratic Initiatives Foundation, 2011). According to a recent survey of an independent research bureau iVOX (2012), 62.8% of respondents believe that state pressure on SMEs[28] has also increased considerably in 2011. On the other hand, big companies tend to have their lobbyists in the Parliament, and agricultural companies are not an exception here. Quite often unofficial owners[29] or people close to official owners of agricultural companies are also members of political parties or are delegates in the Parliament. This makes it easier to lobby favourable for their businesses laws and regulations. However, success of lobbyists in Ukraine majorly depends on political environment in the

[27] In November-December 2004, there was the so-called Orange Revolution in Ukraine that occurred as a reaction to massive falsifications of Presidential elections in favour of one of the candidates, Viktor Yanukovych. As a result, millions of people went out on the streets in support of the other candidate, Viktor Yushchenko. In the end, the latter was elected the President of Ukraine based on the re-election results. His office lasted 5 years from 2005 till 2009. In January 2010 Viktor Yanukovych succeeded him as the President.

[28] Small and medium size enterprises.

[29] According to Ukrainian legislation, Parliament delegates cannot carry out any other paid or entrepreneurial activity (except for teaching, research and creative activities), be a member of a governing body or a supervisory board of a company or for-profit organization. Therefore, many of them officially resign from their for-profit activities, however, unofficially continue to engage in them.

Parliament and whether the lobbyists are members of the coalition or opposition parties[30]. Therefore, even though a big agricultural company may have its representatives in the Parliament, it does not necessarily mean its interests will be met.

It is expected that investors' reaction to the extensions of the moratorium varies depending on the year of the event, because of the change in political regime in Ukraine happened in 2010 when Viktor Yanukovych and his team came to power. Presidency of Yanukovych is characterized by increased corruption levels, high pressure on entrepreneurs, and prosecution of opposition leaders. According to Arkadiy Kornatskyy (2011), owner of an agricultural company, a massive campaign has been launched by the state administrative resources in order to collect the best land for the upper echelons of state power. Land is taken away from rural population as well as from agricultural companies by

[30] Political opposition in Ukraine is usually split and consists of a large number of competing parties. Due to this opposition parties usually have little power in the Parliament. Moreover, after Viktor Yanukovych came to power in 2010, leaders of the opposition started to be prosecuted for their political decisions made during 2005-2009 (e.g. the former Prime-Minister Yuliya Tymoshenko, the former Minister Yuriy Lutsenko etc).

imposing on them unbearably high fiscal pressure, conducting constant illegitimate controls and checks, falsifying criminal records, and exercising similar instruments of administrative power. Moreover, in 2010 the Government imposed quotas on export of Ukrainian grain and gave a very high share of the quota to a company "Khlib Investbud" that was rumored to be controlled by the Minister of Agricultural Policy. As a result, Ukrainian grain producers had to rely on this and a couple of other grain trading companies to sell their grain abroad. All in all, it seems like the regime of Yanukovych does not make much effort to attract investors and make it easier for them to conduct business in Ukraine. Therefore, negative reaction of investors of agricultural companies to the elimination of the moratorium is expected as early as in 2010.

As mentioned above, prolongation of the moratorium is directly linked to the adoption of the Law "On the Land Market". If the Parliament manages to enact this Law, the need for the moratorium automatically disappears. Hence, reaction to the prolongation of the moratorium is closely connected to the way investors and agricultural companies see the Law itself: whether

it is beneficial for their businesses or not. This is mainly true for events happened in 2011 as the text of the Law was first registered in the Parliament and announced to the public in July 2011[31]. Current[32] version of the Law has many controversial points, especially what concerns big agricultural holdings. According to it, only a natural person can own agricultural land in Ukraine and its land bank cannot exceed 100 ha. Total area of leased land cannot exceed 100 thousands ha or 10% of agricultural land on the territory of one district[33]. At the same time, an average agricultural holding in Ukraine rents around 200-250 thousands ha of land. According to some experts, this restriction may affect negatively big agricultural business in the country and lead to either significant profit loss or to a complete shut-down of many agricultural companies. Leonid Kozachenko, the head of Ukrainian Agrarian Confederation, in a BBC article on February 6, 2012, says that up to 900

[31] Original Project of the Law "On the Land Market" registered in the Parliament on July 18, 2011, was changed and updated couple of times before it was finally adopted in the first reading.
[32] As of January 2013.
[33] Here, 10% includes land leased by a natural person itself as well as by other persons related to it. On average, this 10% corresponds to 5.5 thousands ha.

agricultural enterprises can go out of business due to this regulation.

As for the rights of tenants, they will not have priority rights to buy out land they currently rent which may make it harder for agricultural companies to form their own consolidated land banks. Especially considering that in order to initiate consolidation of a number of land plots into a unified tract of land, 90% of owners of separate land plots should give their consent. On the other hand, the Law provides tenants with some additional perks. The landlord cannot use its land before harvest is collected completely by the tenant, even if a rental contract expires before the leaseholder does that. In cases of infringements, the landlord has to compensate the direct costs of the leaseholder as well as lost profits in a fivefold size. Given the low bargaining power of individual landowners and their little awareness of their rights, big companies will benefit a lot from this part of the Law[34]. Also, foreigners are

[34] Most of the landowners live in rural areas and they have little access to information and legal consultations. Therefore, they may not be aware of the consequences of their actions when they start using their land after the renting agreement expires, but before the tenant collects the harvest. The tenant, on the other hand, profits a lot if the landowner infringes a contract as the fine includes not only the direct

prohibited from buying agricultural land in Ukraine; while in order to rent it, a person would have to have either a 5-year agricultural experience, or land in possession or rent, or be a young specialist that would like to create an agricultural enterprise. This basically prevents newcomers from entering the market and eliminates competition for existing players.

Therefore, the Law "On the Land Market" in its current version contains some positive as well as many negative points for big agricultural companies. A priory, it is expected that in 2011 investors of big agricultural holdings have negative reaction to introduction of the new Law, and consequently to elimination of the moratorium. For earlier events associated with the moratorium, the investors' reaction to the prolongation of the moratorium is not a priory obvious. It can go either in positive direction (explained by the lack of credit opportunities available for the buyout of land) or negative (if investors consider costs associated with

costs, but also lost profits in a five-fold size. Moreover, there might be a tendency to overestimate the lost profit by the tenants given they have higher and easier access to legal advice, political connections and administrative power that potentially can affect the court decisions in cases of litigation.

issuing thousands of renting agreements during the moratorium as too high).

2.3. Methodology

2.3.1. CAR Estimation

Event study methodology (following Campbell et al., 1997) is used in this research to determine the impact of the prolongation of the moratorium on land sales on agricultural companies traded on the stock market. According to efficient market hypothesis, efficient stock market makes use of new information and once news becomes available on the market, rational economic agents incorporate it into their asset pricing models (Fama, 1970). Therefore, movements of stock prices should reflect information about expected or predicted events. Unexpected events are then captured by the residual of the market model, e_t:

$$r_t = \alpha + \beta r_t^M + e_t,$$

where r_t is the daily stock return, r_t^M is the market

portfolio return, e_t is the abnormal return. According to the above written model, stock returns are predicted by the expected returns term ($\alpha + \beta r_t^M$) that takes into account available on the market information, and abnormal returns (e_t) that account for unpredicted events.

The impact of the prolongation of the moratorium on agricultural companies is studied by examining the relationship between abnormal returns and events described in Table 2.1. This is done in a sequence of steps. First, event and estimation windows are defined. An *event window* is an interval around the event date over which markets are expected to adjust to new information about the event. An *estimation window* is an interval before the event window, which is usually taken over the long period of time. Next, parameters of the market model ($\hat{\alpha}; \hat{\beta}$) are estimated in the estimation window and e_t is predicted in the event window:

$$e_t = r_t - \hat{\alpha} - \hat{\beta} r_t^M$$

Finally, cumulative abnormal returns (CAR) are

calculated:

$$CAR_t = \sum_{j=t_0}^{t} e_j$$

Positive CAR would mean that prolongation of the moratorium on land sales is appreciated by investors of agricultural companies in Ukraine and that the market perceives the moratorium as such that favors business affairs of these firms. Negative CAR, however, would suggest that agricultural companies would profit from elimination of the moratorium. If no effect of CAR on returns of agricultural companies is detected, then prolongation of the moratorium does not influence performance of firms under consideration.

Significance of impact of the events on CAR is formally tested through a t-test as well as through non-parametric rank and sign tests. As discussed in Corrado and Zivney (1992) and Brown and Warner (1985) nonparametric tests have better small sample properties and do a good job with coping with non-normality issues.

8 events from Table 2.1 are used for estimation. Some

of the events are dropped from the analysis due to the lack of stock market data to match them[35]. All of the events are divided into two categories – "moratorium prolonged" and "moratorium not prolonged". For example, such event as a declaration by the President that the moratorium should be eliminated falls under the "moratorium not prolonged" category, while an event of December 22, 2009 when the moratorium has been prolonged till January 1, 2012 falls into the "moratorium prolonged" category (see column 4 "Category" of Table 2.1). For every event, several event windows are defined, both symmetric and asymmetric, in order to detect the effect of market expectations and predictability of the events. Estimation windows are

[35] Only 9 Ukrainian agricultural companies that engage in crop cultivation and possess huge amounts of agricultural land are public. The first company to be listed on a stock exchange was Astarta, and it went public as early as in August 2006. Then, 6 others followed its example and raised money through IPO during late 2007 and mid-2008. However, some of them suffer from severe thin trading, a situation when a stock is traded very rarely, in some cases once a month or two. Due to this, such companies like Mriya, MCB Agricole and Sintal that are traded on Frankfurt Stock Exchange are excluded from the analysis. The other companies, like Agroton and KSG Agro, traded on Warsaw Stock Exchange, went public only at the end of 2010 and mid-2011, correspondingly, that made it difficult to use them in the sample, because of lack of data for estimation window. Therefore, only companies with at least 200 daily price quotes prior to an event date are used in the sample, and events to be analyzed are chosen in a way to match available stock data.

defined for an interval of 200 return quotes prior to the event[36]. The period between the event and estimation windows is set to be 2 weeks.

2.3.2. Dummy Regression Approach

Following Guidolin and La Ferrara (2007; 2010) dummy regression approach is also used along with CAR estimation. It consists of performing the pooled sample OLS estimation with residuals clustered at a company level and company specific fixed effects:

$$e_t = \delta + \gamma I_t + \varepsilon_t$$

where e_t is abnormal returns predicted from the market model and I_t is a dummy variable taking the value of 1 over the event window and zero otherwise. The coefficient of I_t measures the effect of events associated with either prolongation of the moratorium or its elimination on the returns of agricultural

[36] Estimation window for MHP for event "23.12.2008" is 150 return quotes as MHP went public only in May, 2008.

companies. If γ is significant, then it means that events under consideration affect the firm value of agricultural producers.

As some companies have their lobbyists in the Parliament that can potentially affect decisions about the prolongation of the moratorium, the presence of political connections is controlled for in the model. The variable *connections* takes the value of 1 for companies if at least one board member or a person that de-facto controls the company is also a member of a political party or is a delegate in the Parliament; and 0 otherwise. However, because connections is time-invariant, an interaction term I_t**connections* is introduced into the model in order to estimate the impact of events under consideration given political connections of agricultural companies. *Connections* is time-invariant, because the last Parliamentary elections were in September 2007 and the term of this Parliament ended on December 12, 2012. Hence, if a company had its representative in the Parliament, it has been there at least since 2007 and until December 2012, and its status could not have changed. If the coefficient on I_t**connections* is positive and

significant, it means that an event is beneficial for returns of companies with political connections. If, on the other hand, coefficient on I_t*$connections$ is negative, then it probably means that an event has a negative impact on company's returns given existing political connections. This may be an indicator of "wrong" connections, i. e. connections to opposition parties or blocks that are openly and expressly against the ruling elite. "Wrong" connections might be especially relevant after 2010 when Viktor Yanukovych and his team came to power and started prosecuting leaders of political opposition.

Also, *land* variable is used to control for the amount of land a company has in its land bank in order to see if there is a significant effect of size of land holdings on the abnormal returns. *Land* is measured in thousands of hectares. As an alternative specification, logarithm of *land* is included into the model as a test of possible non-linear relationship between *abnormal returns* and *land*. Also an interaction term I_t* *land* is included into the model to estimate the impact of events connected to the moratorium on investors' reaction given land-holdings

of companies in the sample.

2.4. Data

The analysis is performed for the universe of Ukrainian agricultural companies listed on the stock market. There are 4 companies in the sample, two of them are traded on London Stock Exchange (LSE) and the other two – on Warsaw Stock Exchange (WSE). None of the firms is listed on Ukrainian stock exchanges. Stock market data is collected from Bloomberg database starting from August 16, 2006 and finishing December 6, 2012. Table 2.2 contains description of the universe of companies under consideration. On average, companies in the sample rent more than 100 thousands ha of agricultural land.

Both for CAR and dummy-regression approach, market indices of the exchanges where a stock is listed are used. For companies listed on LSE, FTSE-100 Index is used. Similarly, for companies listed on WSE, WIG Index is used. Refer to Appendix 2.C for the description of indices.

Half of the companies in the sample have political

connections. The majority owner of Kernel, Andriy Verevs'kyy, was also a delegate in the Parliament and was a member of the opposition party "BYUT"[37] until 2011 when he switched to the pro-Presidential party PR[38]. Yuriy Kosyuk, owner of MHP, used to be (or possibly he still is) a member of political party called "UNP"[39]. Also, the current first deputy chairman of the board of directors of MHP was the Minister of Agricultural Policy until 2010. Data about political connections is taken from public sources like membership lists of political parties and companies' websites.

2.5. Results

2.5.1. CAR estimation

Estimation of cumulative abnormal returns is performed for individual companies and for the

[37] Block of Yuliya Tymoshenko. Leader of the party, Yuliya Tymoshenko, is currently under arrest for political decisions made during 2008-2009 when she was the Prime Minister of Ukraine.
[38] Party of Regions is loyal to and controlled by the current President Viktor Yanukovych.
[39] Ukrainian National Party.

portfolio of companies. Several symmetrical and asymmetrical event windows are defined for each event. This is done in order to capture the anticipation effect of the events. Most of the events analyzed are concerned with changes of legislation and these types of events are usually widely discussed for quite some time prior to the announcement of the final decision. Hence, it is natural to assume that market agents anticipate the outcomes of events and incorporate this anticipation into their asset pricing models before the events.

Events that are included into the "moratorium prolonged" category are December, 23 2008; December 22, 2009, December, 21 2011, and November, 20 2012. The Parliament prolonged the moratorium till 2010 in the first case, till 2012 in the second case, until 2013 in the third case, and until 2016 in the last case. Such events like registration of a project of the law in the Parliament or its first discussion are not considered in the analyses as usually projects of laws are subject to many changes during the discussion period[40]. There are

[40] I tried to include all these events into the analysis, however, investors' reaction to none of them was significant. Therefore, results of estimation that includes these events are omitted from the discussion.

too many "noisy" events in the period between an announcement of a project to the public and an adoption of the final law that makes it very hard to separate investors' reaction to the actual event of interest. Statements of politicians in the media or comments by analysts are among these "noisy" events.

"Moratorium not prolonged" category included the date March 2, 2011 when the Parliament rejected a project of the Law that was supposed to extend the moratorium till 2015. At the time, moratorium had to be removed in January 2012. Hence, it seemed like the Parliament wanted to establish the land market as soon as possible. This was confirmed by the President on April 7, 2011 when in his annual speech to the Parliament he said that the moratorium should be removed and the land market should be functioning in 2012. This event was also included into the "moratorium not prolonged" category. The last event in this category was the one happened on October 2, 2012 when the Parliament failed to prolong the moratorium until 2014.

Table 2.3 contains main results of CAR estimation for an event window [0;+2]. Results for other event

windows can be found in Appendix 2.D. Only p-values of t-test statistics is reported for individual companies, because non-parametric tests are usually performed for a portfolio of companies and tend to be superior to the t-test if there is a larger sample of at least 5 companies included in a portfolio (Brown and Warner, 1985; Corrado and Zivney, 1992).

According to Table 2.3, companies tend to react negatively to the moratorium extensions, especially prior to 2011. The first event, "23dec2008", when the moratorium was prolonged till 2010, was perceived negatively by investors of Astarta and MHP as well as Kernel, however, cumulative abnormal returns for the latter were not significant for this event. In the course of three days following the event in column 1, stock returns of Astarta lost around 11.8 percentage points of their value in excess of what was explained by the underlying market dynamics. 13.5 percentage points fall of abnormal returns was also observed and significant for MHPC. Such a rapid decrease in stock value is considered to be really big in financial terms. Shares of Kernel experienced not significant, but still negative reaction to the extension of the moratorium in

December 2008.

Landkom experienced 0.3 percentage points increase in abnormal returns as a reaction to the first event in Table 2.3. Although this result is essentially zero, it may be helpful to explore what has been happening with the company at that time. First of all, in 2008 the company was in deep crisis. Over the period of 2008-2009, the net loss of Landkom have reached almost USD 96 million (Landkom, 2009, 2010; Rennaissance Capital, 2010). As a result, the company had to change its management team in the mid-2009 and decrease its land bank from 155 thousand ha in 2008 to 74.2 thousand ha in 2009 (Landkom, 2010; BG Capital, 2010). Due to the new management team's reforms and severe cost cutting, it was only in 2011 that Landkom went back on track with a positive financial performance. In early 2012, however, the company was acquired by Alpcot Agro, a Sweden based company operating in Ukraine and Russia. Therefore, the fact that investors of Landkom did not have any significant reaction to the extension of the moratorium in 2008 could be explained by the negative performance of the company at that time. Most probably investors were more worried whether the

company would make it out of the deep crisis, rather than about the prolongation of the moratorium.

The reaction of investors of agricultural companies to the second event in Table 2.3 "22dec2009" when the moratorium was prolonged till 2012, was negative for all the companies. However, significant results were observed only for 2 of them: Astarta's abnormal returns decreased by 8.1 percentage points over the 3 days of the event window[41] and Landkom's ARs fell down by 0.5 percentage points in excess of what was expected by the market. Even though cumulative abnormal performance was not significant for Kernel and MHPC, signs of their CARs were still negative. Because both Kernel and MHPC have political connections and their representatives/lobbyists in the Parliament, it is quite probable that abnormal returns of these companies have absorbed information about the moratorium extension prior to the actual vote date.

The next event in the "prolong" category is "21dec2011" when the Parliament prolonged moratorium till January 2013. Investors of Astarta,

[41] Three days include day "0" when the event has actually happened and days "1" and "2" which are the two days following the event.

Kernel, and Landkom perceived this event as positive, while investors of MHPC – as negative. It seems like there is a change in a way investors of Astarta, Kernel and Landkom react to the moratorium extension. In December 2011, they perceived prolongation of the moratorium as good news and abnormal returns of these companies increased. Although significant estimates were observer only for Kernel, cumulative abnormal returns of Astarta were very large and constituted 11.1 percentage points. Moreover, they became significant at 5% level in the event window [-1;+1] and constituted 15.6 percentage points (see Appendix 2.D). Therefore, there might have been an anticipation effect, when a company started to react to an event before it has actually happened.

The "21dec2011" event is closely connected to the adoption of the Law "On the Land Market" in the first reading. The Parliament prolonged the moratorium for one more year till 2013 to be able to adopt this Law in the second (i.e. final) reading during 2012[42]. Moreover, because the current version of the Law is not very

[42] However, this Law has not been adopted yet.

beneficial for big agricultural holdings, as discussed in the previous section, investors of MHPC could have reacted not only to the prolongation of the moratorium for one more year, but also to the Law "On the Land Market" and its consequences for agricultural companies. Also, their negative reaction could be explained by the fact that they would prefer the moratorium to be extended for more than just one year.

The last event in the "prolong" category is "20nov2012" when the moratorium was extended until January 2016. Only cumulative abnormal returns of MHPC turn out to be significant. ARs of this company decreased by 0.4 percentage points as a reaction to the prolongation of the moratorium till 2016. MHPC's abnormal returns exhibit a negative trend each time the moratorium is extended. Investors of this company prefer the moratorium to be eliminated and this may have to do with the availability of political connections that the company's management has. Investors may perceive that even if moratorium is eliminated, the company would be able to get better land, rental discounts, or other benefits resulting from the company's closeness to higher echelons of power.

Overall, it seems like there was a shift in perception of the extension of the moratorium from 2009 to 2011. If in 2008 and 2009 the majority of investors reacted negatively to the prolongation of the moratorium and preferred it to be eliminated, in 2011 there was a split in reaction and a lion's share of investors tended to appreciate extension of the moratorium.

The first event in Table 2.3 that belongs to the "moratorium not prolonged" category, "02mar2011", causes a significant decrease of abnormal returns of Kernel (-2.3 percentage points), as well as of Astarta, Landkom and MHPC, however, CARs are not significant for the latter three companies. Investors had a negative reaction to the Parliament rejecting the project of the Law that was supposed to prolong the moratorium till 2015.

Patterns of investors' reaction to the next event in Table 2.3, "07apr2011" are similar to those for "02mar2011". Astarta and MHPC show negative and significant reaction to the declaration by the President that the moratorium has to be eliminated in January 2012. Cumulative abnormal returns of Kernel are also negative, but not significant. The reaction of investors of

all of the companies to the last event in Table 2.3 which is the refusal of the Parliament to extend the moratorium until 2014 seems to be essentially zero.

Overall, it seems like the majority of investors of agricultural companies did not want the moratorium to be in place in 2008 and 2009. Financial markets seemed to react negatively to the prolongation of the moratorium at that time. Most probably, investors perceived that it would be better for the companies to have an open land market in Ukraine, so that the companies could buy out land they were renting in case they would need to. However, their reaction somewhat changed in 2011. Majority of companies perceived negatively events connected with the elimination of the moratorium, like "02mar2011" when the Parliament failed to prolong the moratorium till 2015 and "07apr2011" when the President declared that the moratorium had to be eliminated as soon as possible. This means that although investors were keen on having an open land market before 2010, a little bit more than a year later they changed their mind and decided that it would be better to keep the moratorium in place. As discussed in the first and second sections of

the chapter, such a rapid change in perception of the moratorium could be due to a change in political regime in Ukraine after Viktor Yanukovyvh became the President in 2010 and due to events connected to the adoption of the Law "On the Land Market".

Cumulative abnormal returns estimation is also performed for the equally weighted portfolio of four companies. This is done in order to eliminate company specific effects and estimate an average market reaction to the moratorium connected events. Table 2.4 contains main results of portfolio estimation for [-0;+2] event window, while results for other event windows can be found in Appendix 2.E.

Results reported in Table 2.4 are consistent with results of CAR estimation for individual companies. Stock market reacted negatively to the extensions of the moratorium until 2010, but then in 2011 investors' reaction changed a bit. Over the course of three days around "23dec2008" event, abnormal returns of agricultural companies decreased by 5.6 percentage points in excess of what was explained by the market dynamics. As a reaction to the extension of the moratorium till 2012, agricultural companies

experienced 3.8 percentage points decrease in their abnormal returns. Clearly, in 2008 and 2009 investors considered extensions of the moratorium not to be beneficial for Ukrainian agricultural holdings. Investors' reaction to the last two events in the "prolong" category is not significant anymore. If before 2010 there was a prevailing opinion that the moratorium should be eliminated, in 2011 the consistency and consensus among investors were gone and there appeared many contradictory views on the matter that decreased significance of the coefficients in Table 2.4.

Investors reacted negatively to "02mar2011" event and their reaction was significant. "07apr2011" and "02oct2012" events do not have a significant impact on the portfolio of agricultural companies, however, this may be due a relatively lower importance of these events.

Results of portfolio estimation show that there is a shift in investors' perceptions of the prolongation of the moratorium that has happened after 2009 and is observed in 2011.

Figure 2.1 shows an evolution of cumulative abnormal returns and abnormal returns over 2 days

before an event and 2 days after. Event dates are indicated by vertical lines. Although CARs for all events show negative trends, ARs series fall a bit earlier just before the events and then catch up over the next couple of days. This dynamic demonstrates the anticipation effect, especially relevant for companies that have political connections and lobbyists in the Parliament. Quite possible that the final decision about the adoption of the Law is known a day or two before the actual vote and the market absorbs this information even prior to the event.

2.5.2. Dummy regression approach

In order to test the effect of moratorium connected events on the abnormal returns of agricultural companies found in CAR estimation, dummy regression approach is performed. It allows not only to check results discussed in the previous section, but also to test the relationship between the amount of land an agricultural company cultivates and availability of political connections on one hand, and abnormal returns

on the other hand. The dummy regression approach allows including in the analysis political variables that can somewhat help with the potential endogeneity problem arising from the fact that agricultural companies have their lobbyists in the Parliament and can potentially affect political decisions.

Tables 2.5, 2.6 and 2.7 present results of dummy-regression estimation. All of the tables contain results of different specifications of the model discussed in the "Methodology" section. Table 2.5 shows estimates for the "moratorium prolonged" category of events all pooled together. Table 2.6 presents results for two different samples of "prolonged" events: the one for the before-2010 events that includes "23dec2008" and "22dec2009" events; and the other one for the after-2010 events that includes "21dec2011" and "20nov2012" events. Estimates for "moratorium not prolonged" category can be found in Table 2.7.

In Table 2.5 the variable *prolong_all* includes "23dec2008", "22dec2009", "21dec2011" and "20nov2012" events. The variable *prolong_before2010* in Table 2.6 includes only "23dec2008" and "22dec2009" events and the variable *prolong_after2010* includes

"21dec2011" and "20nov2012" events. Two different specifications of the *prolong* variable are included to test for the different reaction of investors before and after 2010. *Land* variable is measured in thousands of hectares and it is the actual amount of land being cultivated by a company. All of the regressions were performed with *log(land)* instead of *land*, where *log(land)* is the natural logarithm of land. However, their results are the same as the ones reported in Tables 2.5, 2.6 and 2.7, therefore, only estimates of models with *land* variable are presented. *Prolong_all*land*, *prolong_before2010*land* and *prolong_after2010*land* are interaction terms between *prolong_all*, *prolong_before2010*, and *prolong_after2010*, and *land*, correspondingly. *Prolong_all*connections*, *prolong_before2010*connections* and *prolong_after2010*connections* are interaction terms between *prolong_all*, *prolong_before2010*, and *prolong_after2010*, and connections, correspondingly. *Prolong_all*connections_before2010* and *prolong_all*connections_after2010* are interaction terms between *prolong_all* and *connections* before 2010 and after 2010, correspondingly. These two variables are included in order to test the difference between having

connections before Viktor Yanukovych comes to power and afterwards.

In Table 2.7 the variable *don't_prolong_all* includes "02mar2011", "07apr2011", and "02oct2012" events; the variable *don't_prolong_laws* includes only "02mar2011" and "02oct2012" events. Inclusion of two different specifications of the *don't_prolong* variable is done as "07apr2011" event may cause a decrease in statistical power of regressions due to a "noisy" character of this event discussed earlier[43]. *Don't_prolong_all*land* and *don't_prolong_laws*land* are interaction terms between *don't_prolong_all* and *don't_prolong_laws*, and *land*. *Don't_prolong_all*connections* and *don't_prolong_laws*connections* are interaction terms between *don't_prolong_all* and *don't_prolong_laws*, and *connections*, correspondingly.

As expected after seeing results of CAR approach, abnormal returns of agricultural companies react negatively to "moratorium prolonged" events in Table 2.5. The relationship between *abnormal returns* and *prolong* dummies (*prolong_all* variables) stays constant

[43] "07apr2011" event is just a declaration of the President, it may not be comparable in power to adoption of legal acts.

throughout specifications and fluctuates around 2-6 percentage points; and becomes larger and more significant only when interaction terms with land are included into the model. However, neither *prolong_all* variable, nor any of the other variables in Table 2.5 is significant in any of the specifications. This may be due to the effect of the events under consideration being cancelled out, because events prior to 2010 and post-2010 might have had an opposite impact on the abnormal returns as suggested by the event study methodology. Therefore, results of the estimation for events before and after 2010 are presented in Table 2.6.

According to Table 2.6, *prolong_before2010* and *prolong_after2010* variables become significant only if included together with *prolong_before2010*land* and *prolong_after2010*land*, correspondingly. A coefficient on *prolong_before2010* in columns 3 constitutes 7.5 percentage points and is positive; while a coefficient on *prolong_after2010* in column 8 is 12.1 percentage points and is negative. At the same time an interaction term on *prolong_before2010*land* becomes negative and significant (see column 3), while a coefficient on *prolong_after2010*land* in column 8 is positive and

significant. This means that investors of agricultural companies reacted negatively to the extension of the moratorium before 2010 only given the amount of land holdings: investors' reaction to the prolongation of the moratorium in 2008 and 2009 was stronger for companies with more land. Therefore, the larger the amount of land a company cultivated at that time, the stronger was investors' preference for the establishment of the land market and elimination of the moratorium. After 2010, however, investors' perception of the moratorium has changed and they reacted positively to the extensions of the moratorium given the land holdings of agricultural companies.

Land variable itself is negative throughout the regressions. That is probably due to the fact that in order to rent an additional amount of land, a company has to either get a bank credit or use its income from the last period and invest it in the current period. Hence, the debt level increases and the probability of dividend payments decreases, which is a bad news for investors. Plus, during 2008-2009 Ukraine was in a deep financial crisis, therefore, investors might have perceived an increase in a company's borrowings as a bad sign

overall and reacted negatively to the expansions of the landholdings. In 2011-2012 the country was still on the edge of default, but this time due to internal political crisis.

The coefficients on interaction terms between "*prolonged before 2010*" event dummies and *connections variable* is mostly negative and insignificant with large standard errors. However, coefficients on *prolonged_after2010*connections* is positive in columns 9 and 10. It seems like investors of companies with political connections perceive positively extension of the moratorium in 2011 and 2012, while their reaction has been negative before 2010. This is consistent with the discussion of corruption levels that increased in Ukraine after 2010 and the existence of political elite close to Viktor Yanukovych and his team. Hence, investors could have perceived that if a company had political connections, the decision of the Parliament (where the majority consisted of loyal to Yanukovych people) to prolong the moratorium was beneficial to this company.

The difference between the results in Panel I and Panel II of Table 2.6 suggests that investors' reaction to events from "moratorium prolonged" category is

different before and after 2010. Moreover, political connections seem to affect investors' reaction to extensions of the moratorium in an opposite way before and after 2010.

According to Table 2.7 results, abnormal returns seem to be negatively correlated with "moratorium not prolonged" events as well. Again, this is consistent with a priory expectations and with CAR estimation results. Coefficients on *don't_prolong_all* and *don't_prolong_laws* variables become significant only if interaction terms with *land* and *connections* are included into the regressions. This suggests that events from the "moratorium not prolonged" category affect abnormal returns of agricultural companies only given their land holdings and/or political connections.

Land variable in Table 2.7 is negative and insignificant as in the case of "prolong" category estimation in Table 2.6. Coefficients on *dont'_prolong_all*land* and *dont'_prolong_laws*land* are positive and significant. This means that while investors of agricultural companies on average reacted negatively to the Parliament failing to prolong the moratorium, their reaction was positive for companies with bigger

land holdings. Therefore, investors perceived that creation of the land market could have been beneficial only for companies with larger land holdings.

Interesting results are obtained for *dont'_prolong_all*connections* and *dont'_prolong_laws*connections*. Coefficients on both variables are positive and significant that suggests that "not prolonged" events affect abnormal returns of agricultural companies with political connections in a positive way. Hence, creation of the land market could have been good news only to companies with political connections. This result is not surprising, because as discussed above politically connected companies could have profited a lot from elimination of the moratorium by getting better deals and discounts as a 'favour' from their powerful friends.

Overall, results of the dummy-regression approach are consistent with results of CAR estimation. Investors' reaction to moratorium connected news differs before and after 2010. However, their reaction tends to be conditional on the size of the land holdings that companies cultivate. Finally, political connections seem to be important only after 2010 and for "not prolonged"

category of events.

2.6. The Law "On the Land Market" case

As discussed above, the Law "On the Land Market" is directly linked to the moratorium, because if it is adopted, the moratorium will be automatically eliminated. Hence, investors' reaction to its adoption in the first reading might be an indicator of investors' perception of the moratorium and the introduction of the land market in Ukraine.

Table 2.8 presents results of CAR estimation using event study methodology discussed earlier for an event window [-0;+0] that includes only the day of the event. Estimation results for other event windows can be found in Appendix 2.F.

According to Table 2.8, the event "09dec2011" which is the adoption of the Law "On the Land Market" in the first reading was perceived negatively by investors of agricultural companies. All of the CAR estimates are negative, both for individual companies and for the portfolio. Significant results, however, are observed

only for Kernel and portfolio as a whole. Returns of Kernel decreased by 4.7 percentage points on the day when the Law was adopted, while the market portfolio of agricultural companies lost 2.5 percentage points of its value due to the event in excess of what was expected by the underlying market dynamics. These results are consistent with the discussion made in the previous section, as the Law contains a couple of controversial points that may affect negatively businesses of big agricultural companies. Among them are the ceiling on the amount of land being rented or owned and absence of priority rights to buy out land that a company rents.

Results of dummy regression approach presented in Table 2.9 confirm findings of CAR estimation for the "09dec2011" event. The coefficient on the event dummy is persistently negative in all of the specifications of the model. Interestingly, according to column 1 results when abnormal returns are regressed on the "09dec2011" variable only the coefficient of -2.7 percentage points is very close to the CAR estimate for the portfolio of -2.5 percentage points from the last column in Table 2.8. Therefore, the two methodologies

give consistent results.

When *land* variable is controlled for in the second column of Table 2.9, the coefficient on the event dummy is almost unchanged and constitutes -2.6 percentage points. The coefficient on *land* is negative, but insignificant. However, when the interaction term *09dec2011*land* is included into the model, the coefficient on *09dec2011* becomes insignificant, but still negative. This suggests that although the adoption of the Law has negative impact on abnormal returns of all companies in the sample, those with more land in their land-banks experience larger decrease in stock value.

Political connections are also controlled for. According to column 4 of Table 2.9, abnormal returns of companies with political connections lost 3.4 percentage points of their value, while returns of companies without political connections experienced a slightly lower decrease in value of minus 1 percentage point. The same outcome is observed in the last column when all of the independent variables are included in the model. The coefficient on *09dec2011*connections* is again negative and significant at 1% level, while all of the other variables are insignificant. Returns of companies

with political connections decreased by 3 percentage points when the Law was adopted.

Both dummy regression approach and CAR estimation of "09dec2011" event give similar results. Investors of agricultural companies reacted negatively to news about adoption of the Law "On the Land Market" in the first reading. Therefore, there is a strong evidence that investors do not favour the current version of the Law and they would probably prefer to have the moratorium in place. Dummy regression results suggest that although investors of all of the agricultural companies perceive "09dec2011" event as negative news, companies with political connections are affected by it to a larger extent. Therefore, political connections matter in the land market context and they play an important role in investors' decision-making process.

2.7. Discussion of the results

Estimation results presented in the previous section suggested that the majority of investors of big

agricultural companies preferred the moratorium to be eliminated before 2010, however, their reaction somewhat changed after 2010. Figures 2.2 and 2.3 below present results of a survey in which landowners and small farm owners from all over Ukraine are asked about their opinions about the moratorium. Here and further on, *small farm* is a generalized definition of farms with total land bank, on average, constituting 0.23 ths ha and *small agricultural enterprises* with total land bank, on average, constituting 1.3 ths ha. *Landowners* are defined as private persons that on average have 4-8 ha of land.

According to Figure 2.2, the negative attitude of small farm owners towards the elimination of the moratorium increased significantly in just one year. If in 2010, 30.4% of respondents thought that the moratorium should have been extended, in 2010 this figure constituted 56%. Moreover, in 2011 almost 60% of landowners were against elimination of the moratorium. These results are consistent with the results of event study and dummy regression approach got for investors of big agricultural companies. In seems like there is a synergy of attitudes of different market players what concerns the

moratorium, especially after 2010. Instability of political environment and an increase in corruption levels that became more profound and considerable after 2010 when the new President and his team came to power were probably the most important factors that could explain this trend in perceptions. Indeed, instances of criminal activities "supported" by the state-level officials, discussed in the previous sections, increased significantly since 2010. Leonid Kornatskyy, a farm owner, in his interview to Ukrainian Pravda on December 11, 2011 told that the best land was being taken away from landowners by means of threats and prosecutions and given to those who are in power. No wonder that agricultural market players were afraid of the final elimination of the moratorium as in this case their land could have been taken away and sold out to the highest bidder.

As it can be seen from Figure 2.3, small farm owners and landowners are afraid of the free land market and this negative attitude increases with time. This increasing negative trend is especially profound for small farm owners: if in 2010 34% of small farm owners thought that agricultural land in Ukraine should not be

for sale, in 2011 this figure constituted 44%. Also in 2011 25% less small farm owners thought that the land market should be introduced only when the proper economic and regulatory framework was in place. Interestingly, percentage of respondents that think that agricultural land should be for sale is very small and it almost does not change over time. The majority of respondents either does not want the free land market at all or would like to have it conditional on a set of requirements (i.e. proper economic and legal environment, citizenship, place of residence etc).

In general, it seems like the views of both investors of big agricultural companies and small farm owners/landowners converge what concerns the elimination of the moratorium. They would like it to be in place, at least before the proper regulatory framework is in place. At present, moratorium is preferred by different types of agricultural market players and the attitudes towards the moratorium seem to be independent of the size of the enterprise.

2.8. Conclusions

The chapter analyses reaction of the stock market to events connected with the extension of the moratorium on land sales in Ukraine. The estimation is performed for a sample of four Ukrainian agricultural companies that are traded on a stock exchange using event study methodology and a dummy-regression approach.

Results suggest that the majority of investors of agricultural companies reacted negatively to the extension of the moratorium before 2010, however, their reaction has changed afterwards. In 2011 consensus among the investors about the moratorium disappeared and most investors perceived negatively events connected with the elimination of the moratorium. This may have to do with unstable political environment in the country and absence of legal instruments that would regulate an open land market. Also, the current proposal of the Law "On the Land Market" that if adopted would automatically dismiss the moratorium does not favour business of big agricultural companies. Therefore, investors react negatively to the adoption of this Law in the first reading and currently prefer the

moratorium to be in place.

Dummy-regression approach suggests that investors react negatively not just to moratorium connected events, but to these events given land holdings of agricultural companies. Also, political connections of the companies seem to impact abnormal returns, however, their effect is significant only for some events after 2010.

Overall, it seems like big agricultural market is not ready for the introduction of the land market yet. It is not only landowners and small farms that do not want the moratorium to be eliminated yet, investors of agricultural companies are also against it.

Further research has to be conducted, however, exploring other confounding factors that potentially affect investors' reaction to the moratorium connected events.

Table 2.1. Timeline of the Moratorium on Land Sales in Ukraine.

Date	Event	Sample	Category	Legal Document
18.01.2001	Imposition of moratorium on any market transaction with land except for purchases for state or public needs	No	Prolong	The Law of Ukraine "On Agreements on the Alienation of a Land Portion"
25.10.2001	Prolongation of the moratorium until January 1, 2005	No	Prolong	Land Code of Ukraine
06.10.2004	Prolongation of the moratorium until January 1, 2007	No	Prolong	The Law of Ukraine "On Amendments to the Land Code of Ukraine" # 2059-IV
19.12.2006	Prolongation of the moratorium until January 1, 2008	No	Prolong	The Law of Ukraine "On Amendments to the Land Code Concerning the Introductionof Moratorium on Sales of Agricultural Land Before Certain Legal Acts are Adopted"
13.01.2007	Prolongation of the moratorium until January 1, 2008 that came into effect after Presidential veto was overcome	No	Prolong	The Law of Ukraine "On Amendments to the Land Code Concerning the Introduction of Moratorium on Sales of Agricultural Land Before Certain Legal Acts are Adopted"
28.12.2007	Moratorium prolonged conditional on adoption of the Law "On the Land Market" and the Law "On the Land Cadastre"	No	Prolong	The Law of Ukraine "On the State Budget of Ukraine for 2008 and On Amendments to Some Pieces of Legislation of Ukraine"
23.12.2008	Prolongation of the moratorium until January 1, 2010	Yes	Prolong	Proposal of the President of Ukraine "On Amendments of Certain Pieces of Legislation of Ukraine on Prevention of Negative Consequences of the Global Financial Crisis in Agricultural Sector"
22.12.2009	Prolongation of the moratorium until January 1, 2012	Yes	Prolong	The Law of Ukraine "On Amendments to Sections 14 and 15 of Part 10 of the Land Code of Ukraine Concerning the Moratorium on the Land Sales "
02.03.2011	The Parliament failed to prolong the moratorium till January 1, 2015	Yes	Not Prolonged	
07.04.2011	President of Ukraine declared that moratorium had to be lifted as soon as possible	Yes	Not Prolonged	
09.12.2011	Parliament adopted in the first reading Project of the Law "On the Land Market"/ moratorium had to be eliminated on January 1, 2012	Yes	Not Prolonged	Project of the Law of Ukraine "On the Land Market"
21.12.2011	Prolongation of the moratorium until January 1, 2013	Yes	Prolong	The Law of Ukraine "On Amendments to Sections 14 and 15 of Part 10 of the Land Code of Ukraine Concerning the Moratorium on the Land Sales "
02.10.2012	The Parliament failed to prolong the moratorium until January 1, 2014	Yes	Not Prolonged	
20.11.2012	Prolongation of the moratorium until January 1, 2016	Yes	Prolong	The Law of Ukraine "On Amendments to the Land Code of Ukraine Concerning the Turnover ofAgricultural Land "

Table 2.2. Companies description.

Name	Production	Date of IPO	Listed	Land Bank*, ths ha
Astarta	Sugar beet, wheat, barley.	16.08.2006	WSE	166.0
Kernel Group**	Sunflower, grains	22.11.2007	WSE	285.0
Landkom/Alpcot Agro***	Rapeseed, wheat, corn	22.11.2007	LSE/SSE***	65.9
MHP**	Grain, livestock, eggs, chickens	08.05.2008	LSE	155.0

Source: Companies' websites, IPO Placement Reports, BG Capital (2010).

Notes: * estimates as of the end of 2012. ** Companies with political connections. *** Landkom was acquired by Alpcot Agro on January 27, 2012. Alpcot Agro is traded on Stockholm Stock Exchange. Alpcot Agro stock data is used for events happened in 2012 ("02oct2012" and "20nov2012"), while for events happened prior to 2012 Landkom stock data is used.

Table 2.3. CAR estimation results for event window [0;+2].

Company	Event: Prolonged				Event: Not Prolonged		
	23dec2008	22dec2009	21dec2011	20nov2012	02mar2011	07apr2011	02oct2012
Astarta	-0.118***	-0.081***	0.111	0.017	-0.012	-0.024***	0.002
p-value	0.000	0.000	0.233	0.698	0.211	0.000	0.363
Kernel	-0.011	-0.003	0.032**	-0.030	-0.023**	-0.024	0.025
p-value	0.421	0.956	0.019	0.115	0.026	0.625	0.405
Landkom	0.003	-0.005*	0.026	-0.013	-0.004	0.051	-0.024
p-value	0.924	0.059	0.916	0.911	0.807	0.217	0.681
MHPC	-0.135***	-0.076	-0.048*	-0.004***	-0.004	-0.037**	0.013
p-value	0.002	0.591	0.068	0.001	0.875	0.050	0.211

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Two-tailed p-value of a standard t-test is reported.

Table 2.4. CAR estimation results for portfolio of companies.

Event	Event: Prolonged				Event: Not Prolonged		
	23dec2008	**22dec2009**	**21dec2011**	**20nov2012**	**02mar2011**	**07apr2011**	**02oct2012**
[-0; +2]	-0.056**	-0.038*	0.030	-0.011	-0.011***	-0.008	0.004
p-value	0.019	0.092	0.357	0.765	0.000	0.136	0.709

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Two-tailed p-value of a standard t-test is reported.

Figure 2.1. CAR/AR estimation for portfolio of companies.

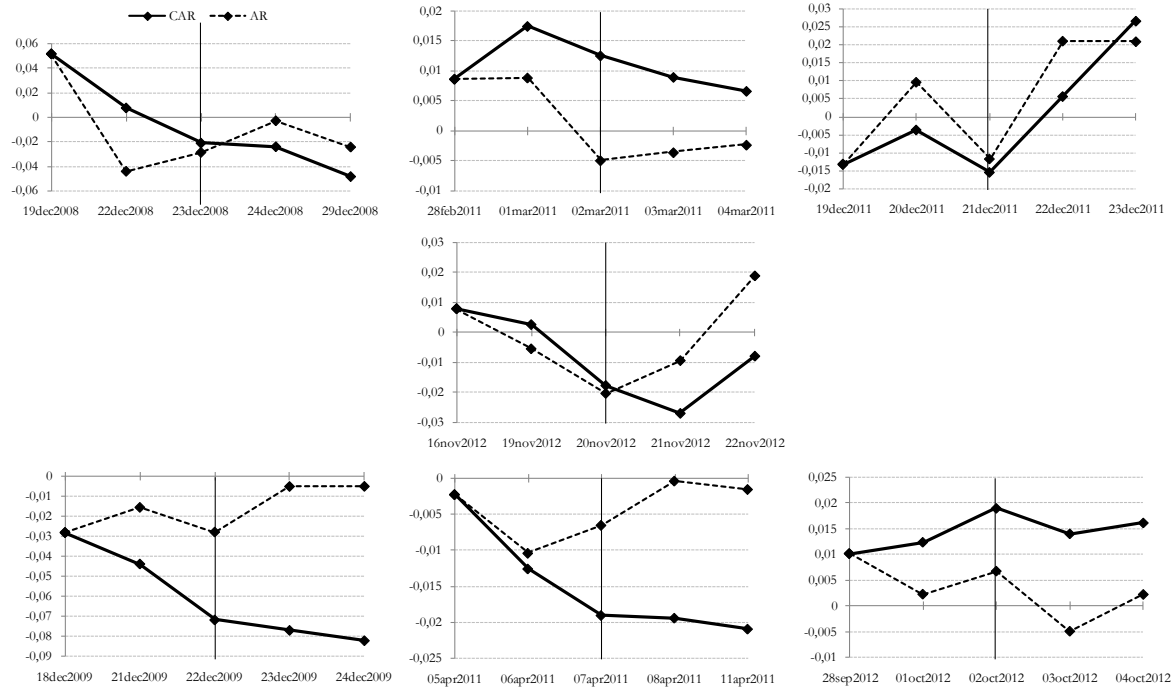


Table 2.5. Results of dummy regression approach. All "Prolong" category events pooled together.

AR	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
prolong_all	-0.023	-0.023	-0.063	-0.026	-0.062	-0.018	-0.030	-0.026
	(-1.36)	(-1.35)	(-1.47)	(-1.04)	(-1.55)	(-1.02)	(-1.32)	(-1.04)
land		-0.00001	-0.00001		-0.00001			
		(-1.07)	(-1.10)		(-1.08)			
prolong_all*land			0.0002		0.0002			
			(1.18)		(0.92)			
prolong_all*connections				0.0061	-0.0064			
				(0.18)	(-0.15)			
prolong_all*connections_before2010						-0.019		-0.011
						(-0.40)		(-0.22)
prolong_all*connections_after2010							0.027	0.024
							(1.22)	(0.96)
observations	5245	5245	5245	5245	5245	5245	5245	5245

Notes: T-statistics is in parenthesis. *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Fixed effects regressions with robust standard errors clustered at the company level. Dependent variable is abnormal returns.

Table 2.6. Results of dummy regression approach. "Prolong" category events separated before and after 2010.

AR	Panel I					Panel II				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
prolong_before2010	-0.029	-0.030	0.075***	-0.021	0.089***					
	(-1.21)	(-1.21)	(3.01)	(-1.41)	(2.52)					
prolong_after2010						-0.016	-0.016	-0.121***	-0.030	-0.030
						(-0.49)	(-0.47)	(-2.53)	(-0.47)	(-0.46)
land		-0.00003	-0.00003		-0.00003		-0.00001	-0.00001		-0.00001
		(-1.51)	(-1.50)		(-1.50)		(-1.06)	(-1.12)		(-1.07)
prolong_before2010*land			-0.0008***		-0.0008***					
			(-3.15)		(-3.40)					
prolong_after2010*land								0.0005***		-0.0003**
								(2.32)		(-2.05)
prolong_before2010*connections				-0.016	-0.022					
				(-0.33)	(-1.09)					
prolong_after2010*connections									0.028	0.029
									(0.44)	-0.45
observations	5245	5245	5245	5245	5245	5245	5245	5245	5245	5245

Notes: T-statistics is in parenthesis. *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Fixed effects regressions with robust standard errors clustered at the company level. Dependent variable is abnormal returns.

Table 2.7. Results of dummy regression approach. "Don't prolong" category events.

AR	Panel I					Panel II				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
don't_prolong_all	-0.001	-0.001	-0.026***	-0.008***	-0.026**					
	(-0.36)	(-0.22)	(-2.32)	(-3.57)	(-2.03)					
don't_prolong_laws						0.001	0.002	-0.037***	-0.012*	-0.035***
						(0.12)	(0.19)	(-5.94)	(-1.82)	(-4.33)
land		-0.00001	-0.00001		-0.00001		-0.00001	-0.00001		-0.00001
		(-1.07)	(-1.10)		(-1.10)		(-1.08)	(-1.11)		(-1.11)
don't_prolong_all*land			0.0001***		0.0001					
			(2.37)		(1.55)					
don't_prolong_laws*land								0.0002***		0.0001***
								(5.34)		(3.20)
don't_prolong_all*connections				0.014***	0.003					
				(4.65)	(0.40)					
don't_prolong_laws*connections									0.026***	0.011**
									(3.88)	(2.23)
observations	5245	5245	5245	5245	5245	5245	5245	5245	5245	5245

Notes: T-statistics is in parenthesis. *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Fixed effects regressions with robust standard errors clustered at the company level. Dependent variable is abnormal returns.

Table 2.8. CAR estimation results for "09dec2011" event.

Event window	Astarta	Kernel	Landkom	MHPC	Portfolio
[-0;+0]	-0.015	-0.047**	-0.0001	-0.037	-0.025**
p-values	0.509	0.020	0.999	0.219	0.026

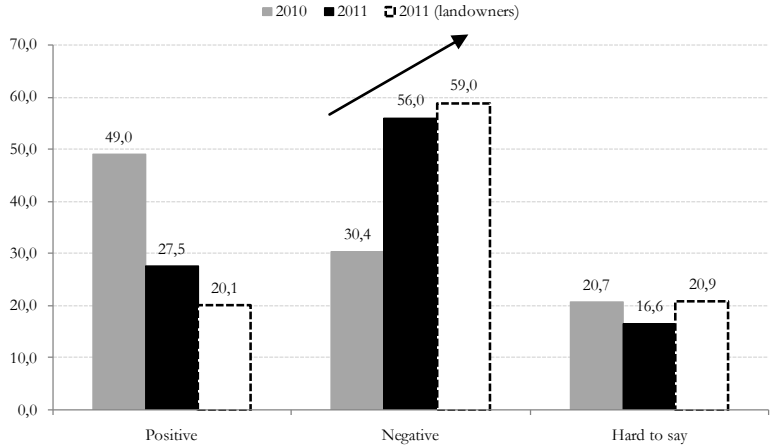
Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Two-tailed p-value of a standard t-test is reported. P-value of portfolio is a p-value of a rank test (see discussion in Appendix 2.E for more details on this issue).

Table 2.9. Results of dummy regression approach for "09dec2011" event.

AR	(1)	(2)	(3)	(4)	(5)
09dec2011	-0.027***	-0.026***	-0.002	-0.010*	-0.005
	(-2.67)	(-2.70)	(-0.14)	(-1.82)	(-0.82)
land		-0.00003	-0.00003		-0.00003
		(-1.49)	(-1.48)		(-1.48)
09dec2011*land			-0.0001***		-0.00003
			(-2.68)		(-1.01)
09dec2011*connections				-0.034***	-0.030***
				(-5.47)	(-5.51)
observations	4445	4445	4445	4445	4445

Notes: T-statistics is in parenthesis. *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Fixed effects regressions with robust standard errors clustered at the company level. Dependent variable is abnormal returns.

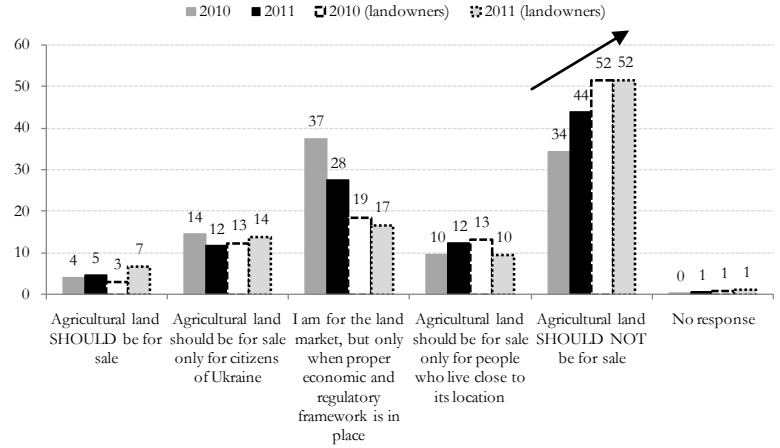
Figure 2.2. Attitudes towards elimination of the moratorium, %.



Source: ISNASU (2010, 2011) Assessment of land reform in Ukraine. Institute of Sociology of National Academy of Sciences of Ukraine for State Land Resource Agency of Ukraine as part of the World Bank project. Accessed February 20, 2012. http://zemreforma.info/index.php?option=com_content&view=article&id=512%3A-2011-&catid=67%3A2011-03-27-17-18-44&lang=uk

Notes: Years 2010 and 2011 correspond to small farm owners; year 2011 (dashed border line) correspond to landowners.

Figure 2.3. Attitudes towards creation of the land market, %.



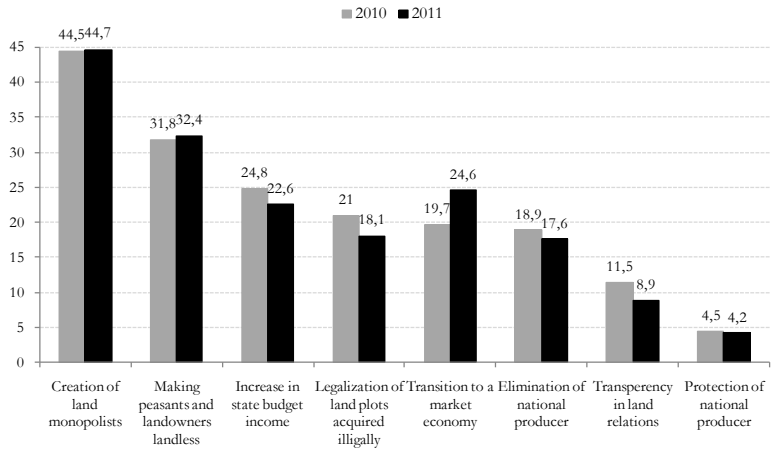
Source: ISNASU (2010, 2011) Assessment of land reform in Ukraine. Institute of Sociology of National Academy of Sciences of Ukraine for State Land Resource Agency of Ukraine as part of the World Bank project. Accessed February 20, 2012. http://zemreforma.info/index.php?option=com_content&view=article&id=512%3A-2011-&catid=67%3A2011-03-27-17-18-44&lang=uk

Notes: Years 2010 and 2011 (series with solid border line) correspond to small farm owners; years 2010 and 2011 (series with dashed border lines) correspond to landowners.

2.9. Appendices (2.A-2.F)

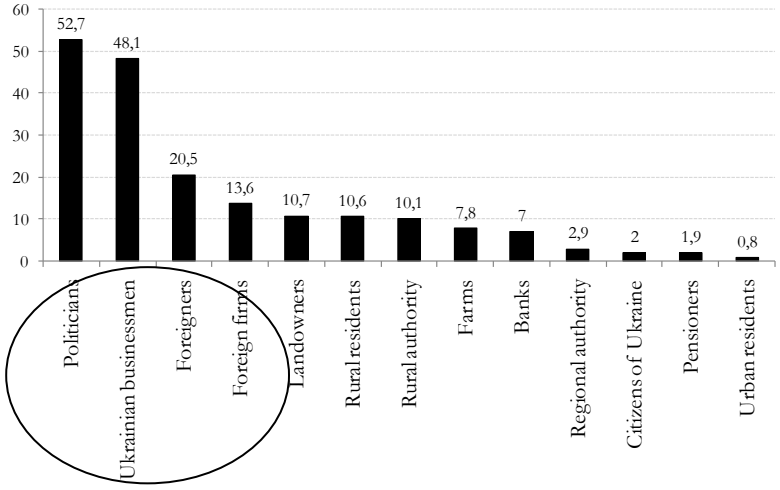
Appendix 2.A. Attitudes towards elimination of the moratorium of landowners and small farm owners.

Figure 2.A1. Opinion of small farm owners about the aim of elimination of the moratorium, %.



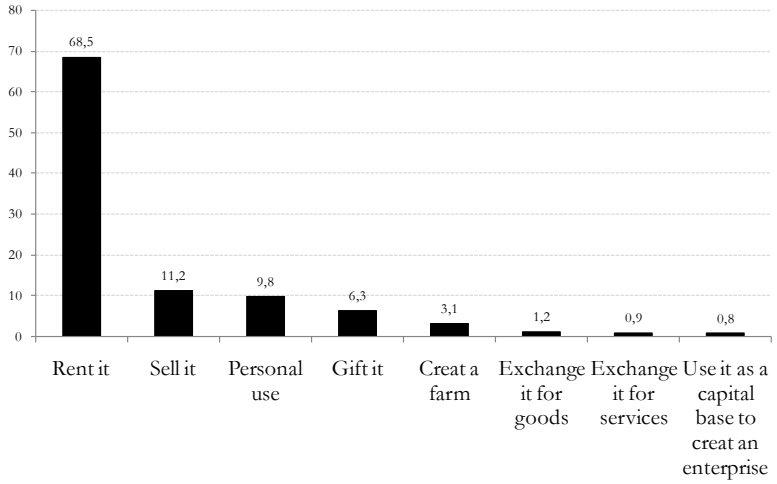
Source: ISNASU (2010, 2011) Assessment of land reform in Ukraine. Institute of Sociology of National Academy of Sciences of Ukraine for State Land Resource Agency of Ukraine as part of the World Bank project. Accessed February 20, 2012. http://zemreforma.info/index.php?option=com_content&view=article&id=512%3A-2011-&catid=67%3A2011-03-27-17-18-44&lang=uk

Figure 2.A2. Opinion of landowners about who the most interested in elimination of the moratorium is, % (2011).



Source: ISNASU (2010, 2011) Assessment of land reform in Ukraine. Institute of Sociology of National Academy of Sciences of Ukraine for State Land Resource Agency of Ukraine as part of the World Bank project. Accessed February 20, 2012. http://zemreforma.info/index.php?option=com_content&view=article&id=512%3A-2011-&catid=67%3A2011-03-27-17-18-44&lang=uk

Figure 2.A3. Opinion of landowners about what they would do with their land plots if the moratorium is eliminated, % (2011).



Source: ISNASU (2010, 2011) Assessment of land reform in Ukraine. Institute of Sociology of National Academy of Sciences of Ukraine for State Land Resource Agency of Ukraine as part of the World Bank project. Accessed February 20, 2012. http://zemreforma.info/index.php?option=com_content&view=article&id=512%3A-2011-&catid=67%3A2011-03-27-17-18-44&lang=uk

Appendix 2.B. Political and socio-economic situation in Ukraine.

Figure 2.B1. Corruption Perception Index.

Source: Transparency International (2011) Corruption Perception Index. Accessed February 20, 2012. http://www.transparency.org/policy_research/surveys_indices/cpi

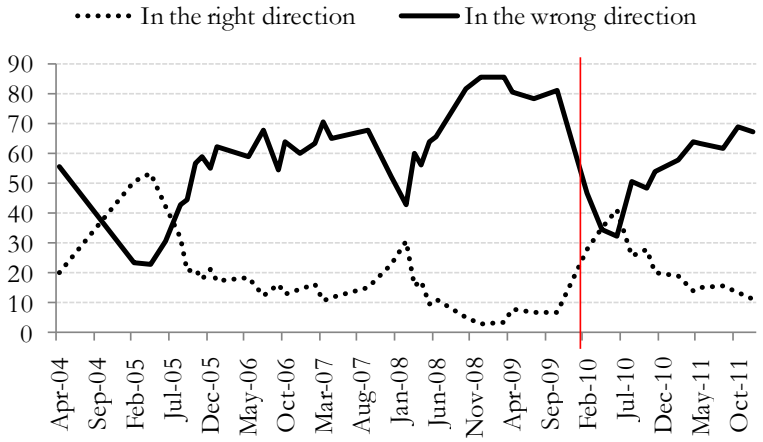
Notes: Maximum score of the index is 10. The higher the index, the less corruption is in the country. The vertical line indicates the time when current President of Ukraine was elected and a new political 'regime' came to power.

Figure 2.B2. Index of Economic Freedom.

Source: Heritage Foundation (2011) Index of Economic Freedom. Accessed February 20, 2012. http://www.heritage.org/index/default

Notes: The index comprises 10 factors that are believed to affect economic freedom. Among them are business, trade, fiscal freedom, property rights, freedom from corruption etc. Maximum score is 100 that represents maximum freedom.
The vertical line indicates the time when current President of Ukraine was elected and a new political 'regime' came to power.

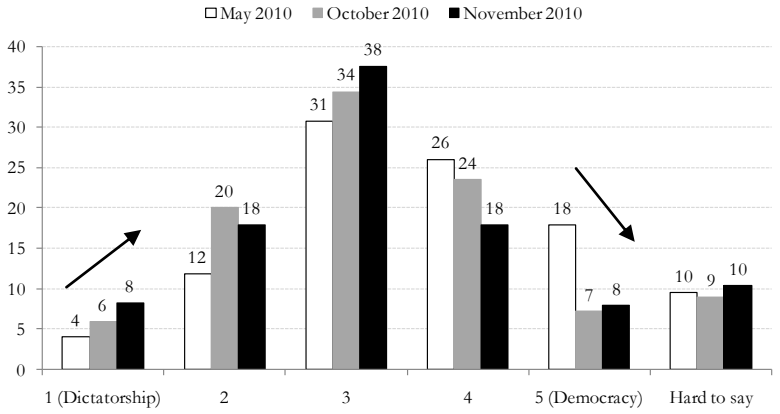
Figure 2.B3. National survey results on the direction of reforms in Ukraine.



Source: Razumkov Center (2011) Survey on the direction of reforms in Ukraine. Accessed February 20, 2012. http://www.uceps.org/ukr/poll.php?poll_id=66

Notes: The vertical line indicates the time when current President of Ukraine was elected and a new political 'regime' came to power.

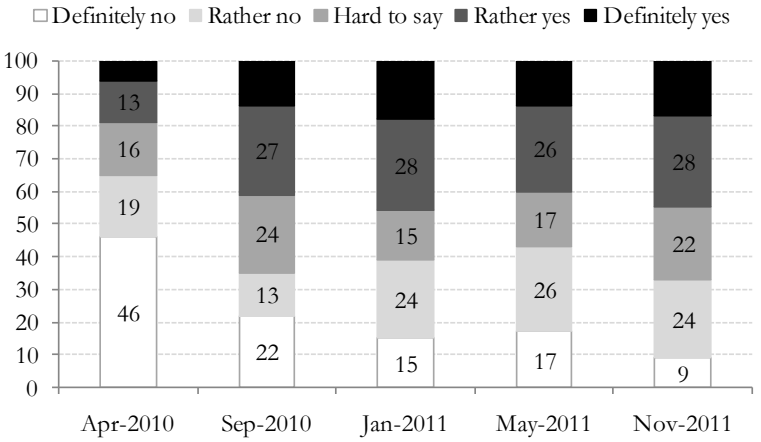
Figure 2.B4. National survey results on the level of democracy in Ukraine.



Source: Razumkov Center (2010) Survey on the level of democracy in Ukraine. Accessed February 20, 2012. http://www.uceps.org/ukr/poll.php?poll_id=562

Notes: People were asked to estimate the level of democracy in Ukraine on a scale from 1 (dictatorship) to 5 (democracy).

Figure 2.B5. National survey results on whether the level of freedom of speech in Ukraine has been decreasing since 2010 Presidential elections.



Source: Rating Group (2011) National survey on dynamics of freedom of speech. Sociological group "Rating". Accessed February 20, 2012. http://ratinggroup.com.ua/upload/files/RG_svoboda_slova_112011.pdf

Appendix 2.C. Description of indices.

Name	Description
UKX	A capitalization-weighted index of the 100 most highly capitalized companies traded on the London SE
WIG	A total return index which includes all companies listed on the main market of Warsaw SE
OMX	A market value-weighted index that consists of the 30 most-traded stock classes traded on Stockholm SE

Source: Bloomberg, web-sites of corresponding stock exchanges.

Appendix 2.D. CAR estimation for individual companies.

Company	Event: Prolonged				Event: Not Prolonged			Event: Prolonged				Event: Not Prolonged		
	23dec2008	22dec2009	21dec2011	20nov2012	02mar2011	07apr2011	02oct2012	23dec2008	22dec2009	21dec2011	20nov2012	02mar2011	07apr2011	02oct2012
	[-2;+2]							[-1;+2]						
Astarta	-0.136***	-0.162***	0.109	-0.007	-0.013	-0.048***	0.029*	-0.145***	-0.105***	0.160*	-0.002	-0.0019	-0.041***	0.011
p-values	0.009	0.000	0.388	0.797	0.524	0.000	0.100	0.000	0.000	0.071	0.940	0.915	0.000	0.767
Kernel	-0.032	-0.051	0.043**	-0.034*	0.015	-0.031	0.010	-0.1136	-0.0085	0.028	-0.035*	-0.0214	-0.0313	0.017
p-values	0.826	0.445	0.034	0.087	0.736	0.499	0.173	0.254	0.877	0.145	0.058	0.121	0.497	0.277
Landkom	0.036	-0.029	0.034	-0.003	0.011	0.052	-0.023	0.0155	-0.0338	0.031	-0.017	0.0057	0.0464	-0.018
p-values	0.260	0.334	0.880	0.978	0.524	0.230	0.676	0.581	0.214	0.893	0.872	0.743	0.296	0.756
MHPC	-0.099	-0.099	-0.079***	0.014	0.013	-0.057***	0.032	-0.193***	-0.0807	-0.060***	-0.001	0.0095	-0.048***	0.015
p-values	0.504	0.447	0.001	0.615	0.634	0.001	0.510	0.000	0.550	0.017	0.790	0.743	0.006	0.261
	[-1;+1]							[-1;+0]						
Astarta	-0.109***	-0.084***	0 .156**	-0.018	-0.004	-0.033***	0.011	-0.081***	-0.053***	0.148***	-0.021	0.001	-0.027***	0.007
p-value	0.000	0.000	0.049	0.360	0.834	0.002	0.736	0.002	0.000	0.003	0.213	0.956	0.005	0.488
Kernel	-0.106	-0.008	0.009	-0.037***	-0.018	-0.056***	0.003	-0.097	0.027	0.004	-0.022*	-0.003	-0.028**	0.024
p-value	0.297	0.887	0.408	0.001	0.211	0.002	0.048	0.369	0.475	0.720	0.059	0.639	0.034	0.447
Landkom	0.032***	-0.033	-0.054	-0.083	0.003	0.045	-0.040	0.017**	-0.030	-0.151	-0.068	0.014***	0.001	-0.038
p-value	0.001	0.205	0.808	0.137	0.877	0.315	0.407	0.045	0.269	0.350	0.251	0.004	0.945	0.454
MHPC	-0.149***	-0.071	-0.035	0.000	0.020	-0.025***	0.035	-0.129***	-0.118	-0.010	0.002	0.004	-0.013	0.038
p-value	0.001	0.620	0.122	0.091	0.409	0.010	0.660	0.000	0.278	0.439	0.502	0.860	0.166	0.744
	[-0;+0]							[-2;+1]						
Astarta	-0.0541	-0.0290	0.099***	-0.002	-0.0095	-0.0086	-0.002	-0.099*	-0.140***	0.104	-0.023	-0.015	-0.040***	0.029*

Cont'd

Company	Event: Prolonged				Event: Not Prolonged			Event: Prolonged				Event: Not Prolonged		
	23dec2008	22dec2009	21dec2011	20nov2012	02mar2011	07apr2011	02oct2012	23dec2008	22dec2009	21dec2011	20nov2012	02mar2011	07apr2011	02oct2012
p-value	0.194	0.382	0.000	0.673	0.641	0.688	0.724	0.058	0.000	0.415	0.215	0.458	0.000	0.100
Kernel	0.0055	0.0318	0.008	-0.017***	-0.0052	-0.0207	0.032	-0.024	-0.050	0.024	-0.037**	0.018	-0.055**	-0.004
p-value	0.877	0.348	0.688	0.000	0.818	0.346	0.454	0.871	0.454	0.129	0.028	0.682	0.031	0.939
Landkom	0.0043	-0.0014	-0.156***	-0.064	0.0045	0.0052	-0.045	0.052***	-0.028	-0.051	-0.068	0.008	0.051	-0.045
p-value	0.926	0.973	0.000	0.201	0.871	0.851	0.304	0.000	0.341	0.808	0.308	0.648	0.241	0.325
MHPC	-0.0700	-0.1136	0.002	-0.001	-0.0095	-0.0018	0.035	-0.055	-0.089	-0.054**	0.015	0.024	-0.034***	0.051
p-value	0.462	0.214	0.960	0.671	0.627	0.914	0.641	0.715	0.506	0.017	0.685	0.300	0.000	0.862
	[-0;+1]							**[-2;+0]**						
Astarta	-0.082***	-0.059***	0.107	0.001	-0.014***	-0.015***	0.002	-0.072	-0.110***	0.097	-0.026*	-0.010	-0.033***	0.025
p-value	0.002	0.000	0.242	0.876	0.002	0.000	0.771	0.195	0.000	0.469	0.094	0.642	0.002	0.853
Kernel	-0.003	-0.003	0.013***	-0.032***	-0.020**	-0.048***	0.011	-0.016	-0.016	0.019	-0.021	0.033	-0.027	0.017
p-value	0.813	0.965	0.000	0.000	0.035	0.000	0.835	0.922	0.807	0.243	0.162	0.392	0.141	0.342
Landkom	0.019*	-0.005***	-0.059	-0.078	-0.006	0.05	-0.046	0.037***	-0.025	-0.148	-0.054	0.019***	0.006	-0.044
p-value	0.062	0.012	0.815	0.117	0.676	0.206	0.289	0.007	0.421	0.355	0.445	0.000	0.525	0.346
MHPC	-0.090**	-0.066	-0.023	-0.002*	0.007	-0.013	0.032	-0.035	-0.137	-0.029*	0.017	0.008	-0.022***	0.054*
p-value	0.070	0.683	0.377	0.064	0.797	0.168	0.402	0.828	0.182	0.103	0.779	0.692	0.010	0.059

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level.

Appendix 2.E. CAR estimation for portfolio of companies.

Event	Event: Prolonged				Event: Not Prolonged		
	23dec2008	**22dec2009**	**21dec2011**	**20nov2012**	**02mar2011**	**07apr2011**	**02oct2012**
[-0; +0]	-0.029	-0.028	-0.012	-0.020*	-0.005	-0.006	0.007
p-value	0.321	0.401	0.718	0.0648	0.574	0.565	0.568
[-0; +1]	-0.0315	-0.0333	0.009	-0.029***	-0.008***	-0.007	0.002
p-value	0.220	0.145	0.777	0.007	0.000	0.262	0.887
[-1; +1]	-0.075**	-0.049***	0.0003	-0.035***	-0.017**	-0.008	0.004
p-value	0.036	0.013	0.981	0.009	0.048	0.837	0.706
[-1; +2]	-0.010***	-0.054**	0.040	-0.016	-0.002	-0.019**	0.006
p-value	0.003	0.013	0.198	0.633	0.872	0.042	0.535
[-1; +0]	-0.072***	-0.044***	-0.002	-0.026*	0.004	-0.017***	0.009**
p-value	0.000	0.000	0.919	0.086	0.777	0.000	0.048
[-2; +2]	-0.048	-0.082***	0.027	-0.008	0.007	-0.021**	0.016
p-value	0.561	0.001	0.481	0.818	0.665	0.024	0.205
[-2; +1]	-0.024	-0.077***	0.006	-0.027	0.009	-0.019**	0.014
p-value	0.774	0.000	0.864	0.249	0.552	0.030	0.285
[-2; +0]	-0.021	-0.072***	-0.015	-0.018	0.013	-0.019***	0.019***
p-value	0.812	0.000	0.488	0.472	0.359	0.007	0.006

Notes: P-values of t-test are reported. *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level.

Appendix 2.F. CAR estimation results for "09dec2011" event.

Event window	Astarta	Kernel	Landkom	MHPC	Portfolio
[-0;+1]	0.004	-0.088***	0.012	-0.030	-0.026
p-values	0.913	0.000	0.322	0.502	0.278
[-1;+1]	0.030	-0.086*	0.016	0.009	0.019
p-values	0.422	0.063	0.118	0.893	0.513
[-2;+2]	-0.009	-0.057	0.030***	0.009	-0.007
p-values	0.864	0.408	0.002	0.885	0.848
[-0;+2]	-0.015	-0.079	0.018*	-0.033	-0.027
p-values	0.662	0.144	0.083	0.402	0.238
[-1;+2]	0.011	-0.077	0.022**	0.005	-0.009
p-values	0.805	0.187	0.023	0.935	0.787
[-1;+0]	0.012	-0.045	0.004	0.002	-0.007
p-values	0.769	0.360	0.330	0.983	0.876
[-2;+1]	0.010	-0.066	0.024**	0.013	-0.005
p-values	0.823	0.312	0.017	0.840	0.893
[-2;+0]	-0.008	-0.025	0.012*	0.005	-0.004
p-values	0.861	0.679	0.075	0.936	0.920

Notes: *** - significant at 1% level; ** - significant at 5% level; * - significant at 10% level. Two-tailed p-values of a standard t-test is reported.

Chapter 3

Impact of Political Regime Shifts on Stock Returns of Oligarch Firms[44]

3.1. Introduction

During the last eight years Ukraine experienced several shifts in political power (henceforth political regime shifts). The Orange Revolution, which started in late 2004 as a reaction to massive falsifications of results of the Presidential elections, brought to power Viktor Yushchenko. The 2010 Presidential elections, however, resulted in Viktor Yanukovych, the rival of Yushchenko in 2004, becoming the President of Ukraine. Finally, the arrest of the former Prime Minister and one of the main figures behind the Orange Revolution, Yuliya Tymoshenko, in August 2011 was an alarming sign for

[44] The work in this chapter was carried out jointly with Natalia Zaderey.

the international community, and many observers interpreted this arrest as an evidence of a shift from democracy to autocracy.

The way a politically connected company reacts to important political events like regime shifts gives one an understanding of how important political connections are and allows estimating the financial consequences of such shifts. This chapter investigates the link between the three abovementioned political events and the stock returns of companies that belong to politically powerful businessmen, the oligarchs.

The Ukrainian stock market is one of the most volatile stock markets among emerging economies. From January 2004 to December 2007 the main market index, the PFTS, increased by a factor of 14 making it the world fastest growing index. Thereafter it fell more than twice in the second half of 2008. High growth came back in early 2010 and lasted until May 2011, but it was driven by local rather than by international players. Since May 2011 till August 2012 the Ukrainian stock market fell by 60%, thus becoming the worst performing stock market globally. Despite historical high returns, international investors now treat Ukraine quite

cautiously. The high political risk is the main reason for this caution. Most of the blue chips, which are actively traded on Ukrainian stock exchanges, are stocks of firms with politically powerful owners (i. e. oligarchs). Knowing the value of these firms' connections is crucial for investors' valuations of these companies.

In our research we use a market model to analyze the impact of three events on the performance of oligarchs' companies. These events were, to a certain degree, unexpected as in 2004 no one expected the Revolution to break out and in 2010 there were almost equal chances for Yuliya Tymoshenko and Viktor Yanukovych to come to power. The surprise effect of the 2004 and 2010 election results reduces the anticipation effect[45] in our estimation strategy.

The main objective of our research is to identify the losers and winners of political regime shifts in 2004 and 2010, i. e. to find out which oligarchs' companies benefit from the Orange Revolution and from the come-back of Yanukovych in 2010. Also we want to understand the

[45] An anticipation of an event can bias results of an event study, because then markets have time prior to the event to adjust to it. And hence, parameters of the market model estimated in the estimation window can absorb information about the event results.

impact, if any, of the imprisonment of the major opposition leader on the valuation of companies that belong to Ukraine's richest people. We consider the following industrial groups: those close to the Orange party - Industrial Union of Donbass (Serhiy Taruta), Finance and Credit (Kostiantyn Zhevago); those close to Viktor Yanukovych - System Capital Management (Rinat Akhmetov), TAS (Serhiy Tihipko); and a politically neutral one – Pryvat Group. We hypothesize that pro-Orange industrial groups could have benefited from the Orange revolution. And the transition from President Yushchenko to President Yanukovych could have increased the value of pro-Yanukovych groups. Campaign contributors could have obtained preferential access to privatization, bank loans, VAT refunds etc, while opposition businessmen could have faced the risks of re-privatization and repressive regulations. For example, Viktor Pinchuk, whose father-in-law Leonid Kuchma was the President of Ukraine until January 23, 2005, in 2004 together with Rinat Akhmetov privatized the steel plant Kryvorizhstal. However, these businessmen had to re-sell the plant to the state after the Orange Revolution. Moreover, in 2011 when

Yanukovych came in power, several firms of Kostiantyn Zhevago reported raids which resulted in important documents being seized by the state security guards.

The key question of numerous country specific research papers about the political connections is how much value political connections bring to a business. According to some recent studies, when businessmen gain political power the value of their companies increases significantly (Mara Faccio, 2006; Thomas Ferguson and Hans-Joakim Voth, 2008; Eitan Goldman et al., 2009; Michael Cooper et al., 2010). Results of these papers suggest that political connections add significantly to a company's value. However, most of these studies were conducted in the framework of developed economies with strong legal systems.

The impact of political connections on firms' valuation in a developing context was estimated by several economists as well. Raymond Fisman (2001) analyzed the impact of news on stock returns of Indonesian companies linked with the Sukharto regime. He discovered that rumours about Sukharto's health problems significantly affected companies affiliated to him and his family. As a reaction to negative news,

stock returns of connected firms decreased 23 percentage points more than returns of non-connected counterparts.

In another developing country, like Russia, the impact of political connections seems to be significant as well. The paper by Benjamin Maury and Eva Liljeblom (2009) investigates the impact of a political regime shift on valuation of oligarch companies. The authors used panel data on listed Russian firms and Tobin's q ratio as a measure of firms' value. They found that the shift from President Yeltsin to President Putin increased the value of oligarch-controlled companies. Goriaev and Sonin (2005) analyzed government actions against the oil company Yukos in 2003. They determined how sensitive the companies were to news related to Yukos and found that Yukos news had significant impact on non-transparent oil companies.

Contrary to previously mentioned studies, research of Joseph Fan et al. (2007) does not support the hypothesis that political connections add value to companies. Having analyzed performance of 625 listed Chinese firms, the authors found that stock returns of firms with politically connected CEOs underperformed

their counterparts' returns by 30% during three-year period after the IPOs. Authors explain such a situation by the bad quality of corporate governance, accounting, and low professionalism of the boards.

As for the Ukrainian context, there are a couple of related studies on the value of connections. Christopher Baum et al. (2008) explored political connections in Ukrainian banking system. Authors came to a conclusion that politically affiliated banks in 2003-2005 had lower interest rate margins and higher capitalization. Pelykh (2008) investigated the influence of news on stock returns of Ukrainian oligarch companies. He used a market model to determine the relationship between positive and negative news and daily stock returns. Companies of the richest Ukrainian, Rinat Akhmetov, appeared to be the most sensitive to news.

Although there are many papers on the value of political connections, this chapter contributes to existing literature by following the same oligarch companies over a long period of time and estimating their financial reaction to several political regime shifts. This allows for a more coherent and robust estimation of the value of

political loyalties in the framework of a developing country with a fast changing political and legal environment.

The rest of the chapter proceeds as follows. Next section provides the background of the political situation in Ukraine and gives a brief introduction to Ukrainian oligarchs. Then the data and methodology are described. Finally, estimation results are discussed and conclusions are made.

3.2. Political Background

3.2.1. Political expectations in 2004 and 2009

In 2004 the Prime Minister of Ukraine was Viktor Yanukovych. Being supported by the President of Ukraine at the time, Leonid Kuchma, and having all the state's administrative resources at his disposal, he was the favourite of the 2004 Presidential elections. His only serous rival was Viktor Yushchenko, a very popular opposition leader. In August 2004 the Kyiv International Institute of Sociology reported the following survey results: 46.3% of respondents thought that Yanukovych

would become the next President. Only 16.5% believed in Yushchenko's victory. According to the Democratic Initiatives survey, 38% of Ukrainians were ready to support Yushchenko in the second round, while 34% were ready to support Yanukovych. Moreover, 65% of respondents considered Yanukovych to be a privileged candidate. Other surveys showed similar results. Ukrainians wanted Yushchenko to win an honest competition, but very few believed in this scenario. In mid-October Yushchenko's level of support in the second round was 37.1%, Yanukovych's – 41.9%. As elections approached, more and more people bet on Yanukovych. Yushchenko, on the other hand, was having very serious health troubles, possibly as the result of a poisoning. On November 10, 2004 the Central Elections Committee officially announced the results of the first round of the Presidential elections: Yushchenko received 39.87% votes, Yanukovych - 39.32%. The results of the second round, officially announced on November 24, 2004, were in favour of Yanukovych (he received 49.46% votes, Yushchenko – 46.61%). These results caused massive protests throughout the country which gave rise to the Orange

Revolution. Yushchenko and Tymoshenko along with other opposition politicians asked people to go out on the streets and express their mistrust in the second round results and demand re-elections. Hundreds of thousands people every day for almost a month were protesting all over the country against the falsifications of elections. Being pressed by the public, the Parliament appointed a new day for the re-elections. On December 21, 2004, the Razumkov Centre announced the results of an opinion poll: the level of support of Yushchenko and Yanukovych was 53% and 42%, respectively. Re-elections, conducted on December 26, ended up with Yushchenko's victory. He became the new President of Ukraine and Yuliya Tymoshenko – the Prime Minister.

During 2005-2010 there was a lot of tension inside the Orange political team. Tymoshenko was dismissed from her post in autumn 2005, while Yushchenko was losing his popularity. At the end of 2007 Tymoshenko became the Prime Minister again and during 2009-2010 she influenced public sentiments by making populist budget decisions. For example, according to a statement of the President's Administration, in December, 2009 the Pension Fund organized a mail campaign in which

pensioners were explained that they got a pension increase thanks to the Government. Besides, Tymoshenko had the power to suppress the pro-Yanukovych businessmen while she was the Prime Minister. In April, 2009 Tymoshenko initiated an investigation of the Dniproenergo's privatization by Rinat Akhmetov. In May, 2009 she shut off gas supplies to chemical plants controlled by Dmytro Firtash.

According to the Razumkov Centre in November 2009, 35.2% of Ukrainians were ready to support Yanukovych in the second round of 2010 Presidential elections and only 29.3% were ready to support Tymoshenko. People were disappointed in the Orange leaders, because not much has changed since 2004 despite all the promises made at the time of the Revolution.

In 2010, Yanukovych and Tymoshenko were the only candidates that had a real chance to win the elections. Serhiy Tihipko and Arseniy Yatsenyuk were the other two politicians with significant ratings. Although they did not have a chance to win the elections, they could profit from the redistribution of their supporters' votes after the first round results in which Tihipko received

13% of votes and Yatsenyuk 7% of votes[46]. In the first round of 2010 elections Yanukovych received 35.32% of votes, while Tymoshenko – 25.05%. In the second round, supporters of Yushchenko and Yatsenyuk were loyal to Tymoshenko, while votes of Tihipko's voters were split between Yanukovych and Tymoshenko. The outcome of the second round was not obvious, however. For example, in January 2010 the Ukrainian Institute of Social Research forecasted equal votes for Tymoshenko and Yanukovych. The former head of Yushchenko's administration Viktor Baloga predicted the victory of Yanukovych as soon as in November 2009. Meanwhile Tihipko said that he might be the Prime Minister both under Tymoshenko's and Yanukovych's presidency. Nevertheless, based on the second round results, Yanukovych became the new President of Ukraine.

Since that time, several opposition leaders have been prosecuted for their political decisions. Among them was Yuliya Tymoshenko who was arrested on August 5,

[46] According to Ukrainian legislation, only the top two candidates with the highest share of votes after the first round can participate in the second round of elections.

2011. This was a complete surprise for Ukrainian society. Although political prosecutions started earlier, no one, including investors, expected she would be really arrested. Politologists did not also believe that Tymoshenko would be arrested. Volodymyr Fesenko, director of the Centre of Applied Political Studies "Penta", said on June 22, 2011, that Tymoshenko could at maximum receive a suspended sentence. It was inly on July 22, 2011, that Tymoshenko's attorney Serhiy Vlasenko warned about her possible arrest. The Member of the Parliament Volodymyr Oliynyk made a rebuttal of this statement on behalf of the Party of Regions, saying that Vlasenko's claims were groundless. Hence, up to the very last moment it was not obvious whether Tymoshenko would be arrested.

3.2.2. Oligarchs and their political loyalty

In our research we consider 8 politically powerful businessmen/business groups and their listed companies' stocks that have been frequently traded during the time of our events of interest (see Table 3.1

and Table 3.2). Politically powerful businessmen are selected according to the following criteria: all of them are billionaires or multimillionaires from the top-20 of the Forbes richest list and they have all occupied official positions that are related to a certain political party. Viktor Pinchuk was included into the sample, as he is a relative of the former President of Ukraine, Leonid Kuchma. Pryvat is included too as it is a very influential business group in Dnipropetrovs'k region.

Oligarchs tend to be engaged actively in Ukrainian politics, because this is a good way of protecting their businesses and lobbying favourable laws. Usually oligarchs are the main sponsors/donors of political campaigns, especially during elections times. According to official reports of elections campaigns, Yuliya Tymoshenko and Viktor Yanykovych spent UAH[47] 290 million and UAH 322 million, respectively[48], on 2010 elections. Money was transferred to the special electoral account by contributors. According to the Committee of Voters of Ukraine unofficial expenditures were much

[47] 10 UAH ~ 1 EUR or 8 UAH ~ 1 USD

[48] The reports were published in the governmental newspaper "Uriadovyy Kur'yer" on February 25, 2010.

higher: the preparation to the first round cost these two candidates around USD 400 million. Ukrainian legislation does not oblige candidates to declare main campaign contributors. However, the loyalties become evident when the elected President starts to grant preferential treatment to certain business groups.

Table 3.1 describes a sample of oligarchs considered in this research.

According to Forbes richest list-2012[49], Rinat Akhmetov with total assets amounting up to USD 16 billion is the richest person in Ukraine and one of 20 richest Europeans. He has businesses in many industries: metallurgy, mining and power generation, development and construction, media, finance, agriculture, machine-building etc. Born in Donetsk, Akmetov has always supported his fellow-countryman Viktor Yanukovych. There is a common belief that Akhmetov was Yanukovych's sponsor during the 2004 and 2009 elections campaigns. Not being a public person, Akhmetov has neither confirmed nor denied these claims. However, the attitude of authorities

[49] http://www.forbes.com/billionaires/list/

during the Yanukovych office is more than favourable to this businessman. In 2005, however, during the Orange elite regime, offices of Ahmetov's holding SCM were unexpectedly checked by militia and he was called in for a statement to the Ministry of Internal Affairs.

After 2010, when Yanukovych became the President, Ahmetov's political contributions seem to have brought generous dividends. His holding DTEK got preferential access to privatization of power-generating companies Kyivenergo and Zakhidenergo. Also, in December 2011 DTEK and the Ministry of Energy and Coal Industries signed agreements on the 49-year concession of property complexes of state-owned coal mining companies Rovenky Anthracite and Sverdlov Anthracite. Now DTEK controls over 60% of coal and power- generating market in Ukraine. However, during the last couple of years Akhmetov has no longer been as close to Yanukovych as he used to be in mid-2000s. Now Yanukovych favours his son Oleksandr who has businesses in banking, development, and construction.

Viktor Pinchuk has assets in metallurgy, oil and gas, finance, media, and transport. He increased his business empire significantly during the presidency of his father-

in-law Leonid Kuchma in 2002-2004. After the Orange party came to power, his newly acquired metallurgical plant Kryvorizhstal was reprivatized. Since then Pinchuk stays away from big politics. Yet, he demonstrates loyalty to Viktor Yanukovych. In his interview for Forbes[50], Pinchuk said that he has always voted for Yanukovych in all of the elections which the latter participated in as a candidate.

Though the owners of ISD, metallurgical tycoons Serhiy Taruta and Vitaliy Haiduk, are also from Donetsk, they have supported the Orange party since 2004. At some point Vitaliy Haiduk even became a politician. During Yushchenko's presidency he was the Secretary of the Security Council and an advisor to the Prime Minister Tymoshenko. However, as the 2008 financial crisis hit ISD, the company faced a serious drop in demand and was not able to repay its external debt. In late 2009 Haiduk sold his stake to his partners, and in January 2010 Taruta sold his controlling stake of ISD to Russian investors.

The Pryvat group has interests in finance, metallurgy,

[50] Forbes Ukraine, April 2012.

oil and gas, transport and energy distribution. Ihor Kolomoyskyy is responsible for relations with the Government. He adheres to an opportunistic position. According to politologists, he funded campaigns of Yuliya Tymoshenko (BYUT), Mikhail Brodsky (Yabluko), and Oleh Tyahnybok (Svoboda). Ambiguity in political loyalties brings long-term benefits, however, as Pryvat has managed to keep operational control over Ukrnafta, the leading oil and gas company in Ukraine, under different Governments. Though more than 50% of this company belongs to the state, in practice it is run by the Pryvat managers.

The main asset of Kostiantyn Zhevago is Ferrexpo which includes the Poltava ore mining complex. Besides metallurgy Zhevago has interests in machine building, finance, pharmaceuticals, and chemicals. The billionaire is a consistent Tymoshenko supporter. Since 2006 Zhevago is a member of the Parliament and a delegate from the BYUT party. Unlike many of his fellows, Zhevago stayed with BYUT even when BYUT was having hard times, he did not switch to Yanukovych's Party of Regions. In summer 2011 during the Presidency of Yanukovych his companies were visited by armed

state security squads.

Serhiy Tihipko was the Vice-Prime Minister in pro-Yanukovych government during 2010-12. In 2004 he was in charge of the election campaign of Yanukovych. Tihipko's growing business empire comprises assets in financial sector, machine building, agriculture, metallurgy, and real estate.

Yuriy Kosyuk and Andriy Verevs'kyy are oligarchs of the new generation, whose success is not based on the privatization of Soviet enterprises. Both businessmen own the largest agricultural holdings in Ukraine (Myronivsky Hliboproduct and Kernel, respectively) and try to adhere to western standards of transparency. Myronivsky Hliboproduct (MHP) is the leader on a poultry market and Kernel is the biggest sunflower oil producer. Kernel went public in 2007 and MHP in 2008. The former is listed on the Warsaw Stock Exchange and the latter - on the London Stock Exchange.

Table 3.2 lists all of the oligarch's companies. Not all of them, however, are used in this research, because some companies' stocks have low liquidity. For some events in our sample, certain companies (like NFER,

ZFER etc) did not have enough trade quotes to be qualified for the inclusion in our sample.

3.3. Sample description and data

Table 3.3 presents a sample of events selected for our research. There are 3 main blocks of events: those connected to the 2004 Presidential elections and the consequent Orange Revolution, those connected to the 2010 Presidential elections, and finally, the arrest of Yuliya Tymoshenko. All of the elections in Ukraine happen on Sundays, so the actual election days cannot be included in the sample. However, preliminary results of the elections are already available the next day after the ballot with around 80-90% of all the votes being counted and reported to the Central Elections Committee. So we include in our sample all of the days that follow elections days. For example, for the 2004 elections, the first round took place on October 31. Hence, November, 1 is in the sample.

Official elections results, however, are usually announced a couple of days after the elections. These

days are also included in the sample and are believed to have the biggest impact on the value of oligarchs' companies, as sometimes the difference between the votes given to the candidates can be really tiny and amount to just hundredths of a percent. Like in the case of the 2004 elections first round results when Viktor Yanukovych won over Viktor Yushchenko with only 0.64% advantage. The second round results of the 2004 elections were officially announced on November 24, according to which Yanukovych won with 49.46% of the votes over Yushchenko who had only 46.61% of the votes. As the reaction to massive falsifications, thousands of people went out on the streets to protest against Yanukovych being officially announced the winner of the elections. This gave a start to the Orange Revolution that resulted in re-elections. Yushchenko won re-elections with 51.99% of votes over 44.20% of votes of Yanukovych.

The first round of 2010 elections took place on January 17. 9 out of 18 candidates received more than 1% of the votes. The top candidates were Yanukovych with 35.32% of votes and Tymoshenko with 25.05% of votes. According to Ukrainian Law, only the top two

candidates with the highest share of votes can participate in the second round elections. Hence, during the first round of elections investors of oligarchs' companies could have reacted to either the victory of Yanukovych and Tymoshenko over the others, or to other candidates losing to the top two. However, during the second round of elections investors should have reacted either to Yanukovych winning with 48.95% of votes or to Tymoshenko losing with 45.47% of votes[51]. Central Elections Committee made an official announcement that Yanukovych became the President of Ukraine on February 15, 2010.

The last event in the sample is the arrest date of Yuliya Tymoshenko that happened on August 5, 2011. This event might have been perceived as a revenge of Yanukovych over his long-term political rival. Hence, companies close to Yanukovych might have gained in value and companies close to Tymoshenko might have lost. However, this event might have been also perceived as the start of authoritarian regime in Ukraine. This could have caused pessimistic

[51] Remaining 5.58% of votes were "against all candidates", an option usually available in the ballot.

expectations of investors, probably even those trading stocks of firms close to Yanukovych.

Appendix 3.D contains a series of graphs that depict the reaction of market indices like PFTS, UX and FTSE to the events in our sample. These indices showed positive performance during the events of 2004 elections, while they showed negative trends after the arrest of Tymoshenko.

Table 3.4 contains a description of our sample of companies used in the research for different event types. Out of all stocks of affiliated companies we selected 19 liquid stocks (for robust results there should be at least 200 quotes prior to an event for each stock). The lowest number of companies is for the 2004 elections study. This is because many of the firms were not public at the time and started trading their shares on stock exchanges only later on. Also, some companies are eliminated from the sample if they do not have a trade quote on the day of the event or one-two days before/after the event. The interval of more than two days before/after the event is undesirable to use, because there are many other events happening at the time of elections that could bias our results. And finally,

ownership structure of companies under study changed during 2004-2011. For example, Akhmetov acquired a stake in Dniproenergo only in 2007, so DNEN is not in 2004 elections sample. Meanwhile Pinchuk sold some of his assets in 2008.

We also construct two control portfolios: one - of Ukrainian companies that do not have obvious political connections; and the other one – of international peers of our companies from the main sample. This is done in order to compare the reaction of companies with and without political connections to events in our sample, and Ukrainian vs. International companies.

Control sample of Ukrainian firms without political connections consists of 25 liquid stocks. These public companies are from different industries and are listed on Ukrainian and international exchanges. The description of this sample is given in Table 3.5. The main criteria for the inclusion in a control portfolio are that a company is affiliated in Ukraine, does not have obvious political connections, and is traded during the event dates in our sample. MMKI is included only in the 2004 elections sample, because it was bought by Akhmetov in 2010.

Control portfolio of international peers consists of 8 sub-portfolios for different industries, namely: pipes, steel, coal, iron ore, agriculture, energy, machinery, and oil. It contains 47 companies in total. The selection procedure was done by interviewing experts and investment analysts. The decision whether to include a company in the sample was based on the experts' opinions and their knowledge of the industries; plus the company should have had enough trade quotes during our events. The detailed description of the companies included in the control portfolio of international peers can be found in Appendix 3.A.

3.4. Model specification and estimation strategy

The methodology used in this research is the one described by Campbell, Lo and MacKinlay (1997). An efficient stock market reacts to news; and therefore, the impact of political events should be captured by the unexplained residual of the market model, called abnormal returns:

$$r_t = \alpha + \beta r_t^M + \gamma S_t^+ + \delta S_t^- + \omega r_t^I + e_t \qquad (1)$$

where r_t is the daily stock return, r_t^M is the market portfolio return, S_t^+ is a dummy variable for company-specific positive events unrelated to 2004, 2010 elections results, and Tymoshenko's arrest (i. e. dividend payment announcements, M&A, credit rating upgrades, financials and investment plans announcements, new capacities introduction etc). S_t^- is a dummy variable for company-specific negative events. S_t^+ (S_t^-) takes the value of 1 if there is a positive (negative) event on a given date for a specific company, and 0 otherwise. r_t^I is the return on an industry specific index (for example, the brent oil index for oil companies, wheat index for agricultural companies etc). e_t is the abnormal return. Market return, r_t^M, is the return on either PFTS, UX, DAX, WIG or FTSE-100 Indices (for Ukrainian companies) depending on an exchange where a security is traded. For example, Ferrexpo is traded on London Stock Exchange, therefore, FTSE-100 is used to estimate

the model (1) for this stock. Also model (1) includes the return on PFTS/UX Index along with the market index for all the Ukrainian companies traded on the foreign exchanges: so model (1) for Ferrexpo, for example, includes not only FTSE-100, but UX Index as well. In this case, our abnormal returns do not capture the effect of Ukrainian general events, but the effect of political connections the company has. Refer to Appendices 3.A, 3.B, and 3.C for a detailed description of indices and which companies they are used for in estimation.

Dummy variables S_t^+ and S_t^- are included into the model (following Guidolin and La Ferrara (2007)) in order to ensure that abnormal returns estimated from equation (1) capture only investors' reaction to the elections results and Tymoshenko's arrest, and they do not reflect any other company specific information. Returns on a market and industry-specific indices capture expected market trends, while a dummy for company-specific events captures expectations about a performance of a specific company. Hence, the model includes the terms for both general market and company-specific expectations. The model is estimated

with both OLS and GARCH, however, only OLS results are reported, as both techniques give very similar results. GARCH is used along with OLS, as it is supposed to give more efficient estimates when dealing with financial data.

The assessment of the impact of events in our sample on performance of oligarchs' companies is performed by examining the cumulative abnormal returns, $CAR_t = \sum_{j=t_0}^{t} e_j$, in the event windows. *An event window* is an interval $[t_2; t_3]$ around the event date T^* (see Figure 3.1), over which markets are expected to adjust to political events which are Presidential elections of 2004 and 2010 and the arrest of Tymoshenko in case of our study. *An estimation window* is an interval $[-t_0;+t_1]$ before an event T^* over which the market model is estimated.

In total, there are nine event windows defined for this research, specifically: [-2;+2], [-2;+1], [-2;+0], [-1;+2], [-1;+1], [-1;+0], [-0;+2], [-0;+1], and [-0;+0]. This is more or less standard length of event windows used in event studies. Longer length of event windows may not be optimal for this type of political event studies, because there are too many other "noisy" events happening

around our events of interest that could "contaminate" our estimation. Event windows that include a couple of days before an event allow for testing the hypothesis of investors incorporating their expectations about the event into their decision making process some time prior to the event actually happening. In case of elections results, this could be a normal process, as usually many public opinion polls and surveys are taken before the elections, and they give an idea who has the highest chances to win the elections.

The length of estimation windows is typically 200 trading days. The smallest length of estimation window is 65 trading days for AZST for 2004 elections events. This is due to the lack of trading data. The interval $[t_1;t_2]$ is 7-9 trading days depending on the event window.

Event study methodology is performed in a sequence of steps. First, the parameters of the market model $(\hat{\alpha};\hat{\beta})$ are estimated in the estimation window. Then, e_t is predicted in the event window:

$$e_t = r_t - \hat{\alpha} - \hat{\beta} r_t^M - \hat{\gamma} S_t^+ - \hat{\delta} S_t^- - \hat{\omega} r_t^I$$

Finally, CAR is calculated:

$$CAR_t = \sum_{j=t_0}^{t} e_j$$

If CAR_t is positive and statistically significant, it suggests that events in our sample have a positive impact on abnormal returns of the oligarchs companies. If CAR_t has a negative sign and is statistically significant, it suggests that events influence abnormal returns of the oligarchs' companies in a negative way. If CAR_t is statistically equal to zero, then 2004 and 2010 Presidential elections and Tymoshenko's arrest have no effect on stock prices of the companies under consideration. The magnitude of CAR_t in our study is an estimate of political connections.

An alternative estimation strategy is to perform the so-called "dummy regressions" undertaken by Guidolin and La Ferrara (2007 and 2010). It consists in performing the pooled sample OLS estimation with residuals clustered at a company level and company specific fixed effects:

$$e_t = \delta + \gamma I_t + \varepsilon_t$$

where e_t is abnormal returns predicted from the market model (1) and I_t is a dummy variable taking the value of 1 over the event window and zero otherwise. The coefficient γ measures the effect of events associated with 2004, 2010 elections and Tymoshenko's arrest on the returns of oligarchs' companies. If γ appears to be significant, then it means that events under consideration affect the value of oligarchs' companies.

3.5. Estimation results

3.5.1. 2004 Presidential Elections

There are only 3 companies in the sample: AZST (Azovstal that belongs to Rinat Akhmetov), UNAF (Ukrnafta that is a part of Pryvat Group), and NITR (INTERPIPE Nyzhniodniprovsky Tube-Rolling Plant that belongs to Viktor Pinchuk). Rinat Akhmetov has been always a strong supporter of Yanukovych and his

political campaigns; hence, it is a priory expected that investors of AZST react positively to the victory of Yanukovych in the first round of 2004 elections; however, their enthusiasm may be decreasing with the start of the Orange Revolution and the subsequent re-elections results. The same expectations apply to investors of NITR, as Viktor Pinchuk has been always open about his political support for Yanukovych. As for the UNAF, Pryvat Group has been always neutral in their political support, hence, reaction of investors of this company to events connected with 2004 elections can go in either direction. Appendix 3.E contains a table with expected reactions of investors of oligarchs' companies to the events in our sample.

Table 3.6 reports results of the CAR estimation for the event window [-1;+0] that includes two trading days: a day before an event and the day of an event itself. Appendix 3.F contains results of CAR estimation for the rest of event windows. NITR has trade quotes only for "29dec2004", when the preliminary results of re-elections were announced. UNAF do not have trade quotes for the last event in Table 3.6, which is the announcement of official re-election results. AZST

misses CAR results for “24nov2004” event which is the start date of the Orange Revolution, and “03dec2004” event - the announcement of the re-elections by the Supreme Court.

Table 3.6 also contains CAR estimation results for the control portfolio of Ukrainian companies without political connections. Appendix 3.G contains the rest of the estimation results for this portfolio. “24nov2004” event is missing from Table 3.6, because none of the companies in the portfolio has trade quotes around this date. CAR results for the control portfolio show the negative reaction of the market to the 2004 elections events. This is not surprising as it has been the period of high instability.

Results of CAR estimation for the portfolio of international peers of companies in our main sample are presented in Appendix 3.H.

As for the companies from our main sample, AZST controlled by Rinat Akhmetov, experienced a significant loss of its value due to “01nov2004”, “10nov2004”, and “27dec2004” events. As discussed before, the difference between the number of votes given to Yushchenko and Yanukovych during the first round was really small and

amounted to only hundredth of a percent. Hence, up until the last moment, it was not obvious who is going to win in the end. Reaction of investors of AZST to preliminary ("01nov2004") and official ("10nov2004") first round results might be connected to this small difference between the votes of the two candidates. Investors of AZST, the owner of which was also one of the main sponsors and financial drivers of Yanukovych's campaign, might have anticipated that such a small difference between the votes could have caused a victory of Yushchenko in the final round of elections. Hence, they could have felt like assets of close to Yanukovych oligarchs were not as valuable anymore. As a result, cumulative abnormal returns of AZST during the two days of event window decreased by 8.8 percentage points for "01nov2004" event and by 8.6 percentage points for "10nov2004" event. Incidentally, these decreases of CAR are much smaller than those of the control portfolio: the overall market reaction is minus 25.7 percentage points for "01nov2004" event and minus 10.6 percentage points for "10nov2004" event.

Returns of Azovstal also experienced significant decrease due to the announcement of preliminary re-

elections results on December 27, 2004. This time the difference between the votes given to Yushchenko and Yanukovych was really high and amounted to almost 10% in favour of Yushchenko. Basically, at that point it was obvious that Yanukovych lost the elections. And as a result, cumulative abnormal returns of AZST fell by 11.9 percentage points over the course of two days of the event window, while CAR of the control portfolio fell by only 1.8 percentage points (the magnitude of this fall was almost 10 times less than the fall of AZST returns). We also see no significant effect of the last two events in Table 3.6 on performance of CAR of AZST. CAR of this company for the "29dec2004" and "10jan2005" events are not significant in any of the estimated event windows and the coefficients on CAR change their signs depending on the event window (see Appendix 3.F). These results are probably due to the fact that investors of this firm have incorporated expectations about the victory of Yushchenko in the re-elections after the preliminary results and, hence, the effect of an official announcement of the re-elections results does not show any more in the CAR performance. Incidentally, AZST results for

"29dec2004" and "10jan2005" events are opposite to the results of the control portfolio. Moreover, CAR of AZST dropped less than control portfolio's returns at the time of the first round of elections and dropped more during the second round events (both suggest political influence). At the same time, during the second round events returns of AZST drop sharply on the days of events, while they do not drop further in the next days; incidentally, returns of control firms do drop further a couple of days afterwards.

As for UNAF, this company has significant cumulative abnormal returns for three events in the sample: "24nov2004" which is a start of the Orange Revolution and the official announcement of Yanukovych as the winner of the second round elections; "03dec2004" when the Supreme Court allowed the re-elections; and "29dec2004" when preliminary results of re-elections were announced. The company, controlled by the Pryvat Group lost almost 7 percentage points of its value due to the start of the Orange Revolution. Investors of UNAF reacted negatively to this event, probably being afraid of the possible consequences of this kind of revolutions for

their businesses. Although the Orange Revolution was very peaceful and no harm was caused neither to people nor to material objects, on the day it started no one knew what was going to happen next and whether army forces would be involved. Also, because Ukrnafta was partly state-owned, investors might have been frightened of the crisis in the state management. Hence, it is understandable why UNAF returns experience this significant fall in value due to this event.

Investors of UNAF reacted positively when the Supreme Court allowed the re-elections in Ukraine on December 3, 2004. Over the course of two days of the event window, the company's abnormal returns increased by 5.5 percentage points. The Supreme Court's decision basically ended the Orange Revolution and, apparently, UNAF's investors were quite happy about that.

Abnormal returns of Ukrnafta increased by almost 11.8 percentage points as a reaction to "29dec2004" event, when it became obvious that Yushchenko was going to be the next President of Ukraine. This meant that investors of UNAF considered this to be good news for the company and, as a result, its value went up.

Interestingly, results of the control portfolio for this event are negative and significant. Moreover, all of the UNAF results are opposite to those of the control portfolio results that supports our hypothesis that political connections play a very important role in financial performance of the companies

NITR experienced a significant loss in its value due to the "29dec2004" event when preliminary results of re-elections became available. This is consistent with our a priory expectations about the way investors of Pinchuk's company would react to this event. Abnormal returns of the company decreased almost 556 percentage points as the probability of Yushchenko to become the new President went up during the event window. This large fall in NITR's value can be associated with a high risk of re-privatization faced by Pinchuk's companies like Kryvorizhstal and Nikopol Ferroalloy Plant after the Orange team comes to power. These companies were privatized in 2003-2004 by Pinchuk thanks to his father-in-law, Leonid Kuchma, who was also the President of Ukraine at the time. Representatives of the Orange team were saying that once at power, they would initiate re-privatization of

'illigally' privatized companies. And they actually managed to fulfill this promise. Hence, investors of Pinchuk's companies were very pessimistic about the future value of his assets, when it became obvious that Yushchenko would be the next President of Ukraine.

Overall, CAR estimation results suggest that investors of oligarchs' companies react to political events in accordance with political preferences of oligarchs themselves. The difference between the results of control portfolio and politically connected firms from our sample suggests that political connection do matter and investors take them into account when making investment decisions.

We also tried a dummy regression approach in order to estimate the overall market reaction to the events in the sample. "24nov2004", "03dec2004", and "10jan2005" dropped out of the estimation as only one company has trade quotes for each of these events. The dummy regression with residuals clustered at a company level and company specific fixed effects is performed on two samples: the full sample that contains AZST, UNAF and NITR; and the reduced sample that consists of AZST and NITR only. The reduced sample is used in order to

test the hypothesis that companies' owners which are close to Yanukovych should experience a negative performance due to the outburst of the Orange Revolution and the subsequent victory of Yushchenko in the elections. Because the full sample consists of companies that are expected to react differently to the 2004 events, an average effect of those events is most probably going to be close to zero. Estimation for the reduced sample can only be performed for "29dec2004" event, as NITR has trade quotes only for this event. Table 3.7 contains the results. The full sample results show significance of only one coefficient on the "10nov2004" event. The combined effect of the announcement of the first round election results on AZST and UNAF is 8.6 percentage points and it is negative. As it can be seen in Table 3.6, this value of the coefficient in the dummy regression coincides with the CAR value for AZST for this event. Other coefficients in Table 3.7 are not significant which is not surprising given different political preferences of owners of the companies under consideration. The reduced sample results, however, are not significant as well.

3.5.2. 2010 Presidential Elections

A sample of companies used for 2010 elections events is much larger than that for 2004 elections events. Companies of 8 oligarchs are included into the estimation. All of them, except for NVTR, have trade quotes on the days of all events from the 2010 sample. Shares of NVTR were not traded during "18jan2010" and "19jan2010" events. Among all of the oligarchs, only Tihipko was a candidate himself during 2010 elections. Results for other event windows can be found in Appendix 3.I. Results for other event windows for the portfolio of Ukrainian companies without political connections and international peers can be found in Appendices 3.J and 3.K, respectively.

Abnormal returns of Akhmetov's company AZST increased as a reaction to the first round results announcement (events "18jan2010" and "19jan2010"), when Yanukovych gained the majority votes. Over the course of two days of the event window, the value of AZST increased by 1.8 percentage points and by 2.1 percentage points as a reaction to the announcement of preliminary and final first round results, respectively

(see column 1 and 2 of Table 3.8). Investors of AVDK, however, reacted negatively to "18jan2010" and "10feb2010" events. This could either mean that investors of this company expected Yanukovych to win with larger difference in votes between him and Tymoshenko, or investors perceived that having Yanukovych as the President could have meant the riskiness of Ukrainian assets going up. At the time experts were expecting the rule of Yanukovych to be characterized by possible increase in corruption and riskiness of doing business. Hence, the general perception of investors of AVDK could have been very pessimistic about Yanukovych being the President, connections or no connections. Also, shares of AVDK are popular among local investors that have mostly negative perception of political and economic situation in Ukraine during Yanukovych's Presidency, while shares of AZST are traded by foreign players. Interestingly, CARs of the control portfolio are not significant, although the magnitude of the coefficients is much larger than that of AZST.

Investors of DNEN, another Akhmetov's company, reacted positively to "08feb2010" event, when the

preliminary results of the second round became available. The company gained almost 4 percentage points in value over the two days of the event window.

Abnormal returns of ALMK, a company that belongs to ISD, experienced a significant decrease in value as a reaction to "18jan2010" and "10feb2010" events. The value of this company fell by 3.7 percentage points after the first round of elections and by 0.7 percentage points after the second round. This result is consistent with our expectations, because ISD has been supporting Tymoshenko and the Orange party. Abnormal returns of this company were, however, positive as a reaction to the preliminary second round results. This is probably because the preliminary results were showing some positive trends for Tymoshenko at the beginning and one could have believed she could become the next President.

As for the Pryvat Group, we see significant reaction of investors only to the "15feb2010" event, when Yanukovych was officially announced the President. As stated earlier, Yanukovych's rule at the time was expected to be investor unfriendly, therefore, the pessimistic expectations of investors.

Tihipko was an official candidate in the elections and lost the first round with almost 13% of votes. This may explain the loss in value of 6.6 percentage points experienced by KVBZ after the second round of elections.

Abnormal returns of FXPO, a company owned by Zhevago who supported Tymoshenko during the 2010 elections, fell significantly as a reaction to the second round official results. FXPO lost almost 2 percentage points of value due to "10feb2010" event. FXPO's CAR is positive, however, for "15feb2010" event. This is rather unexpected result that can be associated with other factors. On 12 February, 2010, it was announced that Ihor Kolomoyskyy sold his 2.88% stake in FXPO (in March, 2009 he owned more than 10%). These news increased FXPO quotes by 5%. Kolomoyskyy has a reputation of a raider, and his exit has been perceived as positive news for a company.

CAR of Pinchuk's companies do not show any significant performance for 2010 elections except for NVTR reacting negatively to the official announcement of the second round results. Although, Pinchuk is said to be supporting Yanukovych, investors of NVTR

perceive the victory of Yanukovych as negative news for the company.

Abnormal returns of MHPC do not show any significant reaction to the 2010 elections results, while the value of KER increased significantly after the first round results. The owner of KER, Verevs'kyy was a member of BYUT, a political party led by Tymoshenko, at the time and the fact that she made it to the second round of elections was a positive sign for Kernel's investors.

Finally, the control portfolio of Ukrainian companies without obvious political connections does not show any significant results for the 2010 elections (see Appendix 3.J for other event windows results). The same can be said about the portfolio of international peers of our companies (see Appendix 3.K). Hence, investors of companies without political connections do not react as significantly to political events when compared to investors of companies with connections.

Overall, results of CAR estimation are more or less consistent with our apriory expectations. We do get some unexpected results, however, it is hard to determine the exact reason behind them. The only

definite conclusion one can draw from the results of Table 3.8 is that political connections do matter when it comes to financial markets.

As a next step, we decided to perform the same CAR estimation, but for the portfolio of companies for each of the oligarchs. The advantage of doing so is that it allows one to see an average reaction of all investors of a certain oligarch to political events ruling out company or industry specific factors not accounted for by the model (1). If there is more than one company in our sample for an oligarch, we constructed an equally-weighted portfolio of abnormal returns of companies for this oligarch. We resulted with three portfolios: Akhmetov (includes AZST, AVDK, DNEN, and ENMZ), Pinchuk (includes NITR and NVTR) and Zhevago (includes SVGZ and FXPO). Table 3.9 reports results of portfolio estimation for an event window [-1;+0], while results for other event windows can be found in Appendix 3.L.

There is only one significant result for the portfolio estimation. We do not find any significant effect for Akhmetov's and Pinchuk's portfolio. This might be due to the fact that companies in their portfolios either

showed differential reactions to 2010 elections results in Table 3.8 or did not show any significant reaction at all. Abnormal returns of Zhevago's companies, however, on average fell by 1 percentage points due to the official second round results. These results are consistent with political loyalty of this oligarch as he has been supporting Tymoshenko during 2010 elections.

We also performed dummy regressions for the 2010 elections events. Table 3.10 presents the results. Again, we performed estimation on three different samples: pooling together companies of oligarchs close to Yanukovych; to Tymoshenko; and also performing the same estimation on the full sample pooling all the firms together irrespective of their political loyalties. The results suggest that on average companies in all our samples react negatively to the first round results and the preliminary second round results. This is not surprising for the pro-Tymoshenko sample, however, it is rather unexpected for the pro-Yanukovych sample. The magnitudes of the estimates are more negative for the pro-Yanukovych companies if compared to the pro-Tymoshenko sample. Apparently, investors of companies owned by political comrades of Yanukovych

had rather pessimistic expectations about his rule as the new President. Systematically higher decrease in value of the pro-Yanukovych companies if compared to the pro-Tymoshenko firms as a reaction to all 2010 elections events suggests that there is a difference between political connections: it matters who you are connected to, not only whether you are politically connected.

3.5.3. Tymoshenko's arrest

The final event in our sample is the arrest of Yuliya Tymoshenko that happened on August 5, 2011. Companies of 8 oligarchs are included into the sample for this event estimation. Table 3.11 presents CAR estimation results for an event window [-1;+0], while results for other event windows can be found in Appendix 3.M. Estimation results for the portfolio of Ukrainian companies without political connections can be found in Appendix 3.N; while results for the portfolios of international peers are in Appendix 3.O.

This event has a very controversial nature. On one hand, one would expect investors of companies whose

owners were politically loyal to Yanukovych to react positively to this event, on the other hand, investors could have thought of this event as a beginning of authoritarian era in Ukraine, which was not good for the business. According to Table 3.11, only one of Akhmetov's companies reacted positively (ENMZ) to Tymoshenko's arrest, while others – negatively (AZST, AVDK, DNEN). These results could be explained by cooling in relations between Yanukovych and Akhmetov. Besides, investors of pro-Yanukovych companies could have been feeling like Tymoshenko's arrest was not an event that would have brought much value to the companies they were investing in. General perception in investment circles was that this event was a very political step.

In general, the strongest reaction was expressed by investors who traded shares of companies close to Tymoshenko rather than by investors of companies close to other political camps. Indeed, Zhevago's and Kosyuk's companies lost their value due to the event under consideration. Even though, Kosyuk was neutral in political loyalties, investors could have perceived him as connected to Tymoshenko, because in June, 2010

Yuriy Melnyk, the former Minister of Agriculture in Tymoshenko's government, became a member of MHPC board.

Companies of both Pinchuk and Tihipko lost their values as the reaction to the arrest of Tymoshenko. Although the signs of the estimates are quite surprising, the estimates themselves are significant in contrast to the results obtained for the control sample. This suggests that politically connected companies have an advantage if compared to politically unaffiliated firms. The negative sign of CAR for Pinchuk's and Tihipko's firms can be explained by the growing influence of the family business of Yanukovych in Ukraine that makes some oligarchs to be upset. As mentioned before, after Yanukovych became the President of Ukraine, he started growing his family assets and this sometimes came at a cost of infringing upon financial interests of his fellow oligarchs. Also investors were quite pessimistic about Ukraine's future after many political leaders were arrested and prosecuted. This was a signal that business climate in the country would worsen, especially in the light of the fact that Tymoshenko's arrest undermined Ukraine's negotiations with the EU

about the free trade zone. As a consequence, export-oriented companies and their investors were hurt the most.

In general, the magnitude of investors' reaction to the arrest of Tymoshenko is much larger for the control portfolio than for individual companies. The coefficient of the control portfolio is almost 66 percentage points. The magnitude of the coefficients on politically connected firms ranges, however, between 0.1-22 percentage points. Hence, again we find evidence that political connections matter and investors of politically connected companies react to political events differently if compared to companies without political connections.

CAR estimation was also performed for the portfolios of oligarchs companies. Table 3.12 shows its results, while results for other event windows can be found in Appendix 3.P. However, no CAR is significant for this event that suggests that on average investors of companies belonging to a certain oligarch has had zero reaction to Tymoshenko's arrest.

Results of dummy regression approach are presented in Table 3.13. Again, we performed estimation for three samples: pro-Yanukovych, pro-Tymoshenko, and the

full sample. On average Tymoshenko's arrest had no significant impact on the value of companies owned by oligarchs supporting Tymoshenko. However, this event had a negative impact on return of pro-Yanukovych companies. Although this result is quite contradictory, it can be explained by the redistribution of market power performed by Yanukovych and his family.

3.6. Conclusions

This chapter estimates the value of political connections by examining stock performance of oligarchs' companies using event study methodology and a dummy regression approach. Three main blocks of events are examined: 2004 and 2010 Presidential elections and the arrest of the opposition leader Yuliya Tymoshenko. Outcomes of these events had a very high degree of unexpectedness, ruling out the anticipation bias in our estimation.

Estimation is performed for three different samples of companies traded of the stock exchanges: firms owned by the oligarchs, Ukrainian companies that do

not have any political connections, and international peers of oligarch companies. Results for oligarchs' firms differ significantly from the results obtained for Ukrainian and international unaffiliated peers. The magnitude of the impact of the events on oligarchs' companies is significantly different from the magnitude found for the companies without political connections. Also, 70% of estimation results are consistent with our a priory expectations, meaning that in 70% of cases companies' abnormal returns exhibit the sign that is consistent with political loyalty of a company's owner (refer to Appendix 3.E for more details).

Generally, results of our research suggest that there is a high degree of correlation between the way investors react to certain events and political loyalty of oligarchs. And although estimation results are sometimes controversial, they generally suggest that political connections do matter in Ukraine and market players make their investment decisions taking into account information about political loyalty of a company's owner and whether his political connections can be favorable for business under current political circumstances or not.

Table 3.1. Political loyalties of Ukrainian oligarchs.

Oligarch	Value, $ million	Political loyalty	Official position
Rinat Akhmetov	16000	Yanukovych	Member of the Parliament since 2007, the delegate from Party of Regions.
Viktor Pinchuk	4200	Yanukovych	-
Ihor Kolomoyskyy (Pryvat)	3000	Neutral	-
Hennady Boholyubov (Pryvat)	2800	Neutral	-
Oleksiy Martynov (Pryvat)	669	No information	-
Kostiantyn Zhevago	1800	Tymoshenko	Member of the Parliament since 2007, the delegate from BYUT.
Yuriy Kosyuk	1300	Ambiguous	His business-partner is Ihor Tarasyuk was a former Member of the Parliament, the delegate from Yushchenko's party "Our Ukraine", and until 2010 the head of the President's office.
Andriy Verevs'kyy	1000	Ambiguous	Member of the Parliament since 2007, the delegate from BYUT. Switched to the Party of Regions in 2011.
Serhiy Tihipko	989	Yanukovych	The Vice-Prime Minister since March 2010, № 3 in the current electoral list of the Party of Regions.
Serhiy Taruta (ISD)	780	Orange coalition	-
Oleg Mkrtchan (ISD)	780	No information	-
Vitaliy Haiduk (ISD)	495	Tymoshenko	Secretary of the Security Council in 2006-2007, head of Tymoshenko's advisory board.

Source: Forbes, government agencies and other open sources.

Table 3.2. Oligarch companies listed on stock exchanges.

Oligarchs	Public companies	Tickers
Rinat Akhmetov	**Metallurgy. Metinvest Holding:**	
	Azovstal	AZST
	Avdiyiv Cokery Plant	AVDK
	Khartsyzsk Tube Works	HRTR
	Central mining and processing complex (GOK)	CGOK
	Nothern GOK	SGOK
	Inguletsky GOK	IGOK
	Yenakiyevo Metallurgical Plant	ENMZ
	Mariupol Metallurgical Plant (since 2010)	MMKI
	Coal and energy. DTEK holding:	
	DTEK Komsomolets Mine	SHKD
	Dniproenergo	DNEN
	Pavlogradvugillya	PGVL
Viktor Pinchuk	**Metallurgy:**	
	INTERPIPE Nyzhnodniprovsky Tube-Rolling Plant	NITR
	INTERPIPE Novomoskovsk Pipe-Production Plant	NVTR
	Nikopol Ferroalloy Plant	NFER
	Dniprospetzstal (owned it till 2008)	DNSS
	Finance. Ukrsotsbank (till 2008)	USCB
ISD	**Metallurgy:**	
Serhiy Taruta	Dniprovsky Iron and Steel Integrated Works n.a.Dzerzhynsky	DMKD
Vitaliy Haiduk (till 2010)		
Oleg Mkrtchan	Alchevsk Metallurgical Plant	ALMK
	Alchevsk Cokery Plant	ALKZ
Pryvat Group	**Metallurgy:**	
Ihor Kolomoyskyy	Zaporizhzhya Ferroalloy Plant	ZFER
Hennadiy Boholyubov	Marganets GOK	MGZC
Olexiy Martynov	Southern GOK (till end 2007)	PGZK
	Chemicals: Dniproazot	DNAZ
	Oil: Ukrnafta (40%)	UNAF
Kostiantyn Zhevago	**Metallurgy:**	
	Ferrexpo	FXPO
	Poltava GOK	PGOK
	Machinery:	
	Stakhanov Vagon Building	SVGZ
	AvtoKraz	KRAZ
	Pharmaceuticals:	
	KyivMedPreparat	KMED
	Galychfarm	GFARM
	Finance: Bank Finance and Kredit	FIKR
Serhiy Tihipko	**Machinery:** Dneprovagonmash	DNVM
	Kryukiv Vagon Building (until July 2012)	KVBZ
Serhiy Tihipko	**Finance:** TAS Biznesbank	BSST
Yuriy Kosyuk	**Agriculture:** Myronivs'kyy Hliboproduct	MHPC
Andriy Verevs'kyy	**Agriculture:** Kernel	KER

Sources: Companies' data, Agency on Stock Market Infrastructure Development (www.smida.gov.ua), Forbes databases.

Table 3.3. Events in the sample.

Event Date	Event Description
01.11.2004	Preliminary first round elections results
10.11.2004	Official first round elections results
03.12.2004	Supreme Court decision on re-elections
24.11.2004	Start of Orange Revolution and official second round election results
27-29.12.2004	Preliminary re-elections results
10.01.2005	Official re-elections results
18.01.2010	Preliminary first round elections results
19.01.2010	Official first round elections results
08.02.2010	Preliminary second round elections results
10.02.2010	Official second round elections results
15.02.2010	Official announcement that Yanukovych is the President
05.08.2011	Tymoshenko is arrested

Table 3.4. Sample of companies vs. events.

Companies	2004 elections	2010 elections	Tymoshenko's arrest
azst	1	1	1
nitr	1	1	1
unaf	1	1	1
avdk		1	1
dnen		1	1
enmz		1	1
nvtr		1	1
almk		1	1
svgz		1	1
kvbz		1	1
fxpo		1	1
ker		1	1
mhpc		1	1
hrtr			1
cgok			1
shkd			1
sgok			1
alkz			1
mmki			1
Total	3	13	19

Table 3.5. Control sample of Ukrainian companies vs. events.

Companies	2004 elections	2010 elections	Tymoshenko's arrest
utlm	1	1	1
mmki	1		
ceen		1	1
doen		1	1
bavl		1	1
smash		1	1
mzvm		1	1
form		1	1
ltpl		1	1
uscb		1	1
msich		1	1
ast		1	1
dupd		1	1
tr61		1	1
ukr		1	1
maya		1	1
snps		1	1
jkx		1	1
cad		1	1
yask		1	
aisi		1	
glng			1
agt			1
avgr			1
mlk			1
Total	2	20	22

Figure 3.1. Event and estimation windows timeline.

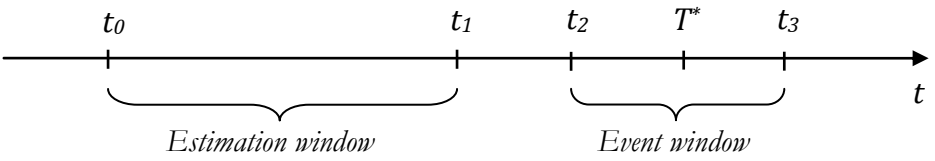


Table 3.6. CAR estimation results for 2004 elections events and event window [-1;+0].

	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005
azst	-0.088***	-0.086**			-0.119***	0.165	0.135
	(-3.167)	(-2.046)			(-4.683)	(0.631)	(0.436)
unaf	0.172	-0.177	-0.070***	0.055***	0.014	0.118***	
	(0.773)	(-1.432)	(-2.548)	(3.110)	(0.162)	(6.736)	
nitr						-5.567***	
						(-3.080)	
control_ua	-0.257**	-0.106**		0.135	-0.018*	-0.057**	-0.081**
	(-3.627)	(-7.016)		(0.634)	(-1.946)	(-3.341)	(-23.38)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level.

Table 3.7. Dummy regression approach results for 2004 elections events.

AR	01nov2004	10nov2004	27dec2004	29dec2004
		Full sample		
Event dummy	-0.179	-0.086**	-0.150	-0.384
t-stat	(-1.370)	(-2.290)	(-0.700)	(-1.500)
obs	3862	3862	3862	5223
		Reduced sample		
Event dummy				-0.668
t-stat				(-0.780)
obs				3006

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Abnormal returns is a dependent variable.

Table 3.8. CAR estimation results for 2010 elections events and event window [-1;+0].

	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
	Akhmetov (Yanukovych)				
azst	0.018***	0.021***	0.008	-0.007	-0.017***
	(9.823)	(13.45)	(0.4847)	(-0.607)	(-2.473)
avdk	-0.064*	-0.058	0.004	-0.013***	-0.019
	(-1.788)	(-1.344)	(0.4068)	(-7.620)	(-0.791)
dnen	-0.062	-0.060	0.039***	0.030	0.020
	(-1.365)	(-1.234)	(10.03)	(0.618)	(0.526)
enmz	0.026	0.028	-0.004	0.006	-0.006
	(1.308)	(1.273)	(-0.469)	(0.3681)	(-0.562)
	ISD (Tymoshenko)				
almk	-0.037***	-0.022	0.008***	-0.007*	-0.013
	(-3.243)	(-0.793)	(14.445)	(-1.637)	(-1.229)
	Pryvat (Neutral)				
unaf	0.070	0.062	-0.019	-0.005	-0.015***
	(1.458)	(1.121)	(-1.289)	(-1.269)	(-25.66)
	Tihipko (Yanukovych)				
kvbz	0.025	0.018	-0.066**	-0.023	-0.024
	(1.272)	(0.664)	(-2.073)	(-0.408)	(-0.45)
	Zhevago (Tymoshenko)				
svgz	0.010	-0.038	-0.012	-0.002	-0.019
	(0.098)	(-0.67)	(-0.369)	(-0.250)	(-0.844)
fxpo	0.000	-0.003	-0.007	-0.019***	0.138**
	(0.0478)	(-0.458)	(-0.445)	(-3.50)	(2.338)
	Pinchuk (Yanukovych)				
nitr	0.027	0.011	-0.019	-0.001	-0.058
	(0.3189)	(0.104)	(-0.686)	(-0.244)	(-0.59)
nvtr			-0.024	-0.073***	0.085
			(-0.604)	(-7.77)	(0.802)
	Kosyuk (Ambiguous)				
mhpc	0.026	0.029	0.019	-0.033	-0.006
	(0.7144)	(0.8588)	(0.6061)	(-0.62)	(-0.84)
	Verevs'kyy (Tymoshenko/Ambiguous)				
ker	0.023***	0.014*	-0.024	-0.015	0.034
	(62.134)	(1.8086)	(-0.886)	(-0.27)	(0.821)
	Control Portfolio (UA)				
control_ua	0.745	0.987	-0.005	0.709	0.958
	(0.298)	(0.544)	(-0.014)	(0.296)	(0.285)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. There is indicated an expected loyalty of an oligarch to a certain political power next to an oligarch's name, in parenthesis.

Table 3.9. CAR estimation results for 2010 elections events and event window [-1;+0] for portfolios of companies.

	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
akhmetov	-0.021	-0.017	0.012	-0.008	-0.005
	(-0.293)	(-0.206)	(0.424)	(-0.401)	(-0.116)
pinchuk	0.027	0.011	-0.022	-0.022	0.014
	(0.112)	(0.036)	(-0.225)	(-0.444)	(1.094)
zhevago	0.005	-0.021	-0.010	-0.010**	0.059
	(0.036)	(-0.298)	(-0.139)	(-2.196)	(1.160)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level.

Table 3.10. Dummy regression approach results for 2010 elections events.

AR	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
	Pro-Yanukovych sample				
Event dummy	-0.039**	-0.040**	-0.039**	-0.032*	-0.020
t-stat	(-1.970)	(-2.170)	(-2.120)	(-1.680)	(-0.820)
obs	7551	7551	7940	7940	7940
	Pro-Tymoshenko sample				
Event dummy	-0.014	-0.018	-0.025*	-0.012	-0.004
t-stat	(-1.480)	(-1.060)	(-1.570)	(-0.660)	(-0.200)
obs	5805	5805	5805	5805	5805
	Full-sample				
Event dummy	-0.023**	-0.028**	-0.032***	-0.021*	-0.013
t-stat	(-2.110)	(-2.330)	(-2.870)	(-1.660)	(-0.840)
obs	14324	14324	14324	14324	14324

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Abnormal returns is a dependent variable. Pro-Yanukovych sample includes azst, avdk, dnen, enmz, nitr, nvtr, kvbz; pro-Tymoshenko sample includes almk, unaf, svgz, fxpo, ker.

Table 3.11. CAR estimation results for Tymoshenko's arrest and event window [-1;+0].

	Akhmetov (Yanukovych)		**Pryvat (Neutral)**
azst	-0.014**	unaf	0.003
	(-2.103)		(1.253)
avdk	-0.041***		**Tihipko (Yanukovych)**
	(-3.254)	kvbz	-0.016***
hrtr	0.001		(-3.132)
	(0.037)		**Zhevago (Tymoshenko)**
cgok	0.006	svgz	-0.023***
	(0.721)		(-9.771)
dnen	-0.031***	fxpo	-0.050
	(-3.946)		(-0.712)
enmz	0.015***		**Pinchuk (Yanukovych)**
	(2.359)	nvtr	-0.221***
shkd	0.024		(-3.920)
	(0.314)	nitr	-0.013***
sgok	0.007		(-2.816)
	(0.345)		**Kosyuk (Ambiguous)**
mmki	0.046	mhpc	-0.069***
	(0.454)		(-3.448)
	ISD (Tymoshenko)		**Verevs'kyy (Ambiguous/Yanukovuch)**
almk	0.015	ker	0.000
	(1.147)		(-0.019)
alkz	0.103		**Control sample (UA)**
	(0.732)	control_ua	-0.658
			(-1.382)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Political loyalty of each oligarch is indicated in the parenthesis next to his name.

Table 3.12. CAR estimation results for Tymoshenko's arrest and event window [-1;+0] for portfolios of companies.

akhmetov	pinchuk	isd	zhevago
0.001	-0.050	0.059	-0.037
(0.023)	(-0.427)	(0.328)	(-0.359)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level.

Table 3.13. Dummy regression approach results for Tymoshenko's arrest.

AR	05aug2011
	Pro-Yanukovych sample
Event dummy	-0.027*
t-stat	(-1.950)
obs	6413
	Pro-Tymoshenko sample
Event dummy	-0.003
t-stat	(-0.180)
obs	2938
	Full sample
Event dummy	-0.006
t-stat	(-0.340)
obs	9390

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Abnormal returns is a dependent variable. Pro-Yanukovych sample includes azst, avdk, hrtr, cgok, dnen, enmz, shkd, mmki, sgok, nitr, nvtr, kvbz; pro-Tymoshenko sample includes almk, alkz, unaf, svgz, fxpo.

3.7. Appendices (3.A-3.P)

Appendix 3.A. Control sample of international peers vs. events.

Industry	Company	Peers	Country	Index	2004 elections	2010 elections	Tymoshenko's arrest
Pipes	HRTR	Maharashtra Seamless	India	SENSEX	1	1	1
	NITR	Maruichi Steel Tube	Japan	TPX	1	1	1
	NVTR	Vallourec	France	CAC	1	1	1
		Tenaris	Italy	FTSEMIB	1	1	1
		Vyksunsky Pipe	Russia	INDEXCF		1	1
Steel	AZST	Novolip-Gdr Regs	Russia	UKX		1	1
	ENMZ	Severstal-Gdr	Russia	UKX		1	1
	MMKI	Evraz Group-Gdr	Luxembourg	UKX		1	1
	ALMK	Magnitogorsk-Gdr	Russia	UKX		1	1
	AVDK	Mechel	Russia	INDEXCF		1	1
	ALKZ	Mechel-Spon Adr	Russia	SPX		1	1
		Sid Nacional	Brazil	IBOV	1	1	1
		Gerdau Sa-Adr	Brazil	SPX	1	1	1
		Steel Authority	India	SENSEX	1	1	1
		Usiminas-Pref A	Brazil	IBOV	1	1	1
		Tata Steel Ltd	India	SENSEX	1	1	1
		Eregli Demir Cel	Turkey	XU100	1	1	1
		Jsw Steel Ltd	India	SENSEX	1	1	1
		Arcelormittal	Luxembourg	AEX	1	1	1
		Posco	South Korea	KOSPI	1	1	1
		China Steel Corp	Taiwan	TWSE	1	1	1
Iron Ore	FXPO	Kumba Iron Ore	South Africa	JALSH		1	1
	CGOK	Mmx Mineracao	Brazil	IBOV		1	1
	SGOK	Bhp Billiton Plc	Britain	UKX	1	1	1
		Vale Sa-Pf	Brazil	IBOV	1	1	1
		Rio Tinto Plc	Britain	UKX	1	1	1
Coal	SHKD	Raspadskaya	Russia	RTSI$		1	
		Tambang Batubara	Indonesia	JCI	1	1	1
		Bumi Resources	Indonesia	JCI	1	1	1
Agriculture	KER	Trigon agri	Russia	SPX		1	1
	MHPC	Cherkizovo Group	Russia	UKX		1	1
		Black earth farming	Russia	INDEXCF		1	1
		Henan Huaying Agri Development Co. Ltd	China	SZASHR		1	1
		Rusgrain Holding	Russia	INDEXCF			1
Energy	DNEN	China power	China	SPX		1	1
		Datang power	China	HSI	1	1	1
		Egco	Thailand	HSI	1	1	1
		Huadian power	China	HSI	1	1	1
		Ntpc	India	SENSEX		1	1
		Tractebel energia	Brazil	IBOV	1	1	1
Machinery	KVBZ	China motor corp	China	TWSE	1	1	1
	SVGZ	Jinxi axle company ltd	China	SHASHR	1	1	1
		Construcciones y Auxiliar de Ferrocarriles	Spain	IBEX	1	1	1
Oil	UNAF	Apache	USA	SPX	1	1	1
		Anadarko	USA	SPX	1	1	1
		Talisman energy	Canada	SPTSX	1	1	1

Appendix 3.B. Description of indices.

Table 3.B1. Description of market indices.

Index	Description
AEX	A stock market index composed of Dutch companies that are traded on Euronext Amsterdam
AS51	Float-adjusted index of 200 largest index-eligible stocks listed on the Australian SE
ATX	The most important stock market index of the Wiener Börse, the largest trading place in the Austrian economy
CAC	A narrow-based, modified capitalization-weighted index of 40 companies listed on the Paris Bourse
DAX	A blue chip stock market index consisting of the 30 major German companies traded on the Frankfurt SE
FTASE	A free float market capitalization weighted index of Greek companies
FTSE-100	A capitalization-weighted index of the 100 most highly capitalized companies traded on the London SE
FTSEMIB	Consists of 40 most liquid and capitalized stocks listed on the Borsa Italiana
HEXP	A modified capitalization-weighted index that contains the same constituents as the HEX Index
HSI	A free-float capitalization-weighted index of selection of companies from the SE of Hong Kong
IBEX	The index is comprised of the 35 most liquid stocks traded on the Spanish Continuous Market
IBOV	A gross total return index weighted by traded volume & is comprised of the most liquid stocks traded on the Sao Paulo SE
CF	A real-time cap-weighted Russian composite index comprised of 30 most liquid stocks
JALSH	A market capitalization weighted index of all listed companies on the Johannesburg SE
JCI	A modified capitalization-weighted index of all stocks listed on the regular board of the Indonesia SE
KOSPI	A capitalization-weighted index of all common shares on the Korean SEs
OMX	A capitalization-weighted index of the 30 stocks that have the largest volume on the Stockholm SE
PFTS	A capital-weighted price index of the 20 major and most liquid equities traded at the PFTS SE
RTSI$	Acapitalization-weighted index that is comprised of stocks traded on the Russian Trading System
SENSEX	A cap-weighted index of companies traded on the Bombay SE
SHASHR	A capitalization-weighted index of all A-shares listed on the Shanghai SE
SPTSX	A capitalization-weighted index of stocks traded on Toronto SE
SPX	Standard and Poor's 500 Index is a capitalization-weighted index of 500 stocks
SZASHR	A capitalization-weighted index of all A-shares listed on the Shenzhen SE
TPX	A capitalization weighted index of all companies listed on the First Section of the Tokyo SE
TWSE	A capitalization-weighted index of all listed common shares traded on the Taiwan SE
UX	A capitalization-weighted index of the 20 major equities traded at the Ukrainian Exchange
WIG	A total return index which includes all companies listed on the main market of Warsaw SE
XU100	A capitalization-weighted index composed of National Market companies of Istanbul SE

Source: Bloomberg, web-sites of corresponding stock exchanges.

Table 3.B2. Description of industrial indices.

Industry	Main sample company	Industrial Index	Description
Agriculture	mhpc	UKAGFEWE Index	UkrAgroConsult Feed Grain Market Index
	ker	UKDPWHUK Index	Ukraine Milling Wheat 11.5% Index
Coal	shkd	API2BOM Index	ARA Steam Coal Index
Iron Ore	fxpo, cgok, sgok	MBFOFO01 Index	Iron Ore 62.5% China CFR Index
Oil	unaf	CO1 Comdty	Brent oil Index
Pipes	nitr, nvtr, hrtr	MBSTCIHR Index	Hot-rolled coil Index
Steel	alkz, avdk, enmz, almk, azst, mmki	MBSTCIBL Index	Export Billet Steel Index

Source: Bloomberg.
Note: No industrial index was used for SVGZ, KVBZ, and DNEN as, according to investment experts, no appropriate industrial index exists for these companies.

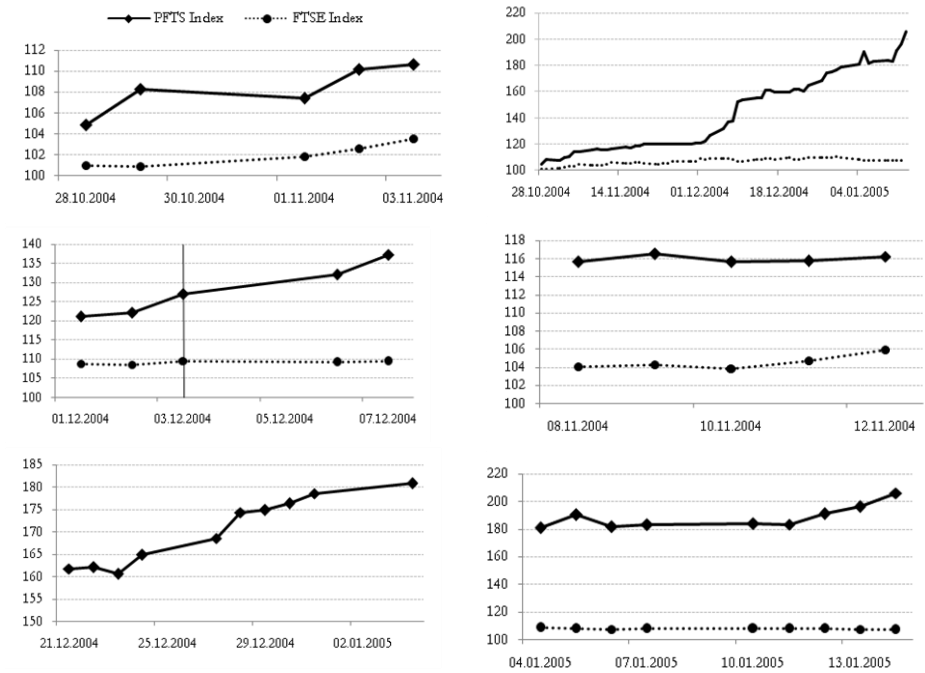
Appendix 3.C. Index used for estimation of equation (1) for the main sample Ukrainian companies.

	PFTS	UX	FTSE-100	WIG
		2004		
azst	1			
nitr	1			
unaf	1			
		2010		
azst	1			
avdk	1			
dnen	1			
enmz	1			
nitr	1			
almk	1			
unaf	1			
nvtr		1		
svgz		1		
kvbz		1		
mmki		1		
fxpo			1	
mhpc			1	
ker				1
		Tymoshenko's arrest		
nitr	1			
azst		1		
avdk		1		
hrtr		1		
cgok		1		
dnen		1		
enmz		1		
shkd		1		
sgok		1		
nvtr		1		
almk		1		
alkz		1		
unaf		1		
svgz		1		
kvbz		1		
mmki		1		
fxpo			1	
mhpc			1	
ker				1

Notes: For 2004 events, only PFTS Index was used as Ukrainian Exchange was created much later, only in 2009. For 2010 events and the arrest of Tymoshenko, UX Index was used for companies that were traded more actively on the Ukrainian Exchange rather than on the PFTS SE. Trading activity was measured as the number of quotes in the estimation period. If the number of quotes for a stock during an estimation window was higher on the Ukrainian Exchange as opposed to the PFTS SE, then UX Index was used in the estimation.

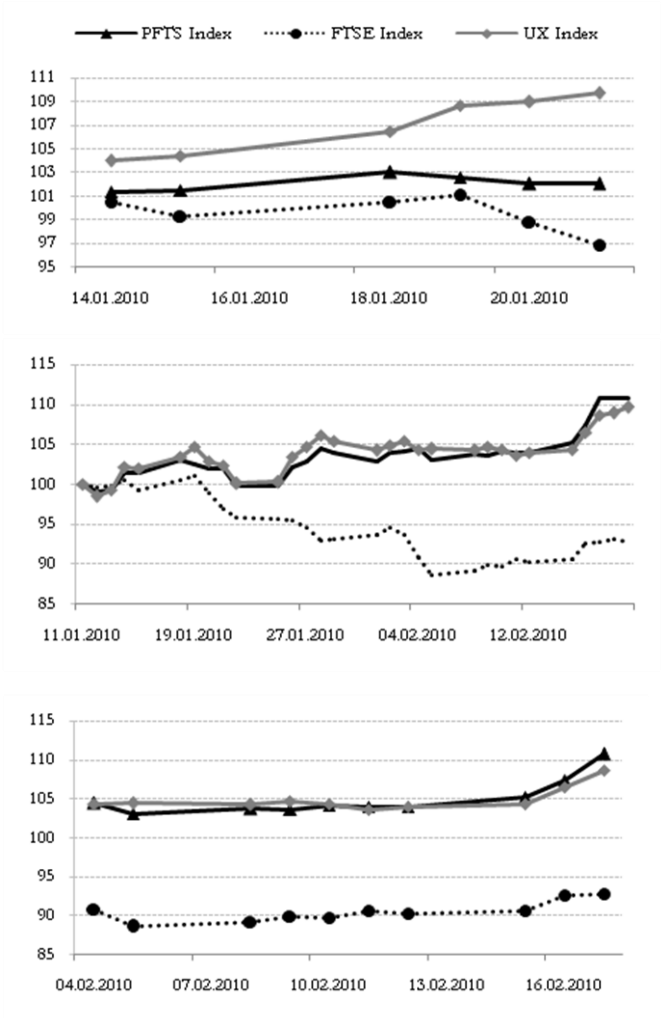
Appendix 3.D. Evolution of Market Indices during the event dates.

Figure 3.D1. The 2004 Presidential elections events



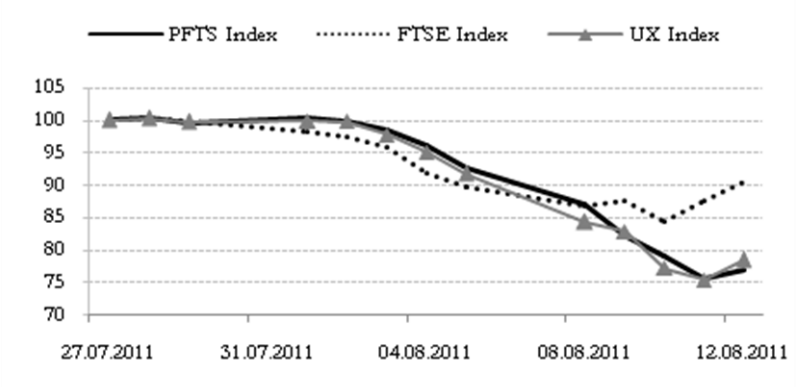
Notes: All indices are rescales to 100. Vertical lines indicate the event date.

Figure 3.D2. The 2010 Presidential elections events



Notes: All indices are rescales to 100. Vertical lines indicate the event date.

Figure 3.D3. Tymoshenko's arrest



Notes: All indices are rescales to 100. Vertical lines indicate the event date.

Appendix 3.E. Expected reaction of the returns of oligarchs' companies.

Company	Events	Oligarch	Connections	Expected Reaction	Realized Reaction*
azst	2004	Akhmetov	Yanukovych	Negative	Negative
nitr	2004	Pinchuk	Yanukovych	Negative	Negative
unaf	2004	Pryvat	Tymoshenko/ Neutral	Positive	Positive
azst	2010	Akhmetov	Yanukovych	Positive	Positive
avdk	2010	Akhmetov	Yanukovych	Positive	Negative
dnen	2010	Akhmetov	Yanukovych	Positive	Positive
enmz	2010	Akhmetov	Yanukovych	Positive	Positive/Zero
almk	2010	ISD	Orange leaders/ Tymoshenko	Negative	Negative
nitr	2010	Pinchuk	Yanukovych	Positive	Zero
nvtr	2010	Pinchuk	Yanukovych	Positive	Negative
unaf	2010	Pryvat	Tymoshenko/ Neutral	Negative	Negative
kvbz	2010	Tihipko	Yanukovych	Positive	Negative
svgz	2010	Zhevago	Tymoshenko	Negative	Negative
fxpo	2010	Zhevago	Tymoshenko	Negative	Negative
mhpc	2010	Kosyuk	Ambiguous	Ambiguous	Zero
ker	2010	Verevs'kyy	Ambiguous	Ambiguous	Negative
azst	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Negative
avdk	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Negative
hrtr	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Positive/Zero
cgok	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Positive/Zero
dnen	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Negative
enmz	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Positive
shkd	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Positive/Zero
mmki	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Positive/Zero
sgok	Tymoshenko's arrest	Akhmetov	Yanukovych	Positive	Positive/Zero
almk	Tymoshenko's arrest	ISD	Orange leaders/ Tymoshenko	Negative	Positive/Zero
alkz	Tymoshenko's arrest	ISD	Orange leaders/ Tymoshenko	Negative	Positive/Zero
nitr	Tymoshenko's arrest	Pinchuk	Yanukovych	Positive	Negative
nvtr	Tymoshenko's arrest	Pinchuk	Yanukovych	Positive	Negative
unaf	Tymoshenko's arrest	Pryvat	Tymoshenko/ Neutral	Negative	Positive/Zero
kvbz	Tymoshenko's arrest	Tihipko	Yanukovych	Positive	Negative
svgz	Tymoshenko's arrest	Zhevago	Tymoshenko	Negative	Negative
fxpo	Tymoshenko's arrest	Zhevago	Tymoshenko	Negative	Negative
mhpc	Tymoshenko's arrest	Kosyuk	Ambiguous	Ambiguous	Negative
ker	Tymoshenko's arrest	Verevs'kyy	Ambiguous	Ambiguous	Zero

Notes: * Realized reaction is based on event study methodology estimation results that are presented in tables 3.6, 3.8 and 3.11.

Appendix 3.F. CAR estimation results for 2004 elections events.

	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005
	[-2;+2]							[-1;+1]						
azst	-0.169***	-0.090			-0.002	0.044	0.085	-0.121***	-0.023			0.094	0.067	0.186
t-stat	(-3.072)	(-0.811)			(-0.006)	(0.153)	(0.302)	(-4.636)	(-0.206)			(0.343)	(0.230)	(0.693)
unaf	0.053	0.146	-0.071	0.174***	0.084	0.176		0.234	0.089	-0.067	0.091***	0.084	0.110	
t-stat	(0.182)	(0.429)	(-1.450)	(2.431)	(0.856)	(1.354)		(1.205)	(0.240)	(-1.447)	(5.231)	(0.850)	(1.553)	
nitr						-8.527***							-7.008***	
t-stat						(-3.145)							(-3.399)	
	[-2;+1]							[-0;+2]						
azst	-0.116**	-0.073			0.096	-0.007	0.143	-0.144***	-0.018			0.070	0.166	-0.093
t-stat	(-2.265)	(-0.640)			(0.365)	(-0.024)	(0.521)	(-6.495)	(-0.158)			(0.241)	(0.614)	(-0.741)
unaf	0.079	0.150	-0.070	0.089***	0.092	0.071		0.233	0.111	-0.047	0.139**	0.113	0.164	
t-stat	(0.267)	(0.430)	(-1.464)	(2.465)	(0.967)	(0.714)		(1.193)	(0.305)	(-0.913)	(2.349)	(1.583)	(1.620)	
nitr						-7.587***							-6.069***	
t-stat						(-2.895)							(-2.395)	
	[-2;+0]							[-0;+1]						
azst	-0.083	-0.136***			-0.118*	0.091	0.091	-0.091***	-0.001			0.167	0.115	-0.036
t-stat	(-1.532)	(-3.665)			(-1.825)	(0.331)	(0.316)	(-3.761)	(-0.009)			(0.639)	(0.368)	(-0.259)
unaf	0.017	-0.115	-0.073*	0.054	0.023	0.081		0.258*	0.115	-0.045	0.054***	0.121***	0.059	
t-stat	(0.056)	(-0.624)	(-1.823)	(1.604)	(0.294)	(0.817)		(1.913)	(0.277)	(-0.850)	(3.205)	(6.648)	(0.758)	
nitr						-6.145**							-5.128**	
t-stat						(-2.272)							(-2.284)	
	[-1;+2]							[-0;+0]						
azst	-0.174***	-0.040			-0.003	0.118	0.128	0.057***	0.064			-0.047	0.213	-0.087
t-stat	(-6.317)	(-0.374)			(-0.009)	(0.428)	(0.458)	(-2.380)	(-0.504)			(-0.180)	(0.684)	(-0.629)
unaf	0.207	0.085	-0.068	0.176***	0.075	0.214**		0.197	-0.150	-0.049	0.019	0.051***	0.068	
t-stat	(0.985)	(0.242)	(-1.406)	(3.099)	(0.752)	(2.248)		(1.456)	(-0.361)	(-0.925)	(1.102)	(2.824)	(0.879)	
nitr						-7.949***							-3.687*	
t-stat						(-3.322)							(-1.642)	

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

Appendix 3.G. Control portfolio (UA) CAR estimation results for 2004 elections events.

	01nov2004	10nov2004	03dec2004	27dec2004	29dec2004	10jan2005
			[-2;+2]			
control_ua	-0.265	-0.067	0.294	-0.029	-0.018	-0.057
t-test	(-0.992)	(-0.653)	(1.042)	(-0.946)	(-0.225)	(-0.593)
			[-2;+1]			
control_ua	-0.121	-0.070	0.118	-0.042**	0.011	-0.016
t-test	(-0.484)	(-0.674)	(0.496)	(-2.365)	(0.150)	(-0.176)
			[-2;+0]			
control_ua	-0.240	-0.050	0.130	-0.020*	-0.033	-0.029
t-test	(-1.505)	(-0.454)	(0.507)	(-1.917)	(-0.594)	(-0.308)
			[-1;+2]			
control_ua	-0.283	-0.123**	0.299	-0.026	-0.043	-0.109**
t-test	(-1.088)	(-2.195)	(1.290)	(-0.853)	(-0.572)	(-2.043)
			[-1;+1]			
control_ua	-0.139	-0.126**	0.124	-0.040**	-0.013	-0.069
t-test	(-0.542)	(-3.553)	(0.617)	(-2.697)	(-0.176)	(-1.284)
			[-0;+2]			
control_ua	-0.190	-0.063	0.338*	-0.022	-0.005	-0.067
t-test	(-0.692)	(-1.490)	(1.817)	(-0.669)	(-0.077)	(-1.272)
			[-0;+1]			
control_ua	-0.045	-0.065**	0.163	-0.035**	0.024	-0.026
t-test	(-0.159)	(-2.576)	(0.877)	(-4.660)	(0.374)	(-0.508)
			[-0;+0]			
control_ua	-0.164	-0.045*	0.174	-0.014*	-0.020	-0.039
t-test	(-0.579)	(-1.788)	(0.938)	(-1.830)	(-0.312)	(-0.754)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

Appendix 3.H. Control portfolio (international peers) CAR estimation results for 2004 elections events.

	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005
	[-2;+2]							[-1;+1]						
Pipes	-0.007	0.032	0.007	-0.005	-0.020	-0.004	-0.016	0.006	0.027**	0.006	-0.003	-0.005	-0.010	0.006
t-test	(-0.448)	(1.537)	(0.658)	(-0.619)	(-1.152)	(-0.206)	(-0.772)	(0.552)	(2.459)	(0.717)	(-0.391)	(-0.441)	(-0.545)	(1.074)
Steel	-0.004	0.023**	0.051**	-0.032**	0.011	-0.005	-0.015	-0.003	0.010	0.023	-0.015	0.018***	-0.008	-0.008
t-test	(-0.332)	(2.574)	(2.370)	(-2.036)	(0.809)	(-0.251)	(-1.024)	(-0.401)	(1.150)	(1.559)	(-1.070)	(2.664)	(-0.391)	(-0.502)
Iron Ore	-0.009	0.119**	0.031	-0.033*	0.031	0.025	0.111***	0.012	0.104*	0.027	-0.010	0.019	0.019	0.085***
t-test	(-0.437)	(1.973)	(1.203)	(-1.697)	(1.450)	(1.282)	(2.804)	(1.072)	(1.932)	(0.984)	(-0.545)	(0.781)	(0.976)	(2.612)
Coal	-0.040	-0.031*	0.010	-0.019	-0.010	-0.013	0.026**	-0.044***	-0.020	0.009	-0.010	-0.013	-0.004	0.018*
t-test	(-1.518)	(-1.736)	(0.767)	(-0.841)	(-0.673)	(-1.093)	(2.227)	(-31.30)	(-1.082)	(0.746)	(-0.447)	(-1.204)	(-1.039)	(1.682)
Automotive	-0.008*	-0.022	0.009	0.010	0.010	0.005	0.017	-0.007***	-0.015	0.001	0.004	0.009	0.003	0.012
t-test	(-1.758)	(-1.087)	(0.665)	(1.129)	(1.001)	(0.526)	(1.314)	(-2.738)	(-0.957)	(0.140)	(0.947)	(1.580)	(0.356)	(0.849)
Oil	-0.040	-0.011	0.038***	-0.034	0.004	-0.008	0.034	-0.017	0.002	0.031***	-0.007	-0.012	0.011	0.001
t-test	(-1.246)	(-0.355)	(3.115)	(-0.892)	(0.109)	(-0.265)	(1.260)	(-0.627)	(0.145)	(3.260)	(-0.197)	(-0.365)	(0.462)	(0.094)
Energy	-0.025*	-0.005	0.004	-0.032*	-0.027	-0.019	0.008	-0.018*	0.009	-0.004**	-0.017***	-0.028	0.016***	0.003
t-test	(-1.951)	(-0.340)	(0.376)	(-1.895)	(-1.091)	(-0.635)	(0.501)	(-1.906)	(1.117)	(-2.100)	(-6.789)	(-1.222)	(2.624)	(0.174)
	[-2;+1]							[-0;+2]						
Pipes	0.004	0.020	0.002	-0.007	-0.005	-0.013	0.003	-0.014	0.035***	0.004	0.004**	-0.012	-0.007	-0.018
t-test	(0.371)	(0.978)	(0.174)	(-1.009)	(-0.464)	(-0.753)	(0.441)	(-1.092)	(3.892)	(0.621)	(2.123)	(-0.672)	(-0.337)	(-0.906)
Steel	-0.009	0.017*	0.027*	-0.018	0.017*	-0.003	-0.012	0.007	0.009	0.044**	-0.015	0.009	-0.020**	-0.009
t-test	(-1.013)	(1.905)	(1.918)	(-1.391)	(1.935)	(-0.146)	(-0.804)	(1.283)	(1.097)	(2.539)	(-1.070)	(0.602)	(-2.318)	(-0.580)
Iron Ore	-0.002	0.110*	0.031	-0.019	0.031	0.019	0.109***	-0.002	0.043***	0.034*	-0.028*	0.019	0.006	0.066
t-test	(-0.100)	(1.870)	(1.219)	(-1.066)	(1.550)	(0.943)	(3.518)	(-0.156)	(2.981)	(1.772)	(-1.714)	(0.980)	(0.913)	(1.512)
Coal	-0.052***	-0.021	0.008	-0.009	-0.014	-0.015	0.026**	-0.018	-0.025	0.001	-0.004	-0.010	0.000	0.017
t-test	(-7.131)	(-1.181)	(0.618)	(-0.412)	(-1.153)	(-1.425)	(2.513)	(-0.664)	(-1.408)	(0.106)	(-0.210)	(-0.714)	(0.101)	(1.476)
Automotive	-0.006	-0.010	0.012	0.012	0.013**	0.007	0.013	-0.005***	-0.029***	0.002	0.003	0.005	-0.005	0.021***
t-test	(-1.238)	(-0.542)	(0.949)	(1.491)	(2.435)	(0.755)	(0.953)	(-5.690)	(-2.741)	(0.282)	(0.613)	(0.560)	(-0.927)	(3.292)
Oil	-0.040	-0.021	0.034***	-0.027	-0.011	-0.008	0.010	-0.015	0.018	0.027**	0.008	0.003	0.004	0.034*
t-test	(-1.290)	(-0.789)	(2.764)	(-0.690)	(-0.413)	(-0.262)	(0.594)	(-0.522)	(1.464)	(2.406)	(0.305)	(0.099)	(0.157)	(1.763)
Energy	-0.016	0.004	-0.005***	-0.035***	-0.030	-0.004	0.006	-0.023**	-0.007	0.007	-0.007	-0.012	-0.003	0.003
t-test	(-1.305)	(0.338)	(-2.799)	(-2.906)	(-1.350)	(-0.154)	(0.372)	(-2.343)	(-0.589)	(0.610)	(-0.819)	(-0.492)	(-0.154)	(0.158)
	[-2;+0]							[-0;+1]						
Pipes	0.001	0.013	0.002	-0.009*	-0.011	-0.012	0.001	-0.002	0.022**	-0.001*	0.002	0.003	-0.016	0.001

Cont'd	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005
				[-2;+0]							[-0;+1]			
t-test	(0.123)	(0.633)	(0.196)	(-1.944)	(-1.562)	(-0.679)	(0.076)	(-0.263)	(2.199)	(-1.748)	(1.081)	(0.319)	(-1.112)	(0.274)
Steel	-0.012***	0.020***	0.010***	-0.017	0.007	0.009	0.000	0.002	0.003	0.021	-0.001	0.015***	-0.018***	-0.006
t-test	(-2.888)	(11.24)	(4.652)	(-1.371)	(1.552)	(0.617)	(0.022)	(0.474)	(0.395)	(1.514)	(-0.880)	(2.772)	(-3.138)	(-0.348)
Iron Ore	0.001	0.087	0.009	-0.020	0.012	0.018	0.095***	0.005	0.034***	0.034***	-0.013	0.019	0.000	0.063*
t-test	(0.060)	(1.386)	(0.499)	(-1.239)	(0.761)	(0.897)	(3.518)	(0.423)	(2.603)	(3.271)	(-0.807)	(0.957)	(-0.199)	(1.787)
Coal	-0.037***	-0.024	0.012	-0.005	-0.012	-0.012	0.012**	-0.030***	-0.015	-0.001	0.006	-0.013	-0.002	0.016*
t-test	(-5.130)	(-1.556)	(1.187)	(-0.238)	(-0.845)	(-1.099)	(2.279)	(-55.38)	(-0.742)	(-0.110)	(0.471)	(-1.474)	(-0.425)	(1.770)
Automotive	-0.004	-0.007	0.007	0.011	0.008	0.005	0.008	-0.003***	-0.018	0.005	0.004*	0.009***	-0.003	0.016***
t-test	(-0.788)	(-0.359)	(0.561)	(1.367)	(1.634)	(0.555)	(0.534)	(-4.498)	(-1.484)	(1.099)	(1.800)	(3.627)	(-0.492)	(2.869)
Oil	-0.017	-0.019	0.028**	-0.022	-0.018	0.003	0.001	-0.015	0.007	0.022**	0.015	-0.012	0.003	0.011
t-test	(-0.622)	(-0.678)	(2.239)	(-0.518)	(-0.775)	(0.099)	(0.075)	(-0.485)	(0.628)	(2.094)	(0.574)	(-0.447)	(0.131)	(1.512)
Energy	-0.015	0.000	-0.002**	-0.029**	-0.035**	-0.014	-0.004	-0.013	0.002	-0.003	-0.010***	-0.016	0.011	0.001
t-test	(-1.185)	(-0.042)	(-2.498)	(-2.375)	(-2.205)	(-0.546)	(-0.350)	(-1.236)	(0.328)	(-1.184)	(-5.599)	(-0.620)	(1.544)	(0.044)
				[-1;+2]							[-0;+0]			
Pipes	-0.005	0.039***	0.011	0.000	-0.020	-0.001	-0.014	-0.005	0.017	-0.001	0.000	-0.003	-0.015	-0.001
t-test	(-0.319)	(3.618)	(1.330)	(-0.035)	(-1.162)	(-0.058)	(-0.624)	(-0.631)	(1.599)	(-1.374)	(0.040)	(-0.340)	(-1.056)	(-0.362)
Steel	0.002	0.015*	0.046**	-0.028*	0.012	-0.010	-0.011	-0.001	0.006	0.004	0.000	0.005	-0.006	0.006
t-test	(0.204)	(1.838)	(2.222)	(-1.813)	(0.840)	(-0.519)	(-0.721)	(-0.262)	(0.697)	(0.257)	(0.059)	(0.886)	(-1.069)	(0.325)
Iron Ore	0.005	0.113**	0.027	-0.025	0.019	0.025	0.087**	0.008	0.011	0.012	-0.015	0.000	-0.001	0.050
t-test	(0.308)	(1.968)	(0.988)	(-1.212)	(0.849)	(1.357)	(2.130)	(0.711)	(0.801)	(1.135)	(-0.903)	(-0.021)	(-0.599)	(1.393)
Coal	-0.032	-0.029*	0.011	-0.020	-0.010	-0.002	0.019	-0.015***	-0.018	0.003	0.010	-0.011	0.001	0.004
t-test	(-1.188)	(-1.699)	(0.918)	(-0.897)	(-0.619)	(-0.342)	(1.574)	(-28.19)	(-0.871)	(0.444)	(0.735)	(-1.237)	(0.287)	(0.385)
Automotive	-0.010***	-0.026*	-0.002	0.002	0.005	0.001	0.016	-0.001*	-0.015	0.000	0.004	0.003	-0.004	0.011*
t-test	(-3.819)	(-1.645)	(-0.254)	(0.407)	(0.522)	(0.155)	(1.232)	(-1.749)	(-1.242)	(0.049)	(1.400)	(1.313)	(-0.746)	(1.934)
Oil	-0.017	0.012	0.036***	-0.014	0.003	0.011	0.026	0.008	0.009	0.017	0.021	-0.019	0.015	0.002
t-test	(-0.632)	(0.777)	(3.378)	(-0.400)	(0.085)	(0.490)	(0.917)	(0.257)	(0.814)	(1.547)	(0.787)	(-0.723)	(0.565)	(0.256)
Energy	-0.028***	0.000	0.005	-0.014	-0.024	0.002	0.005	-0.012	-0.002	0.000	-0.004**	-0.021	0.002	-0.009
t-test	(-2.874)	(0.019)	(0.476)	(-1.507)	(-0.966)	(0.099)	(0.299)	(-1.118)	(-0.335)	(-0.092)	(-2.299)	(-0.810)	(0.272)	(-0.477)
				[-1;+0]										
Pipes	0.003	0.021*	0.006	-0.005	-0.011**	-0.009	0.003							
t-test	(0.267)	(1.795)	(0.721)	(-0.963)	(-2.142)	(-0.444)	(0.532)							
Steel	-0.007	0.012***	0.005***	-0.014	0.007***	0.004	0.004							
t-test	(-1.611)	(9.618)	(3.470)	(-0.993)	(3.711)	(0.250)	(0.570)							
Iron Ore	0.015***	0.081	0.004	-0.011	0.000	0.019	0.071**							
t-test	(10.57)	(1.356)	(0.196)	(-0.602)	(-0.021)	(0.917)	(2.515)							

Cont'd	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005
	[-1;+0]													
Coal	-0.029***	-0.022	0.013**	-0.007	-0.011	-0.001	0.005**							
t-test	(-18.27)	(-1.637)	(2.004)	(-0.253)	(-0.849)	(-0.301)	(2.216)							
Automotive	-0.005*	-0.012	-0.003	0.003	0.003	0.002	0.007							
t-test	(-1.827)	(-0.682)	(-0.890)	(0.595)	(0.753)	(0.167)	(0.405)							
Oil	0.006	0.004	0.025***	-0.002	-0.019	0.021***	-0.007							
t-test	(0.575)	(0.278)	(3.272)	(-0.043)	(-0.618)	(2.962)	(-0.670)							
Energy	-0.017**	0.005	-0.002	-0.011***	-0.032***	0.007**	-0.007							
t-test	(-2.330)	(0.524)	(-1.339)	(-3.877)	(-3.531)	(2.186)	(-0.631)							

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event. Certain event dates in out sample coincide with other international events that affect the business of our international peers. These are: November 24, 2004 when oil prices went up reacting to the dollar appreciation relative to euro; and January 4, 2005 when AME Mineral Economics upgraded the forecast of iron ore price growth to 20-25% in 2005. Hence, the significant coefficient on CAR of some companies on these dates should be associated with international events rather than with Ukrainian political events.

Appendix 3.I. CAR estimation results for 2010 elections events.

	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-2;+2]					[-0;+2]		
azst	0.080**	0.041***	-0.019	-0.021	-0.026*	0.025***	0.023***	-0.012	-0.019	-0.016***
t-test	(2.048)	(6.264)	(-0.693)	(-1.361)	(-1.902)	(3.474)	(3.402)	(-1.113)	(-1.346)	(-2.511)
avdk	-0.055	-0.078*	-0.021	-0.036*	-0.047**	-0.054	-0.014	-0.017***	-0.027	-0.018
t-test	(-1.006)	(-1.713)	(-1.281)	(-1.817)	(-2.347)	(-1.076)	(-1.033)	(-4.264)	(-1.287)	(-1.249)
dnen	-0.072	-0.124*	0.054	0.067	0.186***	-0.118**	-0.063	0.048	0.059	0.155***
t-test	(-0.694)	(-1.905)	(1.062)	(1.372)	(2.582)	(-2.322)	(-1.073)	(1.131)	(1.347)	(3.416)
enmz	0.076***	0.048*	-0.015	-0.002	-0.030***	0.028	0.023	0.000	-0.007	-0.028***
t-test	(2.675)	(1.656)	(-0.637)	(-0.123)	(-2.559)	(1.169)	(0.869)	(-0.007)	(-1.025)	(-10.13)
nitr	-0.037	0.077	0.006	-0.010	-0.003	0.063	0.050	-0.025	0.016	-0.017
t-test	(-0.280)	(0.713)	(0.1413)	(-0.298)	(-0.02)	(0.6367)	(0.539)	(-1.047)	(0.7046)	(-0.14)
almk	-0.039	-0.050**	-0.022	-0.020	-0.049***	-0.029	-0.013	-0.003	-0.022***	-0.032**
t-test	(-1.494)	(-2.262)	(-0.853)	(-1.516)	(-3.365)	(-1.219)	(-1.200)	(-0.373)	(-3.477)	(-2.252)
unaf	0.059	0.055	-0.013	-0.036***	-0.050***	0.046	-0.015	-0.022	-0.015**	-0.035***
t-test	(0.936)	(0.852)	(-0.555)	(-2.652)	(-5.486)	(0.680)	(-0.87)	(-1.443)	(-2.216)	(-4.415)
kvbz	0.012	-0.002	-0.114**	-0.105	-0.029	-0.017	-0.027	-0.072	-0.072*	0.004
t-test	(0.223)	(-0.03)	(-2.041)	(-1.600)	(-0.65)	(-0.33)	(-0.65)	(-1.173)	(-1.680)	(0.222)
svgz	0.083	0.031	-0.032	-0.063***	-0.038	-0.016	0.021	-0.025	-0.035	0.001
t-test	(0.922)	(0.359)	(-1.026)	(-2.539)	(-0.974)	(-0.25)	(0.739)	(-1.088)	(-1.534)	(0.0157)
fxpo	-0.074*	-0.050*	-0.053**	0.110	0.224**	-0.033	-0.050***	-0.030***	0.129	0.083
t-test	(-1.802)	(-1.754)	(-2.138)	(1.017)	(2.016)	(-1.150)	(-2.353)	(-6.126)	(1.334)	(0.866)
mhpc	0.067	0.005	-0.008	-0.033	-0.008	0.029	-0.021	-0.039	0.016	-0.014
t-test	(1.3304)	(0.1192)	(-0.142)	(-0.67)	(-0.33)	(0.8690)	(-1.244)	(-0.837)	(0.847)	(-0.80)
ker	0.030	0.009	-0.053	0.044	0.100***	0.006	-0.015	-0.013	0.076***	0.044
t-test	(1.5134)	(0.3864)	(-1.113)	(0.711)	(2.835)	(0.3668)	(-1.183)	(-0.281)	(3.992)	(1.475)
nvtr			0.017	-0.013	0.128			-0.010	0.011	0.075
t-test			(0.1757)	(-0.13)	(1.112)			(-0.100)	(0.122)	(0.693)
			[-2;+1]					[-0;+1]		
azst	0.077**	0.033***	-0.009	-0.009	-0.024*	0.021***	0.015*	-0.002	-0.007	-0.014***
t-test	(2.061)	(4.869)	(-0.336)	(-0.721)	(-1.806)	(13.45)	(1.922)	(-0.292)	(-0.530)	(-3.665)
avdk	-0.059	-0.068	-0.013	-0.038***	-0.033*	-0.058	-0.003	-0.009***	-0.029**	-0.004
t-test	(-1.118)	(-1.440)	(-0.806)	(-2.377)	(-1.673)	(-1.344)	(-0.277)	(-3.333)	(-2.148)	(-0.434)
dnen	-0.012	-0.127**	0.015	0.039	0.139*	-0.060	-0.065	0.008	0.030	0.109**
t-test	(-0.138)	(-2.210)	(0.391)	(0.829)	(1.898)	(-1.234)	(-1.210)	(0.310)	(0.632)	(2.100)

Cont'd	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-2;+1]					[-0;+1]		
enmz	0.077***	0.050*	-0.010	-0.004	-0.020*	0.028	0.025	0.005	-0.009***	-0.018***
t-test	(3.533)	(1.932)	(-0.407)	(-0.254)	(-1.828)	(1.273)	(0.983)	(0.2907)	(-8.293)	(-6.150)
nitr	-0.089	0.035	0.004	-0.030	0.000	0.011	0.008	-0.026	-0.004	-0.015
t-test	(-0.814)	(0.325)	(0.1032)	(-1.336)	(-0.00)	(0.1041)	(0.078)	(-1.210)	(-0.585)	(-0.10)
almk	-0.032	-0.042*	-0.016	-0.008	-0.033***	-0.022	-0.005	0.003	-0.010***	-0.017
t-test	(-1.170)	(-1.848)	(-0.605)	(-0.896)	(-2.563)	(-0.793)	(-0.451)	(0.4829)	(-9.960)	(-1.168)
unaf	0.075	0.057	-0.012	-0.029**	-0.040***	0.062	-0.013	-0.021*	-0.008	-0.025***
t-test	(1.394)	(0.891)	(-0.519)	(-2.048)	(-4.207)	(1.121)	(-0.65)	(-1.649)	(-1.144)	(-2.770)
kvbz	0.046	-0.014	-0.076	-0.067	-0.027	0.018	-0.039	-0.033	-0.034	0.006
t-test	(1.565)	(-0.29)	(-1.396)	(-1.044)	(-0.59)	(0.664)	(-1.30)	(-0.498)	(-0.789)	(0.292)
svgz	0.061	0.041	-0.035	-0.042*	-0.018	-0.038	0.031***	-0.028*	-0.014	0.021
t-test	(0.657)	(0.477)	(-1.200)	(-1.809)	(-0.486)	(-0.67)	(2.440)	(-1.678)	(-0.673)	(1.2085)
fxpo	-0.044	-0.035	-0.040	0.012	0.256***	-0.003	-0.035	-0.018***	0.030	0.115***
t-test	(-1.171)	(-1.217)	(-1.585)	(0.223)	(4.542)	(-0.458)	(-1.436)	(-4.493)	(0.542)	(3.170)
mhpc	0.067	0.023	-0.018	-0.026	-0.010	0.029	-0.003	-0.049	0.022***	-0.016
t-test	(1.3814)	(0.6798)	(-0.315)	(-0.51)	(-0.40)	(0.8588)	(-1.474)	(-1.339)	(7.379)	(-0.93)
ker	0.038***	0.018	-0.072***	0.005	0.070**	0.014*	-0.005	-0.033	0.038***	0.014
t-test	(4.5783)	(0.9575)	(-2.376)	(0.105)	(2.055)	(1.8086)	(-0.436)	(-0.915)	(48.20)	(0.644)
nvtr			-0.047	-0.002	0.126			-0.073***	0.022	0.073
t-test			(-0.793)	(-0.02)	(1.101)			(-7.777)	(0.209)	(0.620)
			[-2;+0]					[-0;+0]		
azst	0.065*	0.029***	-0.011	-0.012	-0.015	0.010***	0.012	-0.004	-0.010	-0.005
t-test	(1.714)	(9.942)	(-0.411)	(-1.113)	(-1.108)	(6.229)	(1.461)	(-0.646)	(-0.765)	(-1.332)
avdk	-0.052	-0.071*	-0.007	-0.017***	-0.027	-0.050	-0.007	-0.003	-0.008	0.003
t-test	(-0.938)	(-1.800)	(-0.417)	(-4.264)	(-1.287)	(-1.172)	(-0.638)	(-1.166)	(-0.574)	(0.2827)
dnen	-0.007	-0.068	0.024	0.048	0.059	-0.054	-0.006	0.018	0.039	0.029
t-test	(-0.071)	(-1.445)	(0.680)	(1.131)	(1.347)	(-1.117)	(-0.105)	(0.655)	(0.816)	(0.550)
enmz	0.051***	0.051***	-0.021	0.000	-0.010	0.003	0.025	-0.006	-0.005***	-0.007***
t-test	(2.407)	(2.421)	(-1.253)	(-0.007)	(-1.107)	(0.136)	(0.991)	(-0.354)	(-4.646)	(-2.575)
nitr	-0.044	-0.018	0.007	-0.025	-0.064	0.056	-0.045	-0.024	0.001	-0.078
t-test	(-0.395)	(-0.19)	(0.1503)	(-1.047)	(-0.72)	(0.5520)	(-0.46)	(-1.105)	(0.2071)	(-0.55)
almk	-0.035	-0.035	-0.015	-0.003	-0.018*	-0.025	0.003	0.004	-0.005***	-0.001
t-test	(-1.417)	(-1.458)	(-0.523)	(-0.373)	(-1.916)	(-0.896)	(0.2743)	(0.7414)	(-5.480)	(-0.084)
unaf	0.072	0.073	-0.008	-0.022	-0.022***	0.059	0.003	-0.017	-0.001	-0.008
t-test	(1.358)	(1.405)	(-0.320)	(-1.443)	(-37.15)	(1.060)	(0.171)	(-1.324)	(-0.072)	(-0.885)

Cont'd	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-2;+0]					[-0;+0]		
kvbz	0.050**	0.020	-0.092***	-0.072	-0.019	0.022	-0.004	-0.049	-0.039	0.014
t-test	(2.346)	(0.852)	(-3.233)	(-1.173)	(-0.39)	(0.832)	(-0.15)	(-0.749)	(-0.894)	(0.646)
svgz	0.051	0.019	-0.029	-0.025	-0.036*	-0.047	0.009	-0.023	0.003	0.002
t-test	(0.527)	(0.214)	(-0.955)	(-1.088)	(-1.729)	(-0.83)	(0.720)	(-1.339)	(0.1633)	(0.1042)
fxpo	-0.039	-0.005	-0.033	-0.030***	0.180***	0.002	-0.005	-0.011***	-0.013	0.040
t-test	(-0.989)	(-0.813)	(-1.251)	(-6.12)	(3.139)	(0.2708)	(-0.218)	(-2.746)	(-0.22)	(1.085)
mhpc	0.070	0.024	0.025	-0.039	0.007	0.032	-0.002	-0.006	0.009***	0.001
t-test	(1.5861)	(0.6739)	(0.8965)	(-0.83)	(0.372)	(0.9294)	(-1.237)	(-0.169)	(3.189)	(0.034)
ker	0.035***	0.026***	-0.038*	-0.013	0.053	0.012	0.003	0.002	0.019***	-0.004
t-test	(107.58)	(3.1833)	(-1.659)	(-0.28)	(1.462)	(1.4043)	(0.2817)	(0.0421)	(24.60)	(-0.17)
nvtr			-0.005	-0.065	0.149			-0.031***	-0.041	0.096
t-test			(-0.115)	(-1.44)	(1.573)			(-3.388)	(-0.39)	(0.810)
			[-1;+2]					[-1;+1]		
azst	0.033***	0.033***	0.001	-0.017	-0.029***	0.029***	0.025***	0.010	-0.004	-0.027***
t-test	(4.869)	(4.880)	(0.0413)	(-1.050)	(-3.086)	(9.942)	(3.474)	(0.7177)	(-0.351)	(-4.336)
avdk	-0.068	-0.064	-0.009	-0.033*	-0.039*	-0.071*	-0.054	-0.002	-0.035***	-0.026
t-test	(-1.440)	(-1.36)	(-0.676)	(-1.654)	(-1.900)	(-1.800)	(-1.076)	(-0.125)	(-2.414)	(-1.205)
dnen	-0.127**	-0.116*	0.069*	0.050	0.146**	-0.068	-0.118**	0.030	0.021	0.100
t-test	(-2.210)	(-1.816)	(1.724)	(0.986)	(1.973)	(-1.445)	(-2.322)	(1.029)	(0.438)	(1.289)
enmz	0.050*	0.026	0.002	0.004	-0.026**	0.051***	0.028	0.007	0.002	-0.016
t-test	(1.932)	(1.026)	(0.1302)	(0.2766)	(-2.209)	(2.421)	(1.169)	(0.4833)	(0.1241)	(-1.394)
nitr	0.035	0.106	-0.020	0.013	0.002	-0.018	0.063	-0.022	-0.006	0.005
t-test	(0.3255)	(1.101)	(-0.792)	(0.6025)	(0.021)	(-0.194)	(0.636)	(-0.847)	(-1.068)	(0.038)
almk	-0.042*	-0.037*	0.001	-0.024***	-0.044***	-0.035	-0.029	0.007	-0.012***	-0.028**
t-test	(-1.848)	(-1.647)	(0.1463)	(-2.779)	(-3.248)	(-1.458)	(-1.219)	(1.2598)	(-3.004)	(-2.215)
unaf	0.057	0.044	-0.024	-0.019***	-0.043***	0.073	0.046	-0.023*	-0.012**	-0.032***
t-test	(0.891)	(0.659)	(-1.583)	(-2.967)	(-4.876)	(1.405)	(0.680)	(-1.670)	(-2.023)	(-3.468)
kvbz	-0.014	-0.005	-0.089	-0.056	-0.034	0.070	0.062	-0.019	-0.005	-0.015***
t-test	(-0.29)	(-0.09)	(-1.532)	(-0.977)	(-0.76)	(1.458)	(1.121)	(-1.289)	(-1.269)	(-25.6)
svgz	0.041	-0.026	-0.014	-0.040*	-0.021	0.019	-0.016	-0.018	-0.020	0.000
t-test	(0.477)	(-0.43)	(-0.507)	(-1.822)	(-0.536)	(0.214)	(-0.25)	(-0.626)	(-1.089)	(-0.013)
fxpo	-0.035	-0.048*	-0.026*	0.121	0.181	-0.005	-0.033	-0.014	0.023	0.214***
t-test	(-1.217)	(-1.755)	(-1.738)	(1.172)	(1.581)	(-0.813)	(-1.150)	(-1.008)	(0.435)	(4.148)
mhpc	0.023	0.010	-0.014	-0.027	-0.021	0.024	0.029	-0.024	-0.020	-0.023
t-test	(0.6798)	(0.2429)	(-0.236)	(-0.52)	(-1.25)	(0.6739)	(0.8690)	(-0.400)	(-0.36)	(-1.54)

Cont'd	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-1;+2]					[-1;+1]		
ker	0.018	-0.003	-0.038	0.042	0.081**	0.026***	0.006	-0.057*	0.004	0.052
t-test	(0.9575)	(-0.147)	(-0.780)	(0.672)	(2.237)	(3.1833)	(0.3668)	(-1.796)	(0.071)	(1.424)
nvtr			-0.002	-0.021	0.065			-0.065	-0.010	0.063
t-test			(-0.023)	(-0.21)	(0.597)			(-1.445)	(-0.10)	(0.557)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

Appendix 3.J. CAR estimation results for 2010 elections events for portfolios of Ukrainian companies.

	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-2;+2]		
control_ua	0.949	1.169	0.790	1.845	0.998
t-test	(0.414)	(0.517)	(0.352)	(0.561)	(0.320)
			[-2;+1]		
control_ua	0.991	0.876	0.858	0.773	1.042
t-test	(0.449)	(0.376)	(0.397)	(0.347)	(0.336)
			[-2;+0]		
control_ua	0.818	0.918	0.081	0.772	0.959
t-test	(0.352)	(0.411)	(0.197)	(0.346)	(0.299)
			[-1;+2]		
control_ua	0.876	1.238	0.704	1.782	0.998
t-test	(0.376)	(0.601)	(0.306)	(0.555)	(0.317)
			[-1;+1]		
control_ua	0.918	0.944	0.772	0.710	1.042
t-test	(0.411)	(0.432)	(0.346)	(0.308)	(0.334)
			[-0;+2]		
control_ua	0.944	0.424	0.772	1.004	-0.075
t-test	(0.432)	(0.508)	(0.346)	(0.320)	(-0.152)
			[-0;+1]		
control_ua	0.987	0.130	0.841	-0.068	-0.031
t-test	(0.544)	(0.214)	(0.416)	(-0.347)	(-0.054)
			[-0;+0]		
control_ua	0.814	0.173	0.063	-0.068	-0.114
t-test	(0.448)	(0.283)	(0.031)	(-0.350)	(-0.204)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

Appendix 3.K. CAR estimation results for 2010 elections events for portfolios of International peers.

	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-2;+2]					[-1;+0]		
Pipes	0.030*	0.006	0.019	0.018	0.015	0.015***	0.005	0.004	0.000	0.001
	(1.670)	(0.406)	(1.169)	(1.200)	(0.676)	(3.795)	(0.359)	(0.726)	(-0.16)	(0.401)
Steel	-0.006	-0.027***	-0.023	-0.002	0.012***	-0.010*	-0.002	-0.008	-0.006	0.004
	(-0.51)	(-2.65)	(-1.33)	(-0.12)	(2.613)	(-1.88)	(-0.57)	(-1.31)	(-0.34)	(0.923)
Iron Ore	-0.010	-0.032**	-0.024	0.046*	0.068***	-0.013**	-0.005	-0.013	0.002	0.034*
	(-0.71)	(-2.00)	(-1.12)	(1.883)	(2.616)	(-2.05)	(-0.33)	(-0.58)	(0.333)	(1.783)
Coal	-0.027	-0.045***	-0.023	0.017	0.023	-0.018***	-0.019**	-0.005	-0.009	-0.007
	(-1.53)	(-3.52)	(-1.47)	(0.634)	(0.896)	(-3.07)	(-1.99)	(-1.13)	(-0.53)	(-0.29)
Agriculture	-0.034**	-0.060*	-0.096***	-0.041**	0.011	-0.012	-0.004	-0.041	-0.032***	0.004***
	(-1.97)	(-1.87)	(-4.25)	(-1.96)	(0.542)	(-0.54)	(-0.30)	(-1.54)	(-2.81)	(4.323)
Automotive	-0.013	-0.006	-0.016	-0.034	-0.008	-0.014***	0.002	-0.020	-0.004	-0.016
	(-0.51)	(-0.18)	(-0.41)	(-0.98)	(-0.38)	(-6.21)	(0.138)	(-0.57)	(-0.14)	(-0.91)
Oil	-0.008	-0.003	-0.016	-0.009		-0.003	-0.011***	0.003	-0.015*	
	(-0.48)	(-0.22)	(-1.10)	(-0.67)		(-0.67)	(-3.38)	(0.640)	(-1.67)	
Energy	0.020**	0.011*	0.001	0.003	0.001	0.001	0.004	0.000	0.002	-0.001
	(2.124)	(1.659)	(0.094)	(0.230)	(0.113)	(0.211)	(0.462)	(-0.01)	(0.180)	(-0.14)
			[-2;+1]					[-0;+2]		
Pipes	0.028	0.013	0.018	0.020	0.026*	0.008	-0.009	0.004	0.015	0.001
	(1.545)	(1.083)	(1.116)	(1.332)	(1.797)	(0.600)	(-1.10)	(0.888)	(0.950)	(0.056)
Steel	-0.003	-0.016**	-0.011	-0.002	0.010**	-0.004	-0.017*	-0.008	-0.006	0.012***
	(-0.26)	(-2.08)	(-0.75)	(-0.09)	(1.976)	(-1.24)	(-1.68)	(-0.48)	(-0.40)	(6.401)
Iron Ore	-0.006	-0.018	-0.022	0.024	0.067***	-0.009	-0.017	0.004	0.040*	0.016**
	(-0.40)	(-1.36)	(-1.01)	(1.271)	(3.163)	(-0.61)	(-0.98)	(0.919)	(1.774)	(2.386)
Coal	-0.016	-0.029***	-0.011	0.005	0.016	-0.028***	-0.023**	-0.013	0.018	0.002
	(-0.96)	(-2.86)	(-0.88)	(0.181)	(0.608)	(-5.04)	(-1.97)	(-0.96)	(0.661)	(0.062)
Agriculture	-0.029	-0.027	-0.074***	-0.044***	-0.003	-0.010	-0.048*	-0.041***	-0.021	0.004
	(-1.61)	(-1.47)	(-3.16)	(-2.74)	(-0.17)	(-0.77)	(-1.84)	(-3.58)	(-0.93)	(0.178)
Automotive	0.004	-0.023	-0.001	-0.028	-0.005	-0.015	0.008	0.001	-0.049**	0.001
	(0.206)	(-1.13)	(-0.03)	(-0.77)	(-0.22)	(-0.69)	(0.273)	(0.022)	(-2.54)	(0.213)

Cont'd	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-2;+1]					[-0;+2]		
Oil	-0.012	-0.010	-0.012	-0.010		-0.012	-0.003	-0.012	-0.001	
	(-0.82)	(-1.04)	(-0.83)	(-0.67)		(-0.87)	(-0.22)	(-0.86)	(-0.15)	
Energy	0.016*	0.011	-0.004	0.004	-0.005	0.007	0.010**	-0.005	0.013*	0.002
	(1.684)	(1.568)	(-0.34)	(0.251)	(-0.40)	(1.029)	(2.303)	(-0.43)	(1.748)	(0.162)
			[-2;+0]					[-0;+1]		
Pipes	0.033***	0.011	0.019	0.004	0.017	0.005	-0.002	0.004	0.016	0.012*
	(3.288)	(0.847)	(1.222)	(0.888)	(1.121)	(0.359)	(-0.33)	(0.682)	(1.080)	(1.703)
Steel	-0.004	-0.010	-0.017**	-0.008	0.005	-0.002	-0.006	0.004	-0.006	0.009***
	(-0.32)	(-1.29)	(-2.16)	(-0.48)	(1.232)	(-0.46)	(-0.82)	(0.602)	(-0.33)	(15.20)
Iron Ore	-0.011	-0.010	-0.025	0.004	0.059***	-0.004	-0.002	0.005***	0.018	0.015***
	(-1.06)	(-0.78)	(-1.31)	(0.919)	(3.228)	(-0.27)	(-0.19)	(8.713)	(0.847)	(464.8)
Coal	-0.010	-0.027***	-0.014*	-0.013	0.006	-0.017***	-0.007***	-0.001	0.006	-0.006
	(-0.58)	(-3.06)	(-1.76)	(-0.96)	(0.224)	(-2.87)	(-3.63)	(-0.12)	(0.188)	(-0.21)
Agriculture	-0.020	-0.021	-0.064***	-0.041***	0.008***	-0.004	-0.014***	-0.020***	-0.024	-0.009
	(-1.04)	(-1.10)	(-2.91)	(-3.58)	(5.530)	(-0.30)	(-4.00)	(-34.9)	(-1.23)	(-0.70)
Automotive	-0.004	-0.006	-0.012	0.001	-0.008	0.002	-0.009	0.015**	-0.043***	0.004
	(-0.22)	(-0.41)	(-0.34)	(0.022)	(-0.38)	(0.138)	(-0.36)	(2.220)	(-3.13)	(1.566)
Oil	0.001	-0.008	0.000	-0.012		-0.016**	-0.010**	-0.009	-0.001	
	(0.085)	(-0.74)	(-0.03)	(-0.86)		(-2.04)	(-1.96)	(-0.56)	(-0.16)	
Energy	0.011	0.007	0.000	-0.005	0.003	0.004	0.009***	-0.010***	0.013***	-0.004
	(1.054)	(0.988)	(-0.03)	(-0.43)	(0.344)	(0.462)	(4.381)	(-3.98)	(4.999)	(-0.38)
			[-1;+2]					[-0;+0]		
Pipes	0.013	0.001	0.004	0.014	0.000	0.010	-0.005	0.004	0.001	0.002
	(1.083)	(0.041)	(0.741)	(0.886)	(-0.00)	(0.679)	(-0.66)	(0.841)	(0.040)	(0.351)
Steel	-0.012*	-0.019*	-0.014	-0.001	0.011***	-0.002	0.001	-0.001	-0.012	0.004***
	(-1.70)	(-1.91)	(-0.81)	(-0.03)	(2.611)	(-0.73)	(0.085)	(-0.19)	(-0.66)	(7.103)
Iron Ore	-0.012	-0.027	-0.011	0.043*	0.043*	-0.010	0.005	0.002***	-0.002	0.007***
	(-0.92)	(-1.61)	(-0.57)	(0.043)	(1.911)	(-0.63)	(0.401)	(3.856)	(-0.07)	(231.9)
Coal	-0.034***	-0.037***	-0.014	0.022	0.010	-0.012*	-0.004**	-0.005	-0.012	-0.016
	(-5.48)	(-2.89)	(-0.92)	(0.836)	(0.410)	(-1.93)	(-2.31)	(-0.56)	(-0.40)	(-0.60)
Agriculture	-0.027	-0.044	-0.073***	-0.031	0.007	0.005	-0.009**	-0.009***	-0.022	0.002
	(-1.47)	(-1.33)	(-3.15)	(-1.45)	(0.342)	(0.347)	(-2.50)	(-16.9)	(-1.11)	(0.145)

Cont'd	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-1;+2]					[-0;+0]		
Automotive	-0.023	0.002	-0.024	-0.038	-0.015	-0.006	0.008	0.004	-0.015	0.001
	(-1.13)	(0.081)	(-0.65)	(-1.16)	(-0.86)	(-0.43)	(0.317)	(0.610)	(-1.06)	(0.283)
Oil	-0.012	-0.007	-0.012	-0.013		-0.004	-0.008	0.003	-0.003	
	(-0.81)	(-0.55)	(-0.82)	(-1.01)		(-0.52)	(-1.48)	(0.219)	(-0.58)	
Energy	0.011	0.008	0.001	0.010	-0.002	-0.002	0.005***	-0.006**	0.005**	0.003
	(1.568)	(1.162)	(0.099)	(0.870)	(-0.19)	(-0.26)	(2.690)	(-2.49)	(1.999)	(0.308)
			[-1;+1]							
Pipes	0.011	0.008	0.003	0.015	0.011					
	(0.847)	(0.600)	(0.577)	(0.973)	(1.172)					
Steel	-0.009	-0.009	-0.002	0.000	0.009*					
	(-1.22)	(-1.31)	(-0.15)	(-0.00)	(1.880)					
Iron Ore	-0.008	-0.013	-0.009	0.021	0.042**					
	(-0.56)	(-0.89)	(-0.45)	(1.101)	(2.178)					
Coal	-0.023***	-0.022**	-0.002	0.009	0.003					
	(-3.95)	(-2.03)	(-0.21)	(0.357)	(0.117)					
Agriculture	-0.021	-0.010	-0.051**	-0.034**	-0.006					
	(-1.10)	(-0.77)	(-2.07)	(-2.02)	(-0.45)					
Automotive	-0.006	-0.015	-0.009	-0.032	-0.012					
	(-0.41)	(-0.69)	(-0.24)	(-0.92)	(-0.65)					
Oil	-0.016	-0.014***	-0.009	-0.013						
	(-1.36)	(-3.13)	(-0.56)	(-1.03)						
Energy	0.007	0.007	-0.004	0.010	-0.008					
	(0.988)	(1.029)	(-0.30)	(0.906)	(-0.89)					

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event. "15feb2010" event is missing for the portfolio of oil companies, because none of the oil companies in out sample was traded that day. On 8, February, 2010 grain market outlooks were published and prices of agricultural companies fell due to expectations of good harvests. Significant CAR results for agricultural companies should be associated with this event.

Appendix 3.L. CAR estimation results for 2010 elections events for portfolios of companies.

	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
			[-2;+2]					[-0;+2]		
akhmetov	0.008	-0.028	-0.012	-0.005	0.031	-0.030	-0.008	-0.007	-0.005	0.028
t-test	(0.055)	(-0.374)	(-0.187)	(-0.079)	(0.478)	(-0.415)	(-0.159)	(-0.314)	(-0.081)	(1.013)
pinchuk	-0.037	0.077	-0.022	-0.017	0.062	0.063	0.050	-0.050	0.014	0.029
t-test	(-0.099)	(0.252)	(-0.169)	(-0.117)	(0.826)	(0.225)	(0.190)	(-0.780)	(0.113)	(0.571)
zhevago	0.004	-0.010	-0.042	0.023	0.093	-0.025	-0.015	-0.028	0.047	0.042
t-test	(0.036)	(-0.080)	(-0.588)	(0.170)	(0.512)	(-0.395)	(-0.412)	(-0.859)	(0.436)	(0.228)
			[-2;+1]					[-0;+1]		
akhmetov	0.021	-0.028	-0.004	0.006	0.023	-0.017	-0.007	0.001	0.005	0.021
t-test	(0.153)	(-0.365)	(-0.068)	(0.120)	(0.356)	(-0.206)	(-0.130)	(0.123)	(0.090)	(0.699)
pinchuk	-0.089	0.035	-0.002	-0.021	0.063	0.011	0.008	-0.030	0.009	0.029
t-test	(-0.287)	(0.115)	(-0.014)	(-0.148)	(1.006)	(0.036)	(0.027)	(-0.416)	(0.064)	(0.909)
zhevago	0.008	0.003	-0.038	-0.015	0.119	-0.021	-0.002	-0.023	0.008	0.068
t-test	(0.070)	(0.026)	(-0.517)	(-0.222)	(1.315)	(-0.298)	(-0.127)	(-0.785)	(0.163)	(0.899)
			[-2;+0]					[-0;+0]		
akhmetov	0.015	-0.015	-0.004	-0.007	0.008	-0.023	0.006	0.001	-0.008	0.005
t-test	(0.103)	(-0.192)	(-0.057)	(-0.314)	(0.134)	(-0.279)	(0.111)	(0.238)	(-0.131)	(0.173)
pinchuk	-0.044	-0.018	0.001	-0.050	0.042	0.056	-0.045	-0.028	-0.020	0.009
t-test	(-0.139)	(-0.068)	(0.004)	(-0.780)	(0.668)	(0.195)	(-0.162)	(-0.384)	(-0.144)	(0.277)
zhevago	0.006	0.007	-0.031	-0.028	0.072	-0.023	0.002	-0.017	-0.005	0.021
t-test	(0.050)	(0.057)	(-0.410)	(-0.859)	(1.093)	(-0.326)	(0.112)	(-0.569)	(-0.095)	(0.273)
			[-1;+2]					[-1;+1]		
akhmetov	-0.028	-0.030	0.004	-0.006	0.018	-0.015	-0.030	0.012	0.005	0.011
t-test	(-0.365)	(-0.417)	(0.091)	(-0.094)	(0.290)	(-0.192)	(-0.415)	(0.376)	(0.093)	(0.166)
pinchuk	0.035	0.106	-0.044	0.011	0.034	-0.018	0.063	-0.024	0.007	0.034
t-test	(0.115)	(0.389)	(-0.496)	(0.098)	(0.671)	(-0.068)	(0.225)	(-0.276)	(0.055)	(0.849)
zhevago	0.003	-0.037	-0.020	0.040	0.080	0.007	-0.025	-0.016	0.002	0.107
t-test	(0.026)	(-0.621)	(-0.366)	(0.340)	(0.432)	(0.057)	(-0.395)	(-0.267)	(0.029)	(1.597)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

Appendix 3.M. CAR estimation results for Tymoshenko's arrest.

	[-2;+2]	[-2;+1]	[-2;+0]	[-1;+2]	[-1;+1]	[-0;+2]	[-0;+1]	[-0;+0]
azst	0.000	-0.041*	-0.014	0.000	-0.041**	0.011	-0.031	-0.004
	(0.005)	(-1.701)	(-1.439)	(-0.002)	(-2.013)	(0.175)	(-1.328)	(-0.164)
avdk	-0.048	-0.043	-0.024	-0.064***	-0.059***	-0.050***	-0.045***	-0.026***
	(-1.274)	(-1.121)	(-0.625)	(-3.516)	(-5.339)	(-2.606)	(-5.355)	(-3.177)
hrtr	-0.039	-0.058	-0.027	-0.011	-0.030	-0.004	-0.023	0.008
	(-0.795)	(-1.598)	(-0.882)	(-0.257)	(-0.901)	(-0.089)	(-0.604)	(0.197)
cgok	-0.045	-0.049	-0.054	0.015**	0.011	0.008	0.004	-0.001
	(-0.702)	(-0.759)	(-0.847)	(2.064)	(1.464)	(1.328)	(0.618)	(-0.190)
dnen	-0.026	-0.051	-0.063***	0.007	-0.018	0.018	-0.007	-0.020
	(-0.491)	(-1.324)	(-3.492)	(0.159)	(-0.619)	(0.458)	(-0.201)	(-0.600)
enmz	-0.050	-0.067	0.000	-0.034	-0.052	-0.039	-0.056	0.011
	(-0.651)	(-0.947)	(-0.000)	(-0.436)	(-0.686)	(-0.476)	(-0.716)	(0.141)
shkd	0.058	-0.010	0.106	-0.024	-0.091	0.003	-0.065	0.051
	(0.315)	(-0.054)	(1.098)	(-0.140)	(-0.634)	(0.015)	(-0.390)	(0.304)
sgok	-0.075	-0.058	-0.015	-0.053	-0.036	-0.046	-0.029	0.014
	(-1.588)	(-1.200)	(-0.473)	(-1.101)	(-0.715)	(-0.915)	(-0.507)	(0.246)
kvbz	-0.026	-0.075***	-0.042**	0.000	-0.049**	0.005	-0.043**	-0.011
	(-0.363)	(-2.982)	(-2.333)	(-0.003)	(-1.989)	(0.073)	(-2.011)	(-0.505)
nvtr	-0.216	-0.162	-0.053	-0.384***	-0.330***	-0.245***	-0.191***	-0.082***
	(-0.788)	(-0.574)	(-0.186)	(-5.269)	(-6.762)	(-5.091)	(-7.120)	(-3.060)
unaf	0.073	0.060	0.000	0.076	0.063	0.073	0.060	0.000
	(1.248)	(0.994)	(-0.012)	(1.372)	(1.086)	(1.345)	(1.011)	(0.005)
mmki	0.175	0.170	0.058	0.163	0.158	0.190**	0.185***	0.074**
	(1.387)	(1.362)	(0.654)	(1.286)	(1.263)	(2.049)	(4.997)	(1.998)
svgz	-0.001	-0.108*	-0.037***	0.013	-0.095	0.026	-0.082	-0.011
	(-0.007)	(-1.863)	(-12.27)	(0.086)	(-1.602)	(0.165)	(-1.353)	(-0.176)
almk	0.043**	0.022*	0.016	0.042***	0.022*	0.027*	0.008	0.001
	(2.284)	(1.815)	(1.218)	(2.509)	(1.898)	(1.636)	(1.343)	(0.171)
alkz	0.001	-0.003	-0.002	0.105	0.102	0.124	0.121	0.121
	(0.005)	(-0.013)	(-0.008)	(0.821)	(0.771)	(1.032)	(0.986)	(0.993)
nitr	-0.014	0.003	-0.007	-0.021	-0.004	-0.017	0.001	-0.009
	(-0.573)	(0.162)	(-0.478)	(-0.932)	(-0.226)	(-0.698)	(0.027)	(-0.486)
fxpo	-0.146*	-0.145*	-0.072	-0.124	-0.123	-0.064	-0.063	0.010
	(-1.809)	(-1.939)	(-1.201)	(-1.485)	(-1.588)	(-0.817)	(-0.759)	(0.120)
mhpc	-0.221***	-0.131***	-0.077***	-0.214***	-0.123***	-0.168***	-0.078***	-0.025
	(-3.154)	(-3.157)	(-2.378)	(-3.902)	(-4.796)	(-2.968)	(-2.708)	(-0.854)
ker	-0.045	-0.004	-0.003	-0.042	-0.001	-0.035	0.007	0.007
	(-1.067)	(-0.297)	(-0.260)	(-0.978)	(-0.044)	(-0.763)	(0.926)	(0.963)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

Appendix 3.N. CAR estimation results for Tymoshenko's arrest for a portfolio of Ukrainian companies.

	[-2;+2]	**[-1;+1]**
control_ua	-0.200	-0.395
t-test	(-0.100)	(-0.229)
	[-2;+1]	**[-0;+2]**
control_ua	-0.092	-0.090
t-test	(-0.045)	(-0.069)
	[-2;+0]	**[-0;+1]**
control_ua	-0.355	0.018
t-test	(-0.193)	(0.012)
	[-1;+2]	**[-0;+0]**
control_ua	-0.503	-0.245
t-test	(-0.309)	(-0.170)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

Appendix 3.O. CAR estimation results for Tymoshenko's arrest for a portfolio of International peers.

	Pipes	Steel	Iron Ore	Coal	Agriculture	Automotive	Oil	Energy
[-2;+2]	-0.055	-0.031*	-0.003	-0.045	-0.089*	-0.027	-0.035***	-0.045***
	(-1.164)	(-1.704)	(-0.153)	(-1.153)	(-1.681)	(-0.631)	(-6.587)	(-2.919)
[-2;+1]	-0.075***	-0.031*	-0.015***	-0.056*	-0.099**	-0.050**	-0.029***	-0.032**
	(-2.699)	(-1.807)	(-7.276)	(-1.939)	(-2.328)	(-2.202)	(-5.626)	(-2.125)
[-2;+0]	-0.044*	-0.013	-0.011***	-0.055**	-0.074*	-0.025	-0.022***	-0.023
	(-1.818)	(-1.224)	(-5.097)	(-2.274)	(-1.643)	(-1.517)	(-4.088)	(-1.420)
[-1;+2]	-0.050	-0.024	0.003	-0.034	-0.085	-0.026	-0.029***	-0.040***
	(-1.047)	(-1.254)	(0.157)	(-0.864)	(-1.632)	(-0.608)	(-5.347)	(-2.627)
[-1;+1]	-0.070***	-0.024	-0.010***	-0.047	-0.094***	-0.049***	-0.023***	-0.027*
	(-3.242)	(-1.288)	(-7.800)	(-1.530)	(-2.723)	(-2.917)	(-4.374)	(-1.734)
[-1;+0]	-0.040*	-0.005	-0.006***	-0.045*	-0.069*	-0.024*	-0.016***	-0.017
	(-1.811)	(-0.488)	(-5.709)	(-1.892)	(-1.813)	(-1.859)	(-2.740)	(-0.969)
[-0;+2]	-0.019	-0.016	0.005	0.001	-0.070	-0.007	-0.023***	-0.040***
	(-0.438)	(-0.799)	(0.307)	(0.026)	(-1.270)	(-0.170)	(-4.792)	(-5.720)
[-0;+1]	-0.039*	-0.016	-0.007***	-0.012	-0.078***	-0.031	-0.018***	-0.027***
	(-1.849)	(-0.745)	(-20.81)	(-1.161)	(-2.707)	(-1.596)	(-4.259)	(-3.377)
[-0;+0]	-0.009	0.003	-0.003***	-0.011	-0.054*	-0.006	-0.011***	-0.017**
	(-0.424)	(0.127)	(-9.905)	(-1.080)	(-1.853)	(-0.298)	(-2.629)	(-2.188)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event. Loss in value for international companies can be explained by the sharp decline of stock markets and oil prices on 4 August, 2011, driven by negative expectations concerning global economy.

Appendix 3.P. CAR estimation results for Tymoshenko's arrest and portfolios of companies.

	akhmetov	pinchuk	isd	zhevago
[-2;+2]	-0.016	-0.097	0.076	-0.074
	(-0.153)	(-0.464)	(0.461)	(-0.251)
[-2;+1]	-0.034	-0.034	0.067	-0.127
	(-0.428)	(-0.233)	(0.393)	(-0.734)
[-2;+0]	-0.015	-0.043	0.060	-0.055
	(-0.203)	(-0.320)	(0.342)	(-0.625)
[-1;+2]	0.000	-0.104	0.075	-0.055
	(-0.001)	(-0.535)	(0.463)	(-0.182)
[-1;+1]	-0.018	-0.041	0.066	-0.109
	(-0.227)	(-0.286)	(0.390)	(-0.618)
[-0;+2]	0.010	-0.099	0.078	-0.019
	(0.104)	(-0.533)	(0.515)	(-0.061)
[-0;+1]	-0.007	-0.036	0.068	-0.072
	(-0.084)	(-0.230)	(0.440)	(-0.356)
[-0;+0]	0.012	-0.046	0.061	0.000
	(0.134)	(-0.292)	(0.397)	(-0.001)

Notes: T-statistics is in parenthesis. *** - significance at 1% level; ** - significance at 5% level; * - significance at 10% level. Event window length is indicated in the squared parenthesis [-a;+b], where a is the number of days before the event and b is the number of days after the event.

References

Abadie, Alberto and Javier Gardeazabal. 2003. "The Economic Costs of Conflict: A Case Study of the Basque Country". *American Economic Review* 93(1): 113-32.

Alesina, Alberto and Roberto Perotti. 1996. "Income Distribution, Political Instability and Investment". *European Economic Review* 40(6): 1203–28.

Alesina, Alberto, Sule Ozler, Nouriel Roubini, and Phillip Swagel. 1996. "Political Instability and Economic Growth". *Journal of Economic Growth* 1(2): 189–211.

Arulampalam, Wiji, Sugato Dasgupta, Amrita Dhillon, and Bhaskar Dutta. 2009. "Electoral Goals and Center-state Trasnfers: A Theoretical Model and Empirical Evidence from India". *Journal of Development Economics* 88: 103–119.

Baland, Jean-Marie and James A. Robinson. 2008. "Land and Power: Theory and Evidence from Chile". *American Economic Review* 98(5): 1737-1765.

Baland, Jean-Marie and James A. Robinson. 2012. "The Political Value of Land: Inquilinos, Hacendados and Land prices in Chile". *American Journal of Political Science*, Forthcoming.

Banerjee, Abhijit V., Paul J. Gertler and Maitreesh Ghatak. 2002. "Empowerment and Effiency: Analysis of a Tenancy Reform in West Bengal". *Journal of Political Economy* 110: 239-280.

Banerjee, Abhijit, and Andrew Newman. 1993. "Occupational

Choice and the Process of Development." *Journal of Political Economy* 101: 274–98.

Banerjee, Abhijit. 1999. "Prospects and Strategies for Land Reforms", In B. Pleskovic and J. Stiglitz (eds), *Annual World Bank Conference on Development Economics* 1999. Washington, DC: World Bank, 253-284.

Bardhan, Pranab. 1973. "Size, Productivity, and Returns to Scale: An Analysis of Farm-Level Data in Indian Agriculture". *Journal of Political Economy* 81(6): 1370-1386.

Barrett, Christopher. 1996. "On Price Risk and the Inverse Farm Size-Productivity Relationship". *Journal of Development Economics* 51(2): 193-215.

Barro, Robert. 1991. "Economic Growth in a Cross Section of Countries". *Quarterly Journal of Economics* 106(2): 407–43.

Baum, Cristopher F., Caglayan, Mustafa, Schäfer, Dorothea, and Oleksandr Talavera. 2008. "Political patronage in Ukrainian banking". *Boston College Working Papers in Economics* № 657.

Berry, Christopher R., Barry C. Burden, and William G. Howell. 2010. "The President and the Distribution of Federal Spending". *American Political Science Review* 104: 783–799.

Besley, Timothy, and Robin Burgess. 2000. "Land Reform, Poverty Reduction, and Growth: Evidence from India". *The Quarterly Journal of Economics* 115(2): 389-430.

BG Capital. 2010. "Ukrainian Agriculture. Farming Fortune". *BG Capital Research Report*.

Binswanger, Hans P., Klaus Deininger, and Gershon Feder. 1995. "Power, Distortions, Revolt and Reform in Agricultural

Land Relations". In *Handbook of Development Economics*, Vol. 3B, edited by Jere Behrman and T. N. Srinivasan. Amsterdam: North-Holland.

Boucher, Steve, Michael Carter, and Catherine Guirkinger. 2008. "Risk Rationing and Wealth Effects in Credit Markets." *American Journal of Agricultural Economics* 90(2): 409-423.

Brown, Stephen J., and Jerold B. Warner. 1985. "Using Daily Stock Returns: The Case of Event Studies" *Journal of Financial Economics* 14: 3-31.

Campbell, John, Andrew Lo, and Craig MacKinlay. 1997. "*The Econometrics of Financial Markets*". Princeton: Princeton University Press.

Canto, Viktor A. 1985. "Property Rights, Land Reform, and Economic Well-Being". *Cato Journal* 5(1): 51-66.

Claessens, Stijn and Luc Laeven. 2006. "*International Corporate Finance*" Vol. 2. The World Bank.

Cooper, Michael J., Gulen, Huseyin, and Alexei V. Ovtchinnikov. 2010. "Corporate Political Contributions and Stock Returns". *The Journal of Finance* 65 (2): 687-724.

Corrado, Charles J., and Terry L. Zivney. 1992. "The Specification and Power of the Sign Test in Event Study Hypothesis Tests Using Daily Stock Returns". *The Journal of Financial and Quantitative Analysis* 27(3): 465-478.

Cox, Garry W. and Mathew D. McCubbins. 1998. "Electoral Politics as a Redistributive Game". *Journal of Politics* 48: 370–389.

de Janvry, Alain, Marco Gonzalez-Navarro, and Elisabeth Sadoulet. 2011. "Why are land reforms granting complete property

rights politically risky? Electoral outcomes of Mexico's certification program". Helsinki: *WIDER working paper*.

Deininger, Klaus, Gershon Feder, Isabel Lavadenz, Mike Nowak, Laura Tlaiye, and Rogier van den Brink. 2004. *Land Policy Research Report: Principal Lessons and Next Steps*. Washington D.C.: The World Bank.

Dell, Melissa. 2010. "The Persistent Effects of Peru's Mining Mita". *Econometrica* 78(6):1 863-1903.

Dell, Melissa. 2012. "Path Dependence in Development: Evidence from the Mexican Revolution". *Working paper*. Available online: < http://scholar.harvard.edu/dell/publications/path-dependence-development-evidence-mexican-revolution> [Accessed 16 January, 2013].

Democratic Initiatives Foundations. 2011. *Democratic freedoms and democracy in Ukraine: interviews with experts*. DIF. Accessed February 21, 2012. http://dif.org.ua/ua/press/ugioip

Dmytrycheva, O., S. Rakhmanin, and Yuliya Mostova. 2002. Five sources, five composite parts of the Bloc "Za Yedynu Ukrainu!". *Dzerkalo Tyzhnya #11*, March 23, 2002. Available online: < http://dt.ua/POLITICS/pyat_dzherel,_pyat_skladovih_chastin_bloku_za_edinu_ukrayinu-27698.html > [Accessed 18 September, 2012].

Faccio Mara. 2006. "Politically connected firms". *American Economic Review* 96 (1): 369-386.

Faccio Mara. 2010. "Differences between politically connected and

non-connected firms: a cross country analysis". *Financial Management* 39: 905-928.

Fama, Eugene. 1970. "Efficient Capital Markets: A Review of Theory and Empirical Work". *Journal of Finance* 25(2): 383-417

Fan, Joseph P. H., Wong, T.J., and Tianyu Zhang. 2007. "Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms". *Journal of Financial Economics* 84 (2): 330-357.

Federal Statistical Office. 2010. *Farm size in Germany*. Accessed May 27, 2012. https://www.destatis.de/EN/Homepage.html

Ferguson, Thomas and Hans-Joachim Voth. 2005. "Betting on Hitler: The Value of Political Connections in Nazi Germany". *CEPR Discussion Paper* № 5021.

Fisman Raymond. 2001. "Estimating the value of political connections". *American Economic Review* 91 (4): 1095-1102.

Galor, Oded, and Joseph Zeira. 1993. "Income Distribution and Macroeconomics." *Review of Economic Studies* 60: 35–52.

Goldman, Eitan, Rocholl, Jorg, and Jongil So. 2009. "Do politically connected boards affect firm value?" *Review of Financial Studies* 22: 2331-2360.

Goriaev, Alexei and Konstantin Sonin. 2005. "Is Political Risk Company-Specific? The Market Side of the Yukos Affair". *William Davidson Institute Working Paper* № 772.

Grossman, Herschel I. 1994. "Production, Appropriation, and Land Reform". *The American Economic Review* 84(3): 705-712.

Grossman, Philip J. 1994. "A Political Theory of Intergovernmental

Grants". *Public Choice* 69: 295–303.

Guidolin, Massimo and Eliana La Ferrara. 2007. "Diamonds are Forever, wars are Not: Is conflict bad for Private Forms?" *The American Economic Review* 97(5): 1978-1993.

Guidolin, Massimo and Eliana La Ferrara. 2010. "The Economic Effects of Violent Conflict: Evidence from Asset Market Reactions". *Journal of Peace Research* 47(6): 671-684.

Heritage Foundation. 2011. *Index of Economic Freedom*. Accessed February 20, 2012. http://www.heritage.org/index/default

ISNASU. 2010, 2011. *Assessment of land reform in Ukraine. Institute of Sociology of National Academy of Sciences of Ukraine for State Land Resource Agency of Ukraine as part of the World Bank project*. Accessed February 20, 2012. http://zemreforma.info/index.php?option=com_content&view=article&id=512%3A-2011-&catid=67%3A2011-03-27-17-18-44&lang=uk

iVOX Ukraine. 2012. *Changes in life of Ukrainians in 2011*. iVOX Ukraine for Economic Pravda. Accessed February 21, 2012. http://www.epravda.com.ua/publications/2012/02/21/316533/

Johnson, Nancy. 2001. "Tierra y Libertad: Will Tenure Reform Improve Productivity in Mexico's Ejido Agriculture?" *Economic Development and Cultural Change* 49(2): 291-309.

Keefer, Philip. 2007. "Clientelism, Credibility, and the Policy Choices of Young Democracies". *American Journal of Political Science* 51(4): 804-821.

Kim, Harold and Jianping Mei. 2001. "What Makes the Stock Market Jump? An Analysis of Political Risk on Hong Kong Stock Returns". *Journal of International Money and Finance* 20: 1003–1016.

King, Rusell. 1977. "*Land reform: a world survey*". Westview Press Boulder.

Kornatskyy, Arkadiy. 2011. Land is being collected for "the Family". *Economic Pravda, December 11*. Accessed February 23, 2012. http://www.epravda.com.ua/publications/2011/12/11/309274/

Kumar, Krishna B., Raghuram G. Rajan and Luigi Zingales. 1999. "What determines firm size?" *NBER Working Paper* 7208, July 1999.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1997. "Legal Determinants of External Finance". *Journal of Finance* 52(3): 1131–1150.

Landkom. 2009. "*Report and Accounts 2009*". Annual Report. Landkom International Plc. Accessed December 15, 2011. http://www.landkom.net/

Landkom. 2010. "*Report and Accounts 2010*". Annual Report. Landkom International Plc. Accessed December 15, 2011. http://www.landkom.net/

Levitt, Steven D. and James M. Snyder. 1995. "Political Parties and the Distribution of Federal Outlays". *American Journal of Political Science* 39: 958–980.

Lindbeck, Assar and Jorgen W. Weibull. 1987. "Balanced-Budget

Redistribution as the Outcome of Political Competition". *Public Choice* 52: 237–297.

Lucas, Robert E., Jr. 1978. "On the Size Distribution of Business Firms". *Bell Journal of Economics* 9: 508-523.

MacKinlay, Craig. 1997. "Event studies in economics and finance". *Journal of Economic Literature* 35(1): 13-39.

Malefakis, Edward E. 1970. "*Agrarian reform and Peasant Revolution in Spain*". New Haven, CT: Yale University Press.

Mauro, Paolo . 1995. "Corruption and Growth". *Quarterly Journal of Economic*s 110(3): 681–712.

Maury, Benjamin, and Eva Liljeblom. 2009. "Oligarchs, Political Regime Changes, and Firm Valuation". *Economics of Transition* 17 (3): 411-438.

Mookherjee, Dilip. 1997. "Informational Rents and Property Rights in Land". In John E. Roemer ed. Property Rights, *Incentives and Welfare*, MacMillan, London UK.

Olinto, Pedro, and Klaus Deininger. 2002. "Land Property Rights, Rental Markets, and Rural Poverty: Theory and Evidence From the Mexican Ejido". *World Bank working paper.*

Pelykh, Lyubomyr. 2008. "Evaluating impacts of news on stock returns in Ukraine". *EERC MA Thesis.*

Polish Statistics Office. 2012. "*Average farm size*". Accessed May 27, 2012. http://www.gus.pl/

Rannaissance Capital. 2010. "*Ukrainian Crops: Farm over Traders*". Equity Research Report, August 27.

Rating Group. 2011. "*National survey on dynamics of freedom of*

speech". Sociological group "Rating". Accessed February 20, 2012. http://ratinggroup.com.ua/upload/files/RG_svoboda_slova_112011.pdf

Razumkov Center. 2010. "*Survey on the level of democracy in Ukraine*". Accessed February 20, 2012. http://www.uceps.org/ukr/poll.php?poll_id=562

Razumkov Center. 2011. "*Survey on the direction of reforms in Ukraine*". Accessed February 20, 2012. http://www.uceps.org/ukr/poll.php?poll_id=66

Robinson, James A. and Thierry Verdier. 2003. "The Political Economy of Clientelism". *CEPR Discussion Paper no. 3205*. London, Centre for Economic Policy Research.

Roth M, Valletta W. 2006. Land Reform and Land Market Development in Ukraine. *USAID Report* (June).

Shalit, S. S. and U. Sankar. 1977. "The Measurement of Firm Size". *The Review of Economics and Statistics* 59(3): 290-298.

Snyder, James M. 1991. "On Buying Legislatures". *Economics and Politics*, 2: 93-110.

Solle-Olle, Albert and Pilar Sorribas-Navarro. 2009. "Does Partisan alignment affect the electoral reward of intergovernmental transfers?" *mimeo*, Universitat de Barcelona.

State Agency of Land Resources of Ukraine. 2012a. "*Reformation of Land Relationships*". Available online: < http://www.dazru.gov.ua/terra/control/uk/publish/category?cat_id=36903> [Accessed 13 September, 2012].

State Agency of Land Resources of Ukraine. 2012b. "*Reformation of*

Land Relationships". Available online: < http://www.dazru.gov.ua/terra/control/uk/publish/category?cat_id=36903> [Accessed 13 September, 2012].

State Statistics Service of Ukraine. 2012. "*Time series of average monthly wages by types of economic activity (1995-2011)"*. State Statistics Service of Ukraine. Available online: <http://ukrstat.gov.ua/> [Accessed 12 September, 2012].

State Statistics Service of Ukraine. 2012. "*GDP production and distribution, by types of economic activity"*. Accessed February 23, 2012. http://ukrstat.gov.ua/

Transparency International. 2011. "*Corruption Perception Index"*. Accessed February 20, 2012. http://www.transparency.org/policy_research/surveys_indices/cpi

Tuma, Elias H. 1965. "*Twenty-six Centuries of Agrarian Reform: A comparative analysis"*. University of California Press.

Ukrainian Parliament Commissioner for Human Rights. 2004. "*Property rights of Ukrainian citizens for land"*. Report of the Commissioner 2004. Available online: <http://www.ombudsman.kiev.ua/Dop_3/d3_zm.htm> [Accessed 13 September, 2012].

Ukrainian Parliament Commissioner for Human Rights. 2008. "*Property rights of Ukrainian citizens for land"*. Report of the Commissioner 200". Available online: <http://ombudsman.kiev.ua/dopovid_5/d_05_4_3.htm> [Accessed 13 September, 2012].

Ukrainian Parliament Commissioner for Human Rights. 2010.

"*Property rights of Ukrainian citizens for land*". Report of the Commissioner 2004. Available online: <http://www.ombudsman.kiev.ua/dopovid_6/d_06_3_5.htm> [Accessed 13 September, 2012].

UNITER. 2011. "*Corruption in Ukraine. Comparative Analysis of National Surveys: 2007–2009, 2011*". UNITER, Kyiv. Available online: <http://uniter.org.ua/data/block/corruption_in_ukraine_2007-2009_2011_engl.pdf> [Accessed 13 September, 2012].

Venieris, Yiannis and Dipak Gupta. 1986. "Income Distribution and Sociopolitical Instability as Determinants of Savings: A Cross-sectional Model". *Journal of Political Economy* 94(4): 873–83.

Wantchekon, Leonard. 2003 "Clientelism and Voting Behaviour: Evidence from a Field Experiment in Benin". *World Politics* 55(3): 399-422.

Warriner, Doreen. 1969. "*Land reform in principle and practice*". Clarendon Press.