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## **Impact of Political Regime Shift on Stock Returns of Oligarch Firms**

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**Abstract**

We study the evolution of the stock prices of 17 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 we find that political connections do matter in Ukraine. Companies that are strongly linked with the two major Ukrainian parties (Orange coalition and Party of Regions) are sensitive to shifts of the political regime.

**Keywords:** Oligarchs, regime shift, Orange revolution, Tymoshenko, political connections, Ukraine, event study.

## TABLE OF CONTENTS

Chapter 1. <i>Introduction</i> .....	5
Chapter 2. <i>Political Background</i> .....	7
Chapter 3. <i>Sample description and data</i> .....	12
Chapter 4. <i>Model specification and estimation strategy</i> .....	15
Chapter 5. <i>Estimation results</i> .....	17
Chapter 6. <i>Conclusions</i> .....	26
Appendices A-M	

## **Non-technical summary**

Political connections are important determinant of companies' value in non-transparent economies with weak legal system. Firms close to ruling party may have preferential access to privatization, loans, and subsidies, while businessmen loyal to opposition may face repressive regulation.

This research quantifies the influence of political connections on firms' valuation in Ukraine by examining stock returns. We found out which oligarch companies gained and lost value due to Orange revolution in 2004 and from the come-back of political rival in 2010.

Most of the obtained results were consistent with our apriory expectations, indicating that political connections do matter in Ukraine. The magnitude of political events' impact on oligarch companies is significantly different from the magnitude found for the companies without political connections. The results suggest that companies of businessmen close to the President or Prime Minister are very sensitive to political shocks. Firms whose owners do not exhibit any political loyalties do not react significantly to political regime shifts. The finding that investors take into account political loyalties is very important for Ukrainian companies' corporate governance.

## Introduction

During the last eight years Ukraine has 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 Yanukovich, 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 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 impact of such shifts. This paper 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. International investors now treat Ukraine quite cautiously, despite historical high returns. 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 Yanukovich to come to power. The surprise effect of the 2004 and 2010 election results reduces the anticipation effect<sup>1</sup> 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 benefited from the Orange Revolution and from the come-back of Yanukovich in 2010. Also we want to understand the 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 Yanukovich - 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 Yanukovich could have increased the value of pro-Yanukovich groups. Campaign contributors could obtain preferential access to privatization, bank loans, VAT refunds, etc, while opposition businessmen faced the risks of

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<sup>1</sup>An anticipation of the 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 will absorb information about the event results.

re-privatization and repressive regulations. For example, Viktor Pinchuk, whose father-in-law Leonid Kuchma was the President of Ukraine until 23 January 2005, in 2004 together with Rinat Akhmetov privatized the steel plant Kryvorizhstal. However, after the Orange Revolution these businessmen had to re-sell the plant to the state. Moreover, in 2011 when Yanukovych was 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 devoted to 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-Joachim 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) analysed the impact of news on stock returns of Indonesian companies linked with the Suharto regime. He discovered that rumours about Suharto's health problems significantly affected companies affiliated to him and his family. In 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 in Russia. 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. Gorjaev and Sonin (2005) analysed government actions against oil company Yukos in 2003. They determined how sensitive the companies were to news related to Yukos and find that Yukos news had significant impact on non-transparent oil companies.

Contrary to previously mentioned studies, research of Joseph Fan et al. (2007) doesn't support the hypothesis that political connections add value to companies. Having analysed the 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. Researchers explain such a situation by the bad quality of corporate governance and 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. Researchers 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 specification of a market model to determine the correlation 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 paper contributes to the existing literature by following the same oligarchs' 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 a framework of a developing country with a fast changing political and legal environment.

The rest of the paper proceeds as follows. Section 2 provides the background of the political situation in Ukraine and gives a brief introduction to Ukrainian oligarchs. Sections 3 and 4 describe the data and methodology. Finally, section 5 is devoted to the discussion of the estimation results.

## **Political Background**

### *Political expectations in 2004 and 2009*

In 2004 the Prime Minister of Ukraine was Viktor Yanukovich. 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 serious rival was Viktor Yushchenko, who was 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 Yanukovich 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 Yanukovich. Moreover, 65% of respondents considered Yanukovich 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%, Yanukovich's – 41.9%. As elections approached, more and more people bet on Yanukovich. Yushchenko, on the other hand, was having very serious health troubles, possibly as the result of a poisoning. On November 10, 2004 the Central Election Committee officially announced the results of the first round of the Presidential elections: Yushchenko received 39.87% votes, Yanukovich - 39.32%. The results of the second round, officially announced on November 24, 2004 were in favour of Yanukovich (he received 49.46% votes, Yushchenko – 46.61%). This caused massive protests throughout the country which gave rise to the Orange Revolution. Yushchenko and Tymoshenko along with other opposition politicians were asking 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 falsification of elections. Being pressed by the public, the Parliament appointed a new day for the re-elections. On December 21, 2004 Razumkov Centre announced the results of an opinion poll: the level of support of Yushchenko and Yanukovich 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 populist budget decisions. For example, according to 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 could suppress the pro-Yanukovich businessmen, while she was in power. 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.

In November 2009, according to the Razumkov Centre, 35.2% of Ukrainians were ready to support Yanukovich 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, Yanukovich 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. The main competition was around the redistribution of their supporters' votes after the first round results in which Tihipko received 13% of votes and Yatsenyuk 7% of votes<sup>2</sup>. The former head of Yushchenko's administration Viktor Baloga predicted the victory of Yanukovich in November 2009. Meanwhile Tihipko said that he might be the Prime Minister both under Tymoshenko's and Yanukovich's presidency. In the first round of 2010 elections Yanukovich 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 Yanukovich and Tymoshenko. So the outcome of the second round was not obvious. For example, in January 2010 the Ukrainian Institute of Social Research forecasted equal votes for Tymoshenko and Yanukovich. Nevertheless, based on the second round results, Yanukovich 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, 2011. This was a complete surprise for Ukrainian society. Although political prosecutions started earlier, no one, including investors, did expect such a turn of events. Politologists forecasted that Tymoshenko wouldn't be placed under arrest. Volodymyr Fesenko, director of Centre of Applied Political Studies "Penta" said on June, 22, that Tymoshenko could at maximum receive a suspended sentence. On July, 22, Tymoshenko's attorney Serhiy Vlasenko warned about the possible arrest. Member of Parliament Volodymyr Oliynyk made a rebuttal on behalf of Party of Regions. He said that Vlasenko's claims were groundless.

### *Oligarchs and their political loyalty*

In our research we consider 8 politically powerful businessmen/business groups and their listed companies stocks of which were frequently traded during our events of interest (see Table 1 and Table 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 to 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 Dnipropetrovsk region.

Oligarchs tend to be engaged actively into Ukrainian politics as this is a good way to protect their businesses and lobby favourable laws. Usually, oligarchs are the main sponsors/donors of political campaigns, especially during election times. According to official reports of election campaigns, Yuliya Tymoshenko and Viktor Yanykovich, spent UAH<sup>3</sup>290 million and UAH 322 million respectively<sup>4</sup> 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 higher: the preparation to the first round cost these two candidates around USD 400 million. The Ukrainian legislation does not oblige candidates to declare main campaign contributors. However, the

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<sup>2</sup>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.

<sup>3</sup>10 UAH ~ 1 EUR or 8 UAH ~ 1 USD

<sup>4</sup>The reports were published in the governmental newspaper "Uriadovyy Kur'yer" on 25.02.2010.



loyalties become evident when the elected President starts to grant preferential treatment to certain business groups.

Table 1 describes a sample of oligarchs considered in this research.

**Table 1. Political loyalties of Ukrainian oligarchs.**

Oligarch	Value, \$ million	Political loyalty	Official position
Rinat Akhmetov	16000	Yanukovych	Member of Parliament since 2007, 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 Parliament since 2007, delegate from BYUT
Yuriy Kosyuk	1300	Ambiguous	His business-partner is Ihor Tarasyuk, formerly Member of Parliament, delegate from Yushchenko's party "Our Ukraine", until 2010 head of President's office
Andriy Verevs'kyy	1000	Ambiguous	Member of Parliament since 2007, delegate from BYUT, switched to Party of Regions
Serhiy Tihipko	989	Yanukovych	Vice-Prime Minister since March 2010, № 3 in current electoral list of Party of Regions
Serhiy Taruta (ISD)	780	Orange coalition	-
Oleg Mkrтчan (ISD)	780	No information	-
Vitaliy Haiduk (ISD)	495	Tymoshenko	Secretary of the Security Council in 2006-2007, head of Tymoshenko's advisors group

Source: Forbes, government agencies and other open sources.

Rinat Akhmetov with total assets amounting up to USD 16 billion is the richest person in Ukraine and one of 20 richest Europeans, according to Forbes richest list-2012<sup>5</sup>. 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 campaigns. Being a non-public person, Akhmetov has neither confirmed nor denied these claims. However, the attitude of authorities during the

<sup>5</sup> <http://www.forbes.com/billionaires/list/>

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-producing companies Kyivenergo and Zakhidenergo. Also in December 2011 DTEK and the Ministry of Energy and Coal Industry 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-producing market in Ukraine. However, in the last years Akhmetov has been no longer 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<sup>6</sup>, Pinchuk said that he has always voted for Yanukovych in all 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 Secretary of the Security Council and 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, oil and gas, transport and energy distribution. Ihor Kolomoyskyy is responsible for government relations. He adheres to an opportunistic position. According to politologists, he funded 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 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, his companies were visited by armed state security squads.

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<sup>6</sup>Forbes Ukraine, April 2012.

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

Yuriy Kosyuk and Andriy Verevs'kyi are oligarchs of new generation, whose success is not based on the privatization of Soviet enterprises. Both of businessmen built 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 got listed on the Warsaw Stock Exchange and the latter - on the London Stock Exchange.

Table 2 lists all of the oligarch's companies. Not all of them, however, were 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.

**Table.2 Oligarch companies listed on stock exchanges**

<b>Oligarchs</b>	<b>Public companies</b>	<b>Tickers</b>
<b>Rinat Akhmetov</b>	<b>Metallurgy. Metinvest Holding:</b> Azovstal Avdiyiv Cokery Plant Khartsyzsk Tube Works Central mining and processing complex (GOK) Nothern GOK Inguletsky GOK Yenakiyevo Metallurgical Plant Mariupol Metallurgical Plant (belongs to Akhmetov since 2010) <b>Coal and energy. DTEK holding:</b> DTEK Komsomolets Mine Dniproenergo Pavlogradvugillya	AZST AVDK HRTR CGOK SGOK IGOK ENMZ MMKI  SHKD DNEN PGVL
<b>Viktor Pinchuk</b>	<b>Metallurgy:</b> INTERPIPE Nyzhnodniprovsky Tube-Rolling Plant INTERPIPE Novomoskovsk Pipe-Production Plant Nikopol Ferroalloy Plant Dniprospezstal (owned it till 2008) <b>Finance.</b> Ukrsotsbank (till 2008)	NITR NVTR NFER DNSS USCB
<b>ISD</b> Serhiy Taruta Vitaliy Haiduk (till 2010) Oleg Mkrtschan	<b>Metallurgy:</b> Dniprovsky Iron and Steel Integrated Works n.a.Dzerzhynsky Alchevsk Metallurgical Plant Alchevsk Cokery Plant	DMKD ALMK ALKZ
<b>Pryvat Group</b> IhorKolomoyskyi	<b>Metallurgy:</b> Zaporizhzhya Ferroalloy Plant	ZFER

Hennadiy Boholyubov Olexiy Martynov	Marganets GOK Southern GOK (till end 2007) <b>Chemicals:</b> Dniproazot <b>Oil:</b> Ukrnafta (40%)	MGZC PGZK DNAZ UNAF
<b>Kostiantyn Zhevago</b>	<b>Metallurgy:</b> Ferrexpo Poltava GOK <b>Machinery:</b> Stakhanov Vagon Building AvtoKraz <b>Pharmaceuticals:</b> KyivMedPreparat Galychfarm Finance: Bank Finance and Kredit	FXPO PGOK  SVGZ KRAZ  KMED GFARM FIKR
<b>Serhiy Tihipko</b> <b>Serhiy Tihipko</b>	<b>Machinery:</b> Dneprovagonmash Kryukiv Vagon Building (until July 2012) <b>Finance:</b> TAS Biznesbank	DNVM KVBZ BSST
<b>Cont'd</b>		
<b>Oligarchs</b>	<b>Public companies</b>	<b>Tickers</b>
<b>Yuriy Kosyuk</b>	<b>Agriculture:</b> Myronivs'kyi Hliboproduct	MHPC
<b>Andriy Verevs'kyi</b>	<b>Agriculture:</b> Kernel	KER

Sources: companies' data, Agency on Stock Market Infrastructure Development ([www.smida.gov.ua](http://www.smida.gov.ua)), Forbes Databases.

### Sample description and data

Table 3 presents the 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.

**Table 3. Events in the sample**

<b>Event Date</b>	<b>Event Description</b>
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

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 highest 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 has won the 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<sup>7</sup>. Central Elections Committee made an official announcement that Yanukovych has become 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 expectations of investors, probably even those trading stocks of firms close to Yanukovych.

<sup>7</sup>Remaining 5.58% of votes were "against all candidates", an option usually available in the ballot.

**Table 4. Sample of companies vs. events**

<b>Companies</b>	<b>2004 elections</b>	<b>2010 elections</b>	<b>Tymoshenko's arrest</b>
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
<b>Total</b>	<b>3</b>	<b>13</b>	<b>19</b>

Appendix 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 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. More than two days before/after the event is undesirable to use, because there were many other events happening at the time that could have biased 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.

**Table 5. Control sample of Ukrainian companies vs. events.**

<b>Companies</b>	<b>2004 elections</b>	<b>2010 elections</b>	<b>Tymoshenko's arrest</b>
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	
gln			1
agt			1
avgr			1
mlk			1
<b>Total</b>	<b>2</b>	<b>20</b>	<b>22</b>

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 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. In total it contains 47 companies. The selection procedure was done by interviewing experts and investment analysts. The criteria for the inclusion in the sample are mainly based on the experts' opinions and knowledge of the industries, plus the company should have 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 A.

### **Model specification and estimation strategy**

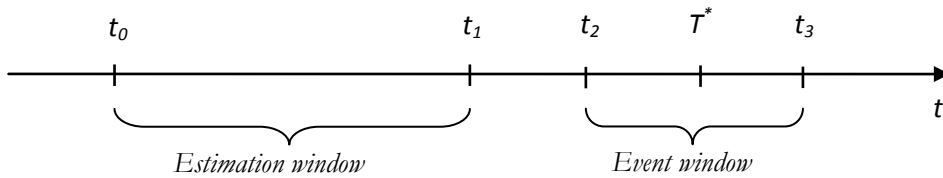
The methodology used in this research is the one described by Campbell, Lo and MacKinlay (1997). An efficient stock market reacts to news and, therefore, the impact of political events should be captured by the unexplained residual of the market model, called abnormal returns:

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

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 and 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 was 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 was used to estimate model (1) for this stock. Also model (1) includes the return on PFTS/UX Index along with the market index for all 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 Appendix A,B and C for a detailed description of indices and which companies they were 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 do not reflect any other company specific information. Return 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 was used along with OLS as it is supposed to give efficient estimators when dealing with financial data.

**Graph 1. Event and estimation windows timeline.**



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 Graph 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 the 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:

$$e_t = r_t - \hat{\alpha} - \hat{\beta}r_t^M - \hat{\gamma}S_t^+ - \hat{\delta}S_t^- - \hat{\omega}r_t^I \quad (2)$$

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 had 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 have influenced 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 had 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:

$$e_t = \delta + \gamma I_t + \epsilon_t \quad (3)$$

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  $\gamma$  measures the effect of events associated with 2004,

2010 elections and Tymoshenko's arrest on the returns of oligarchs' companies. If  $\gamma$  appears to be significant, then it means that events under consideration affect the value of oligarchs' companies.

A different specification of the model (3) is also estimated in order to separate the effect events have on companies associated with Yanukovich and Tymoshenko. The following specification is estimated:

$$e_t = \delta + \gamma I_t + \mu(Yh * I_t) + \rho(T * I_t) + \epsilon_t \quad (4)$$

where  $\mathbf{Y}$  is a dummy variable taking a value of 1 if a company is associated with pro-Yanukovich oligarchs, and 0 otherwise.  $\mathbf{T}$  is a dummy variable taking a value of 1 if a company is associated with pro-Tymoshenko oligarchs, and 0 otherwise.  $Yh * I_t$  is an interaction term between  $I_t$  and  $Yh$ .  $Th * I_t$  is an interaction term between  $I_t$  and  $Th$ . Specification (4) is performed, because if one pools all the companies together, both pro-Yanukovich and pro-Tymoshenko, then the overall effect that events have on the value of the companies may become zero. If an event is considered positive for pro-Tymoshenko companies, there is a high probability that it is considered negative for pro-Yanukovich companies, hence, these effects may be cancelled out on average. Inclusion of interaction terms  $Yh * I_t$  and  $T * I_t$  should take care of this issue. Note that in dummy regressions we pool all companies together, both from the control and the main samples.  $Yh$  and  $T$  variables are not included into the model (4) themselves due to multicollinearity issue, they are being dropped in the regressions.

Specification (4) is not estimated for the 2004 elections sample, because of the small number of companies in it. At most 2004 sample includes three companies: one from the control group, one from the pro-Tymoshenko group and the other one from the pro-Yanukovich group. Hence, interaction terms are collinear with the panel variable id and are being dropped from the regression.

## Estimation results

### *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 Yanukovich and his political campaigns; hence, it is apriory expected that investors of AZST react positively to the victory of Yanukovich 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 Yanukovich. 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 E contains a table with expected reactions of the returns of oligarchs' companies to the events in our sample.

First, we perform a dummy regression approach in order to estimate the overall market reaction to the events in the sample (model (3)). "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 the sample that includes both control group companies (MMKI and UTLM) and the companies from the main sample (AZST, UNAF and NITR). Results show significance of coefficients on the “10nov2004” and “29dec2004” events. The combined effect of the announcement of the first round election results is 17.2 percentage points and it is negative. While the effect of preliminary re-elections results amounts to 51.6 percentage points and is also negative. Overall, all of the events from the 2004 sample had a negative impact on the abnormal returns of the companies under consideration. This is not surprising as any event that causes a major distress in the economic and social life of the country would be perceived negatively by investors, because such events lead to instability and high uncertainty.

**Table 6. Dummy regression approach results for 2004 elections events.**

AR	01nov2004	10nov2004	27dec2004	29dec2004
Event dummy	-0.350	-0.172*	-0.263	-0.516*
t-stat	(-1.240)	(-1.710)	(-1.050)	(-1.680)
obs	1033	1033	1033	1385

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

Now we relax constraints on the coefficients and run company specific regressions. Table 7 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 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 7, 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 7. CAR estimation results for 2004 elections events and event window [-1;+0].**

	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005
<b>azst</b>	-0.088***	-0.086**			-0.119***	0.165	0.135
t-stat	(-3.167)	(-2.046)			(-4.683)	(0.631)	(0.436)
<b>unaf</b>	0.172	-0.177	-0.070***	0.055***	0.014	0.118***	
t-stat	(0.773)	(-1.432)	(-2.548)	(3.110)	(0.162)	(6.736)	
<b>nitr</b>						-5.567***	
t-stat						(-3.080)	
<b>control_ua</b>	-0.257**	-0.106**		0.135	-0.018*	-0.057**	-0.081**
t-stat	(-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 7 also contains CAR estimation results for the control portfolio of Ukrainian companies without political connections. Appendix G contains the rest of the estimation results for this portfolio. “24nov2004” event is

missing from Table 7, because none of the companies in the portfolio has trade quotes around this date. CAR results for the control portfolio show that negative reaction of the market to the 2004 elections events. This is not surprising as it was the period of high instability. Also, control portfolio results differ greatly from the main sample results by magnitude that is an indicator that investors of politically connected companies react to political events differently than those of the non-connected firms.

Results of CAR estimation for the portfolio of international peers of companies in our main sample are presented in Appendix 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 for 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 is 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 have 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 is almost 10 times less than the fall of AZST returns). We also see no significant effect of the last two events in Table 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 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 Orange Revolution and the official announcement of Yanukovych winning 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 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 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 is going to happen next and whether army forces will be involved. Also, because Ukrnafta is partly state-owned, investors might have been frightened of the crisis in the state management. Hence, it is understandable why UNAF returns experienced 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 is going to be the next President of Ukraine. This means 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 support 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 apriory 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 came 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 'illegally' 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.

### *2010 Presidential Elections*

First, we perform dummy regressions for the 2010 elections events estimating model (4). Table 8 below presents the results. Coefficient on the *Event\_dummy* shows the reaction of investors of firms without political connections, while  $Y*Event\_dummy$  and  $T*Event\_dummy$  show the reaction of investors of pro-Yanukovych and pro-Tymoshenko companies correspondingly. The results suggest that on average reaction of investors of politically connected companies to the events in our sample is opposite to the reaction of investors of companies without

political connections. The signs and the magnitudes of the coefficients on  $Y*Event\_dummy$  and  $T*Event\_dummy$  is the almost identical for all of the events. This is a direct indication that political connections do matter. It seems like investors of companies that support different politicians have the same reaction to the 2010 elections results. Apparently, the availability of political connections is the most important for investors, but it does not matter who exactly the oligarch in question is supporting.

**Table 8. Dummy regression approach results for 2010 elections events.**

<b>AR</b>	<b>18jan2010</b>	<b>19jan2010</b>	<b>08feb2010</b>	<b>10feb2010</b>	<b>15feb2010</b>
<b>Event dummy</b>	0.037	-0.355**	-0.006	-0.439**	-0.422**
t-stat	(0.09)	(-2.14)	(-0.02)	(-2.15)	(-2.04)
<b>Y*Event_dummy</b>	-0.040	0.350**	-0.002	0.440**	0.434**
t-stat	(-0.10)	(2.11)	(-0.02)	(2.16)	(2.09)
<b>T*Event_dummy</b>	-0.035	0.352**	-0.004	0.442**	0.433**
t-stat	(-0.09)	(2.12)	(-0.01)	(2.17)	(2.08)
obs	14325	14325	14462	14462	14462

**Notes:** T-statistics is in parenthesis. \*\*\* - significance at 1% level; \*\* - significance at 5% level; \* - significance at 10% level. Abnormal returns is a dependent variable.  $Y*Event\_dummy$  is a variable  $(Y * I_t)$  from the model (4) and  $T*Event\_dummy$  is a variable  $(T * I_t)$  from the model (4).

Interestingly, investors' reaction to "19jan2010" (official first round elections results), "10feb2010" (official second round elections results) and "15feb2010" (official announcement of the new President of Ukraine) is statistically significant. Hence, only events of the official character had a significant impact on financial markets.

Next we perform company specific regressions using event study methodology. 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 in 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 G. Results for other event windows for the portfolio of Ukrainian companies without political connections and international peers can be found in Appendices H and I, respectively.

**Table 9. CAR estimation results for 2010 elections events and event window [-1;+0].**

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

Abnormal returns of Akhmetov's company AZST increased as a reaction to the first round results announcement (events "18jan2010" and "19jan2010"), when Yanukovich 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 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 9). Investors of AVDK, however, reacted negatively to "18jan2010" and "10feb2010" events. This could either mean that investors of this company expected Yanukovich to win with larger difference in votes between him and Tymoshenko or investors perceived that having Yanukovich as the President could mean the riskiness of Ukrainian assets going up. At the time experts were expecting the rule of Yanukovich 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 Yanukovich being the President, connections or no connections. Also, AVDK is mostly popular among local investors that have mostly negative perceptions of political and economic situation in Ukraine during Yanukovich's Presidency, while AZST shares are traded by foreign players.

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 for the "15feb2010" event, when Yanukovich was officially announced the President. As stated earlier, Yanukovich'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 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 raider, and his exit was 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 Yanukovich in his campaigns, investors of NVTR perceived the victory of Yanukovich as a negative sigh 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. The same can be said about the portfolio of international peers of our companies (see Appendix I). Incidentally, the magnitudes of the effects that political events have on politically connected companies vs. firms without political connections are very different. Coefficients of control portfolio in Table 9 are much larger than coefficients of individual companies (with the exception of "08feb2010" event). Hence, reaction of investors of companies without political connections to political events is significantly different when compared to reaction of investors of companies with connections.

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 for Akhmetov (includes AZST, AVDK, DNEN and ENMZ), Pinchuk (includes NITR and NVTR) and Zhevago (includes SVGZ and FXPO). Table 10 reports results of portfolio estimation for an event window [-1;+0], while results for other event windows can be found in Appendix J.

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 9 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 the political loyalty of this oligarch as he supported Tymoshenko during 2010 elections.

**Table 10. CAR estimation results for 2010 elections events and event window [-1;+0] for portfolios of companies.**

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

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

*Tymoshenko's arrest*

The final event in our sample is the arrest of Yuliya Tymoshenko that happened on August 5, 2011. Results of dummy regression approach are presented in Table 11 that contains estimation results of model (4).

**Table 11. Dummy regression approach results for Tymoshenko’s arrest.**

AR	05aug2011
<b>Event dummy</b>	-0.185***
t-stat	(-2.37)
<b>Y*Event_dummy</b>	0.210***
t-stat	(2.57)
<b>T*Event_dummy</b>	0.203***
t-stat	(2.54)
obs	27654

**Notes:** T-statistics is in parenthesis. \*\*\* - significance at 1% level; \*\* - significance at 5% level; \* - significance at 10% level. Abnormal returns is a dependent variable.  $Y*Event\_dummy$  is a variable  $(Y * I_t)$  from the model (4) and  $T*Event\_dummy$  is a variable  $(T * I_t)$  from the model (4).

According to Table 11, the arrest of Tymoshenko had a significant effect on all of the companies in the sample. However, the magnitude and the sign of the effects are completely different for politically connected and not connected firms. Again, the sign of the coefficient on the *Event\_dummy* is opposite to the signs on the coefficients on *Y\*Event\_dummy* and *T\*Event\_dummy*. The magnitudes and the signs of coefficients on *Y\*Event\_dummy* and *T\*Event\_dummy* is almost equal that means that investors of pro-Tymoshenko and pro-Yanukovych companies reacted in the same way to the arrest of Tymoshenko. The reaction of companies without political connections is, however, negative and a bit smaller in absolute value than the reaction of investors of connected firms.

Let us now present the results of company specific estimation using event study methodology. Companies of 9 oligarchs are included into the sample for this event estimation. Table 12 presents CAR estimation results for an event window [-1;+0], while results for other event windows can be found in Appendix K.

**Table 12. CAR estimation results for Tymoshenko’s arrest and event window [-1;+0].**

	Akhmetov (Yanukovych)		Pryvat (Neutral)
azst	-0.014** (-2.103)	unaf	0.003 (1.253)
avdk	-0.041*** (-3.254)		<b>Tihpko (Yanukovych)</b>
hrtr	0.001 (0.037)	kvbz	-0.016*** (-3.132)
cgok	0.006 (0.721)		<b>Zhevago (Tymoshenko)</b>
dnen	-0.031*** (-3.946)	svgz	-0.023*** (-9.771)
enmz	0.015*** (2.359)	fxpo	-0.050 (-0.712)
shkd	0.024		<b>Pinchuk (Yanukovych)</b>
		nvtr	-0.221*** (-3.920)

sgok	(0.314) 0.007	nitr	-0.013*** (-2.816)
mmki	(0.345) 0.046 (0.454)		<b>Kosyuk (Ambiguous)</b>
		mhpc	-0.069*** (-3.448)
	<b>ISD (Tymoshenko)</b>		<b>Verevs'kyi (Ambiguous/Yanukovich)</b>
almk	0.015 (1.147)	ker	0.000 (-0.019)
alkz	0.103 (0.732)		<b>Control sample (UA)</b>
		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.

Incidentally, the arrest of Tymoshenko has a very controversial nature. On one hand, one would expect investors of companies whose owners are politically loyal to Yanukovich 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 is not always good for the business. According to Table 12, 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 Yanukovich and Akhmetov. Besides, investors of pro-Yanukovich companies could be feeling like Tymoshenko's arrest is not an event that would bring much value to the companies they are 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 companies lost their value due to the event under consideration. Even though, Kosyuk is neutral in political loyalties, investors could have perceived him as connected to Tymoshenko, because in June, 2010 Yuriy Melnyk, former Minister of Agriculture in Tymoshenko's government, became a member of MHPC board.

Companies of both Pinchuk and Tihipko lost their value 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 Yanukovich in Ukraine that makes some oligarchs to be upset. As mentioned before, after Yanukovich 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 political leaders started to be getting 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 between these countries. 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 range, however, between 0.1-22 percentage

points. Hence, again we find an 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 13 shows its results, while results for other event windows can be found in Appendix N. However, no CAR is significant for this event that suggests that on average investors of companies belonging to a certain oligarch had zero reaction to Tymoshenko's arrest.

**Table 13. CAR estimation results for Tymoshenko's arrest and event window [-1;+0] for portfolios of companies.**

<b>akhmetov</b>	<b>pinchuk</b>	<b>isd</b>	<b>zhevago</b>
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.

### Conclusions

This paper 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 oligarch companies is significantly different from the magnitude found for the companies without political connections. Also, 70% of estimation results are consistent with our apriory 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 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.

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## Appendices

### Appendix A. Control sample of International Peers vs. events.

Industry	Main sample company	International Peers	Country	Corresponding 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	Evrax 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	Raspadsкая	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
<b>Industry</b>	<b>Main sample company</b>	<b>International Peers</b>	<b>Country</b>	<b>Corresponding Index</b>	<b>2004 elections</b>	<b>2010 elections</b>	<b>Tymoshenko's arrest</b>
Cont' d							
		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 B. Description of market indices.

Index	Description
AEX	A stock market index composed of Dutch companies that trade 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 and 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 trading 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 capitalised 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 of the trading on the Stockholm SE
PFTS	A capital-weighted price index of the 20 major and most liquid equities traded at the PFTS SE
RTSI\$	A capitalization-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.

### 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.

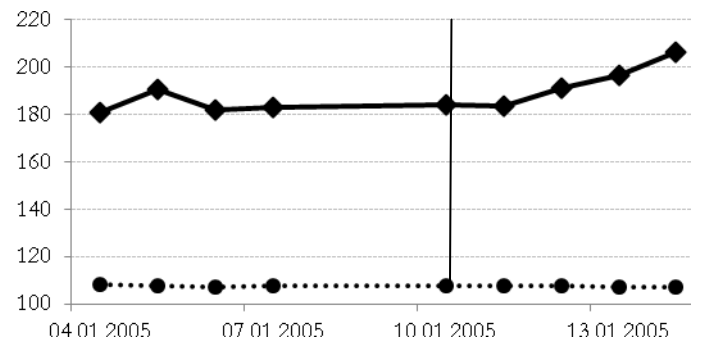
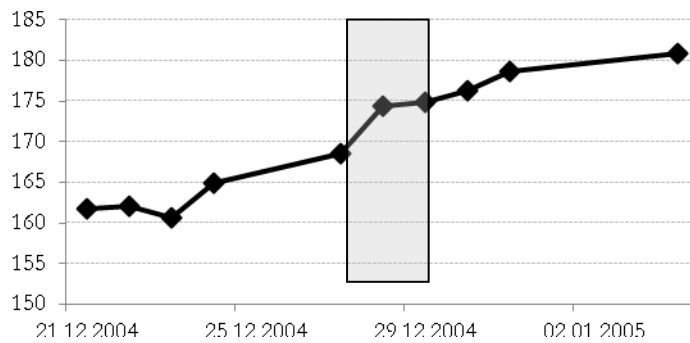
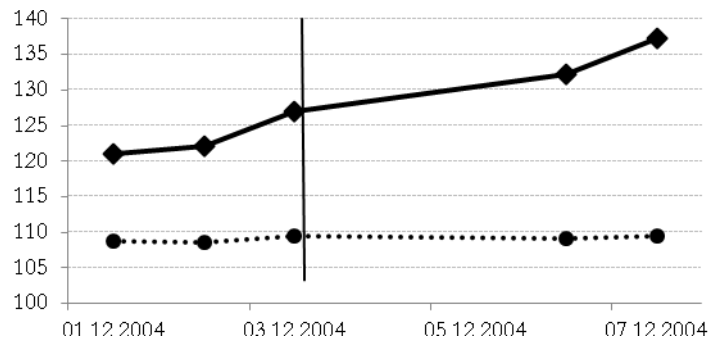
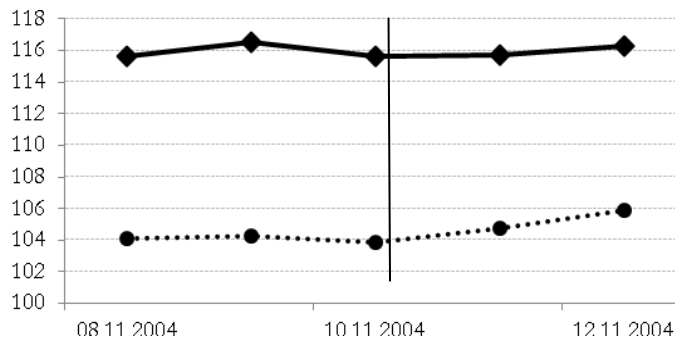
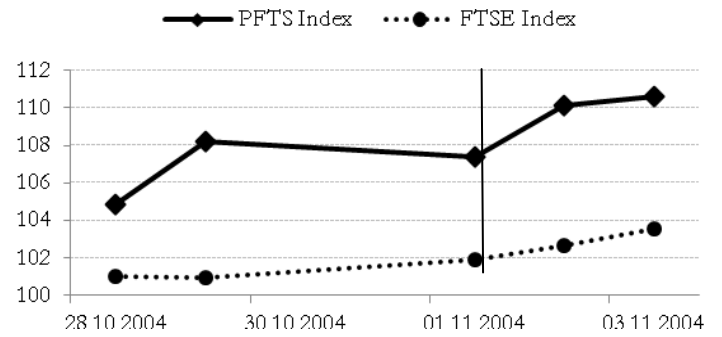
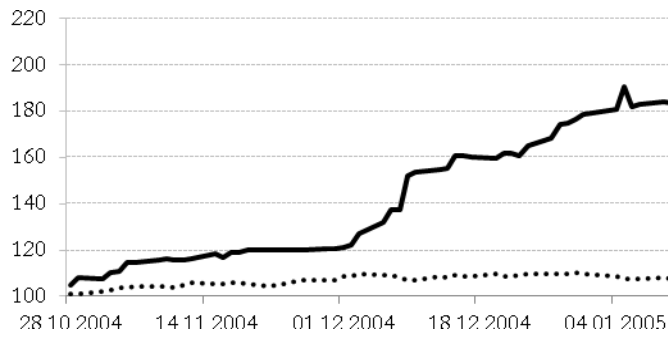
**Appendix C. Index used for estimation of equation 1 for the main sample Ukrainian companies.**

	PFTS	UX	FTSE-100	WIG
<hr/>				
2004				
azst	1			
nitr	1			
unaf	1			
<hr/>				
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
<hr/>				
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.

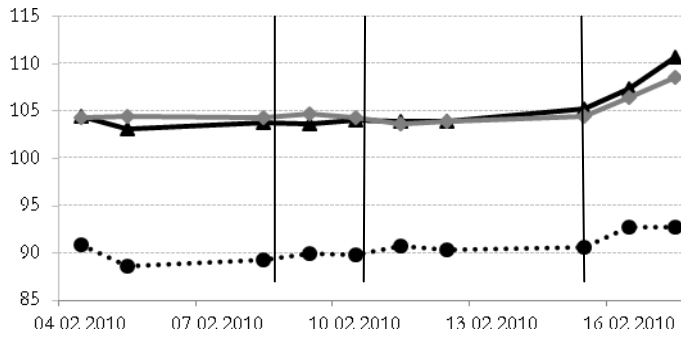
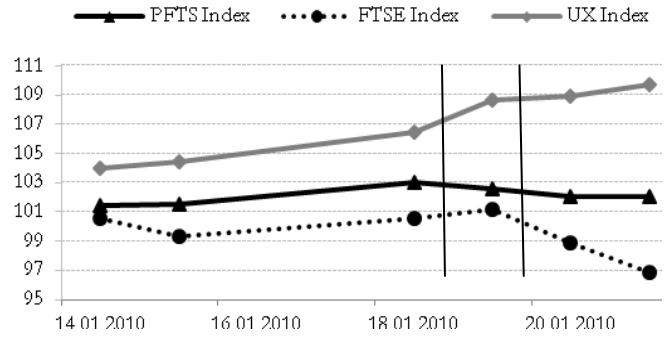
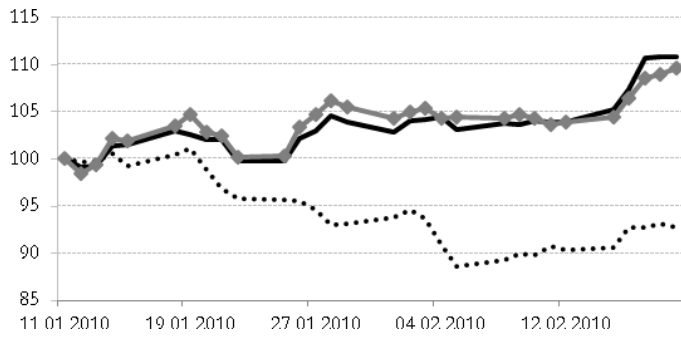
## Appendix D. Evolution of Market Indices during the event dates.

### The 2004 Presidential elections events

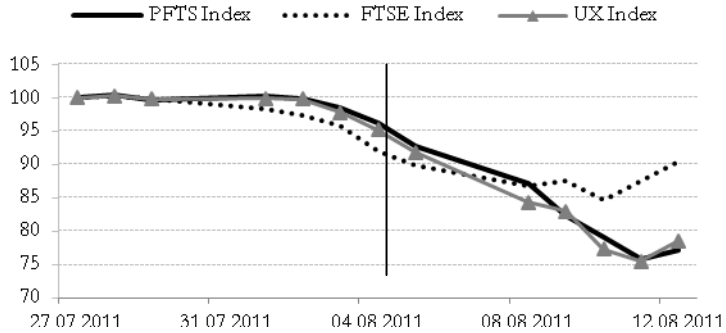


**Notes:** All indices are rescales to 100. Vertical lines indicate the event date.

## The 2010 Presidential elections events



## Tymoshenko's arrest



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

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

<b>Company</b>	<b>Events</b>	<b>Oligarch</b>	<b>Connections</b>	<b>Expected Reaction</b>	<b>Realized Reaction*</b>
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'kyi	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'kyi	Ambiguous	Ambiguous	Zero

**Notes:** \* Realized reaction is based on event study methodology estimation results that are presented in tables 6, 8 and 11.

**Appendix 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]						
<b>azst</b>	0.169***	-0.090			-0.002	0.044	0.085	0.121***	-0.023			0.094	0.067	0.186
<b>t-stat</b>	(-3.072)	(-0.811)			(-0.006)	(0.153)	(0.302)	(-4.636)	(0.206)			(0.343)	(0.230)	(0.693)
<b>unaf</b>	0.053	0.146	-0.071	0.174**	0.084	0.176		0.234	0.089	-0.067	0.091**	0.084	0.110	
<b>t-stat</b>	(0.182)	(0.429)	(-1.450)	(2.431)	(0.856)	(1.354)		(1.205)	(0.240)	(-1.447)	(5.231)	(0.850)	(1.553)	
<b>nitr</b>						8.527***							7.008***	
<b>t-stat</b>						(-3.145)							(-3.399)	
	[-2;+1]							[-0;+2]						
<b>azst</b>	-0.116**	-0.073			0.096	-0.007	0.143	0.144***	-0.018			0.070	0.166	-0.093
<b>t-stat</b>	(-2.265)	(-0.640)			(0.365)	(-0.024)	(0.521)	(-6.495)	(0.158)			(0.241)	(0.614)	(-0.741)
<b>unaf</b>	0.079	0.150	-0.070	0.089**	0.092	0.071		0.233	0.111	-0.047	0.139**	0.113	0.164	
<b>t-stat</b>	(0.267)	(0.430)	(-1.464)	(2.465)	(0.967)	(0.714)		(1.193)	(0.305)	(-0.913)	(2.349)	(1.583)	(1.620)	
<b>nitr</b>						7.587***							6.069***	
<b>t-stat</b>						(-2.895)							(-2.395)	
	[-2;+0]							[-0;+1]						
<b>azst</b>	-0.083	0.136***			-0.118*	0.091	0.091	0.091***	-0.001			0.167	0.115	-0.036
<b>t-stat</b>	(-1.532)	(3.665)			(-1.825)	(0.331)	(0.316)	(-3.761)	(0.009)			(0.639)	(0.368)	(-0.259)
<b>unaf</b>	0.017	-0.115	-0.073*	0.054	0.023	0.081		0.258*	0.115	-0.045	0.054**	0.121**	0.059	
<b>t-stat</b>	(0.056)	(-0.624)	(-1.823)	(1.604)	(0.294)	(0.817)		(1.913)	(0.277)	(-0.850)	(3.205)	(6.648)	(0.758)	
<b>nitr</b>						-6.145**							-5.128**	
<b>t-stat</b>						(-2.272)							(-2.284)	
	[-1;+2]							[-0;+0]						
<b>azst</b>	0.174***	-0.040			-0.003	0.118	0.128	0.057***	0.064			-0.047	0.213	-0.087
<b>t-stat</b>	(-6.317)	(-0.374)			(-0.009)	(0.428)	(0.458)	(-2.380)	(0.504)			(-0.180)	(0.684)	(-0.629)
<b>unaf</b>	0.207	0.085	-0.068	0.176**	0.075	0.214**		0.197	-0.150	-0.049	0.019	0.051**	0.068	
<b>t-stat</b>	(0.985)	(0.242)	(-1.406)	(3.099)	(0.752)	(2.248)		(1.456)	(-0.361)	(-0.925)	(1.102)	(2.824)	(0.879)	
<b>nitr</b>						7.949***							-3.687*	
<b>t-stat</b>						(-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 G. Control portfolio (UA) CAR estimation results for 2004 elections events.**

	<b>01nov2004</b>	<b>10nov2004</b>	<b>03dec2004</b>	<b>27dec2004</b>	<b>29dec2004</b>	<b>10jan2005</b>
	[-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 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
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)
Cont'd	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005	01nov2004	10nov2004	24nov2004	03dec2004	27dec2004	29dec2004	10jan2005
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	(0.267)	(1.795)	(0.721)	(-0.963)	(-2.142)	(-0.444)	(0.532)
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	(-1.611)	(9.618)	(3.470)	(-0.993)	(3.711)	(0.250)	(0.570)
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**	(10.57)	(1.356)	(0.196)	(-0.602)	(-0.021)	(0.917)	(2.515)
t-test	(10.57)	(1.356)	(0.196)	(-0.602)	(-0.021)	(0.917)	(2.515)							
Coal	-0.029***	-0.022	0.013**	-0.007	-0.011	-0.001	0.005**	(-18.27)	(-1.637)	(2.004)	(-0.253)	(-0.849)	(-0.301)	(2.216)
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	(-1.827)	(-0.682)	(-0.890)	(0.595)	(0.753)	(0.167)	(0.405)
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	(0.575)	(0.278)	(3.272)	(-0.043)	(-0.618)	(2.962)	(-0.670)
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	(-2.330)	(0.524)	(-1.339)	(-3.877)	(-3.531)	(2.186)	(-0.631)
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 G. 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)
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
<b>Cont'd</b>	<b>18jan2010</b>	<b>19jan2010</b>	<b>08feb2010</b>	<b>10feb2010</b>	<b>15feb2010</b>	<b>18jan2010</b>	<b>19jan2010</b>	<b>08feb2010</b>	<b>10feb2010</b>	<b>15feb2010</b>
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)
nitrr	-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)
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
<b>Cont'd</b>	<b>18jan2010</b>	<b>19jan2010</b>	<b>08feb2010</b>	<b>10feb2010</b>	<b>15feb2010</b>	<b>18jan2010</b>	<b>19jan2010</b>	<b>08feb2010</b>	<b>10feb2010</b>	<b>15feb2010</b>
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)
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 H. CAR estimation results for 2010 elections events for portfolios of Ukrainian companies.**

	<b>18jan2010</b>	<b>19jan2010</b>	<b>08feb2010</b>	<b>10feb2010</b>	<b>15feb2010</b>
	[-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 I. 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)
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 (-0.32)	-0.010 (-1.29)	-0.017** (-2.16)	-0.008 (-0.48)	0.005 (1.232)	-0.002 (-0.46)	-0.006 (-0.82)	0.004 (0.602)	-0.006 (-0.33)	0.009*** (15.20)
Iron Ore	-0.011 (-1.06)	-0.010 (-0.78)	-0.025 (-1.31)	0.004 (0.919)	0.059*** (3.228)	-0.004 (-0.27)	-0.002 (-0.19)	0.005*** (8.713)	0.018 (0.847)	0.015*** (464.8)
Coal	-0.010 (-0.58)	-0.027*** (-3.06)	-0.014* (-1.76)	-0.013 (-0.96)	0.006 (0.224)	-0.017*** (-2.87)	-0.007*** (-3.63)	-0.001 (-0.12)	0.006 (0.188)	-0.006 (-0.21)
Cont'd	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010	18jan2010	19jan2010	08feb2010	10feb2010	15feb2010
Agriculture	-0.020 (-1.04)	-0.021 (-1.10)	-0.064*** (-2.91)	-0.041*** (-3.58)	0.008*** (5.530)	-0.004 (-0.30)	-0.014*** (-4.00)	-0.020*** (-34.9)	-0.024 (-1.23)	-0.009 (-0.70)
Automotive	-0.004 (-0.22)	-0.006 (-0.41)	-0.012 (-0.34)	0.001 (0.022)	-0.008 (-0.38)	0.002 (0.138)	-0.009 (-0.36)	0.015** (2.220)	-0.043*** (-3.13)	0.004 (1.566)
Oil	0.001 (0.085)	-0.008 (-0.74)	0.000 (-0.03)	-0.012 (-0.86)		-0.016** (-2.04)	-0.010** (-1.96)	-0.009 (-0.56)	-0.001 (-0.16)	
Energy	0.011 (1.054)	0.007 (0.988)	0.000 (-0.03)	-0.005 (-0.43)	0.003 (0.344)	0.004 (0.462)	0.009*** (4.381)	-0.010*** (-3.98)	0.013*** (4.999)	-0.004 (-0.38)
	[-1;+2]					[-0;+0]				
Pipes	0.013 (1.083)	0.001 (0.041)	0.004 (0.741)	0.014 (0.886)	0.000 (-0.00)	0.010 (0.679)	-0.005 (-0.66)	0.004 (0.841)	0.001 (0.040)	0.002 (0.351)
Steel	-0.012* (-1.70)	-0.019* (-1.91)	-0.014 (-0.81)	-0.001 (-0.03)	0.011*** (2.611)	-0.002 (-0.73)	0.001 (0.085)	-0.001 (-0.19)	-0.012 (-0.66)	0.004*** (7.103)
Iron Ore	-0.012 (-0.92)	-0.027 (-1.61)	-0.011 (-0.57)	0.043* (0.043)	0.043* (1.911)	-0.010 (-0.63)	0.005 (0.401)	0.002*** (3.856)	-0.002 (-0.07)	0.007*** (231.9)
Coal	-0.034*** (-5.48)	-0.037*** (-2.89)	-0.014 (-0.92)	0.022 (0.836)	0.010 (0.410)	-0.012* (-1.93)	-0.004** (-2.31)	-0.005 (-0.56)	-0.012 (-0.40)	-0.016 (-0.60)
Agriculture	-0.027 (-1.47)	-0.044 (-1.33)	-0.073*** (-3.15)	-0.031 (-1.45)	0.007 (0.342)	0.005 (0.347)	-0.009** (-2.50)	-0.009*** (-16.9)	-0.022 (-1.11)	0.002 (0.145)
Automotive	-0.023 (-1.13)	0.002 (0.081)	-0.024 (-0.65)	-0.038 (-1.16)	-0.015 (-0.86)	-0.006 (-0.43)	0.008 (0.317)	0.004 (0.610)	-0.015 (-1.06)	0.001 (0.283)
Oil	-0.012 (-0.81)	-0.007 (-0.55)	-0.012 (-0.82)	-0.013 (-1.01)		-0.004 (-0.52)	-0.008 (-1.48)	0.003 (0.219)	-0.003 (-0.58)	
Energy	0.011 (1.568)	0.008 (1.162)	0.001 (0.099)	0.010 (0.870)	-0.002 (-0.19)	-0.002 (-0.26)	0.005*** (2.690)	-0.006** (-2.49)	0.005** (1.999)	0.003 (0.308)
	[-1;+1]									
Pipes	0.011 (0.847)	0.008 (0.600)	0.003 (0.577)	0.015 (0.973)	0.011 (1.172)	<b>Notes:</b> 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 our sample were 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.				
Steel	-0.009 (-1.22)	-0.009 (-1.31)	-0.002 (-0.15)	0.000 (-0.00)	0.009* (1.880)					
Iron Ore	-0.008 (-0.56)	-0.013 (-0.89)	-0.009 (-0.45)	0.021 (1.101)	0.042** (2.178)					
Coal	-0.023*** (-3.95)	-0.022** (-2.03)	-0.002 (-0.21)	0.009 (0.357)	0.003 (0.117)					
Agriculture	-0.021 (-1.10)	-0.010 (-0.77)	-0.051** (-2.07)	-0.034** (-2.02)	-0.006 (-0.45)					
Automotive	-0.006 (-0.41)	-0.015 (-0.69)	-0.009 (-0.24)	-0.032 (-0.92)	-0.012 (-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)

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

ker	-0.045 (-1.067)	-0.004 (-0.297)	-0.003 (-0.260)	-0.042 (-0.978)	-0.001 (-0.044)	-0.035 (-0.763)	0.007 (0.926)	0.007 (0.963)
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**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 L. 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 M. 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 (-1.164)	-0.031* (-1.704)	-0.003 (-0.153)	-0.045 (-1.153)	-0.089* (-1.681)	-0.027 (-0.631)	-0.035*** (-6.587)	-0.045*** (-2.919)
[-2;+1]	-0.075*** (-2.699)	-0.031* (-1.807)	-0.015*** (-7.276)	-0.056* (-1.939)	-0.099** (-2.328)	-0.050** (-2.202)	-0.029*** (-5.626)	-0.032** (-2.125)
[-2;+0]	-0.044* (-1.818)	-0.013 (-1.224)	-0.011*** (-5.097)	-0.055** (-2.274)	-0.074* (-1.643)	-0.025 (-1.517)	-0.022*** (-4.088)	-0.023 (-1.420)
[-1;+2]	-0.050 (-1.047)	-0.024 (-1.254)	0.003 (0.157)	-0.034 (-0.864)	-0.085 (-1.632)	-0.026 (-0.608)	-0.029*** (-5.347)	-0.040*** (-2.627)
[-1;+1]	-0.070*** (-3.242)	-0.024 (-1.288)	-0.010*** (-7.800)	-0.047 (-1.530)	-0.094*** (-2.723)	-0.049*** (-2.917)	-0.023*** (-4.374)	-0.027* (-1.734)
[-1;+0]	-0.040* (-1.811)	-0.005 (-0.488)	-0.006*** (-5.709)	-0.045* (-1.892)	-0.069* (-1.813)	-0.024* (-1.859)	-0.016*** (-2.740)	-0.017 (-0.969)
[-0;+2]	-0.019 (-0.438)	-0.016 (-0.799)	0.005 (0.307)	0.001 (0.026)	-0.070 (-1.270)	-0.007 (-0.170)	-0.023*** (-4.792)	-0.040*** (-5.720)
[-0;+1]	-0.039* (-1.849)	-0.016 (-0.745)	-0.007*** (-20.81)	-0.012 (-1.161)	-0.078*** (-2.707)	-0.031 (-1.596)	-0.018*** (-4.259)	-0.027*** (-3.377)
[-0;+0]	-0.009 (-0.424)	0.003 (0.127)	-0.003*** (-9.905)	-0.011 (-1.080)	-0.054* (-1.853)	-0.006 (-0.298)	-0.011*** (-2.629)	-0.017** (-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 N. CAR estimation results for Tymoshenko's arrest and portfolios of companies.**

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