

**Prosecutors and financial markets:
A case study of the YUKOS affair**

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Preliminary

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Abstract

Political risk is a salient feature of emerging markets. The YUKOS affair, a highly publicized story of the government-led assault on a private Russian company owned by a small group of politically ambitious individuals provides an excellent opportunity for a case study. In this paper, we analyze how the involvement of state agencies (in particular, law enforcement agencies) affects stock market performance. We use a data set of 56 events defined as publications in which YUKOS has been mentioned along with one of the state agencies, during a two-year period from January 2002 to December 2003. Using a standard event study methodology, we find a very strong negative market reaction to the arrests of YUKOS' top managers and shareholders. Then, we employ the market model as a benchmark to study the impact of all positive and negative news on the level of YUKOS' returns and its systematic risk. We find that negative events involving the law enforcement agencies are associated with significantly negative daily abnormal returns in the order of 1%, while positive events imply positive, though insignificant daily abnormal returns around 0.7% as well as a significant increase in beta by 0.75. These results are robust and not driven by a few major events, such as the arrests of YUKOS' top managers. In the final part of the paper, we investigate the impact of YUKOS events on stock market performance of two other major Russian companies. We demonstrate that stock returns of Lukoil, another private oil producer, were affected both by its own negative events due to the law enforcement agencies and by YUKOS events. In contrast, stock returns of Gazprom, a state-controlled gas monopolist, were not affected by YUKOS events and rose in response to the involvement of the non-law-enforcement agencies.

Keywords: political risk, event study, Russian stock market.

1. Introduction

Political risk is a salient feature of emerging markets. The YUKOS affair, a highly publicized story of the government-led assault on a private Russian company owned by a small group of politically ambitious individuals provides an excellent opportunity for a case study. In this paper, we analyze how the involvement of state law enforcement agencies affects stock market performance. We use a data set of 56 events defined as publications in which YUKOS has been mentioned along with one of the state agencies during a two-year period from January 2002 to December 2003. The typical events are penalties, threats to revoke the license for the non-fulfillment of the conditions of the agreement, and charges for the involvement in past shady privatization deals or tax evasion.³ Using a standard event study methodology, we find a very strong negative market reaction to the arrests of YUKOS' top managers and major shareholders. Then, we employ the market model as a benchmark to study the impact of all positive and negative news on the level of YUKOS' returns and its systematic risk. In the final part of the paper, we investigate the impact of YUKOS events on stock market performance of two other major Russian companies: Lukoil, another private oil producer, and Gazprom, a state-controlled gas monopolist with the largest market capitalization among Russian companies.

In finance, the term 'political risk' usually applies to a country as whole, being associated with possible changes in regulation, trade agreements, etc. Lobo (1999) demonstrates that mean and volatility of U.S. stock returns differ during the election years and across partisan administrations, while Kim and Mei (2001) find a significant impact of political developments on market volatility and return in Hong Kong. However, in the case of YUKOS, it is certain that its problems are connected primarily with the company itself, rather than the market as a whole. During the affair, various Russian officials, including President Putin, stressed that there will be no other action on the same blueprint.

On the surface, there seems to be a similarity between high-profile cases of Western public companies such as Enron and WorldCom, and, most recently, Parmalat, where the news about government-led investigation have had a significant impact on share prices. However, these cases are starkly different. First, the political side of investigation into the Enron and WorldCom affairs was at maximum marginal compared to the YUKOS case. In other words, problems of American companies were primarily related to the economic side of their business, while the YUKOS problems (and respective drops in share prices) have been caused by the political assault. Second, investigation announcements in the case of Enron and WorldCom have caused

³ It is worth noting that most of charges are unrelated to the YUKOS privatization history and business. They deal primarily with other privatization deals in which YUKOS individual shareholders have been involved.

drops in share prices since they carried out (mostly negative) information about the real state of affairs in the companies. In the case of YUKOS, there was no negative information hidden from the investors' sight; the bad news was the government assault as such.

A more relevant analogy can be drawn with the history of the Standard Oil break-up and other anti-trust investigations.⁴ (Bittlingmayer, 1992, analyses stock returns in anti-trust cases; Glaeser *et al*, 2003, draw parallels between large business conglomerates of the Gilded Age and modern Russian companies.) However, this analogy might be misleading as well. The primary concern of the U.S. government was restoring efficiency that was harmed by the monopoly position of the Standard Oil and similar companies. In contrast, even being indeed a giant company, YUKOS still faces stiff competition both at home, where the remaining four largest oil companies are actually almost as big, and abroad, where it has to compete with multinational majors such as Royal Dutch/Shell, Chevron, BP, etc. At the political side, some similarity stems from the fact that both prosecution of the Standard Oil and the attack on YUKOS were directed by popular politicians and enjoyed significant support of the public *en large*.

The closest paper to ours is that by Fisman (2001) studying how political connections of Indonesian companies affected their stock market performance. He finds that Indonesian firms with close ties to the Soeharto regime lost more value in response to the news on Soeharto's health problems. In contrast to Fisman (2001), we study an impact of the executive branch on financial markets by means of a case study of one given company rather than cross-sectional analysis.

The structure of the rest of the paper is as follows. In Section 2, we discuss the story of YUKOS events that happened since its creation in 1993. Section 3 describes data and methodology, while Section 4 presents the results. Section 5 concludes.

2. The YUKOS Story

The story of YUKOS has been recently reported in a number of texts (e.g., Aron, 2003) and newspaper articles (NYT, FT, Washington Post). We provide the basic facts without going into much detail, and try to delineate the commercial side of the story, which is important for understanding prices for YUKOS shares, and the political one, where the timeline provides the event sequence for our empirical investigation.

⁴ There is one formal similarity between YUKOS (and other similar Russian companies) and the Standard Oil (and similar US companies of the time). Both companies were in fact trusts managing property in the interest of 'beneficiaries'. The reasons were somewhat different: in the Standard Oil case, the structure was designed to coordinate activity of a certain set of enterprises; in the YUKOS case, the primary purpose was to hide true ownership and avoid regulation.

Background

YUKOS was created by Russian government to integrate a number of parts of the former oil industry in April 1993, and was subsequently privatized through one of the ill-famous ‘loans-for-shares’ auctions.⁵

On many occasions, YUKOS was ahead of other large Russian companies in developing new standards of corporate governance and transparency. In 1999, YUKOS became the first Russian major company to report by international accounting standards; in 2001, it started to report its quarterly financial statements according to GAAP, the U.S. Generally Accepted Accounting Principles. The 2002 annual report was audited by PriceWaterhouseCoopers. In 2000, YUKOS paid its almost 60,000 shareholders \$300 million as dividends (\$500 million in 2001 and \$700 million in 2002), the first Russian oil company to do so.

The growth rate of the YUKOS output was 17 percent in 2001, 19 percent in 2002, and 20 percent in 2003. (Roughly, this is about 20 percent of Russian total output.) Since 1998, the YUKOS value has grown about 1,000 percent. In September 2002, the Fortune magazine ranked Mikhail Khodorkovsky, the CEO and a major shareholder of YUKOS, the first in “Global 40 Richest Under 40”. Of course, historically high oil prices in 1998-2003 have contributed to the increase in share prices. However, during these years YUKOS value has grown significantly faster than that of any other major oil company in the world. Currently, YUKOS is the largest oil company in Russia and concedes only to Gazprom among all Russian companies, judged by market capitalization (see Table 1).

Prosecution

Events that started a new page in the YUKOS history and attracted attention world-wide were arrests of two major shareholders and founders of the company, Mikhail Khodorkovsky and Platon Lebedev in 2003. Khodorkovsky, the CEO and the largest shareholder of YUKOS was arrested on October 25, 2003 and charged with tax evasion, fraud, forgery, and embezzlement. Before that, Lebedev, a major shareholder and director of the Menatep, a holding and investment company that owns 61 percent of YUKOS (Khodorkovsky is also a major owner of Menatep) was arrested on July 2, 2003, and charged with embezzling state assets in the 1994 privatization of Russia's largest phosphate extraction and enrichment plant, Apatit. Subsequently, the prosecutor's office has issued additional charges against Khodorkovsky and Lebedev,

⁵ The company name is an acronym of the names of two state-owned companies that were parts of the merger: Yuganskneftegaz and KuybyshevOrgSintez. On ‘loans-for-shares’ auctions see, e.g., Freeland (2000).

including "tax evasion," "abuse of trust," and "failure to comply with a court order;" their petitions for bail have been repeatedly denied since their arrest.

Since July 2003, a number of law enforcement and regulatory agencies issued charges against the company. There also was a coordinated attack on YUKOS core shareholders in media, most prominently in all the televised news.

Specifically, on December 2, 2003, the Ministry for Tax Collection informed the Prosecutor office that YUKOS concealed at least \$5 billion in taxes in 1998-2001. Most interestingly, on all the counts of these charges, YUKOS has already won all the trials and the Ministry has publicly agreed that there are no over-due taxes.

The Political Line

“The political side” of the YUKOS affair is both very clear and mysterious, with versions ranging from a personal feud between President Putin and YUKOS CEO Mikhail Khodorkovsky to an ultimate battle between the evil of dictatorship and the angel of democracy. In particular, YUKOS and its key figures have been financing opposition parties on a regular basis, and thus the attack might be viewed a part of President Putin’s strategy to eliminate any substantial political opposition to his rule. Another political explanation is that the new political elite, brought to the government by the dramatic rise of President Putin, is eager to take over the ‘crown jewels’ of the Russian industry. Alternatively, the destruction of one of the most prominent ‘oligarchs’, a group of very wealthy and politically influential businessman, might be viewed as an institutional response to the subversion of institutions by the rich during the first decade of reforms (Glaeser, Sheinkman, and Shleifer, 2003).

3. Data and methodology

Description of the data

The events analyzed in our study were selected by searching the archives of RBC news as well as *Commersant* and *Vedomosti*⁶ articles by keywords “YUKOS” and a name of one of the Russian authorities, such as “prokuratura” (Prosecutor’s office), “MVD” (Ministry of Internal Affairs), “FSB” (Federal Security Service, former KGB), “MNS” (Ministry of Tax Collection), “MPR” (Ministry of Natural Resources), “MAP” (Ministry of Anti-Monopoly Policy), “RFFI” (Russian Federal Property Fund), and State Auditing Chamber. It should be emphasized that the

⁶ RBC (RosBusinessConsulting) is a leading Russian provider of business information. *Commersant* and *Vedomosti* (a joint project of the Wall Street Journal and Financial Times) are two leading Russian business newspapers. When the newspaper article referred to the event with a lag, we adjusted the date of the event accordingly.

news was classified as an event, when it was initiated by the authorities and not by the company. The typical negative events are penalties, threats to revoke the license for the non-fulfillment of the conditions of the agreement, and charges for the involvement in past shady privatization deals or tax evasion. Most of the positive events follow the negative ones, reducing their impact, e.g., by lowering the fine or removing the charges. In total, this procedure produced 12 positive and 44 negative events for YUKOS. In addition, we gathered similar sets of positive and negative events for two other Russian companies, Gazprom and Lukoil, the largest and third-largest by market capitalization, respectively. Our data set comprises 30 events (including 6 positive ones) for Gazprom and 38 events (11 positive ones) for Lukoil.

In our analysis, we use daily close prices of Russian stocks that were downloaded from RBC data archive (<http://export.rbc.ru/>) and daily values of the market index, S&P/RUX, that were taken from the RTS website (<http://www.rts.ru/>)⁷. The sample period is from January 1, 2002 to December 30, 2003, including 498 trading days. During this period, YUKOS was involved in another dramatic event – a failed merger with another Russian oil company, Sibneft. In order to separate the impact of the merger from the impact of political risks, two dates were excluded from the sample: April 22, 2003 when the merger was officially announced and November 28, 2003, when Sibneft announced a break-up of the deal. Thus, our final sample for YUKOS comprises 496 daily observations.

Figure 1 shows the dynamics of the market index and YUKOS prices during the sample period (both normalized to 100 in the beginning). Table 2 reports summary statistics of the market index and YUKOS returns, which allow us to draw some preliminary conclusions. During the sample period, the Russian stock market was characterized by high return and volatility: an average return of 44.4% and standard deviation of 477.3% p.a. YUKOS stock had approximately the same return (44.5%) and even higher volatility (700.3%). Days with YUKOS events were more volatile: positive news were associated with very high returns, while negative news brought prices down. This effect applied both to YUKOS and to the market index, proving that YUKOS events had an overall market impact.

Methodology

In the beginning, we analyze the market reaction to the major YUKOS events, applying a standard event study methodology described, e.g., in Campbell, Lo, and MacKinlay (1997). Denoting the day of the event as day 0, we use a 70-day estimation period (trading days -74 to -

⁷ The S&P/RUX index is computed by the Index Agency RTS-Interfax in cooperation with Standard&Poors. It is a market-capitalization-weighted index of the Russian companies traded in the RTS (“Russian Trading System”) Stock Exchange and Moscow Stock Exchange. Currently, the S&P/RUX index comprises 57 stocks.

5)⁸ and 10-day test period (trading days -1 to 8). We measure the normal return as a return of the control portfolio, a capitalization-weighted portfolio of four other large Russian oil companies: Lukoil, Sibneft, Tatneft, and Surgutneftegaz⁹ (see Table 1). In our tests, we use the abnormal return (AR_t , $-1 \leq t \leq 8$), defined as the difference between YUKOS log-return and control portfolio's log-return, and cumulative abnormal return (CAR_t , $-1 \leq t \leq 8$), defined as the sum of the abnormal returns from day -1 to day t .¹⁰ The t-statistics of AR_t and CAR_t are based on the standard deviation of the abnormal returns during the estimation period.

During the sample period, the control portfolio had an average return of 48.1% p.a., which rose to 486.2% and fell to -224% during the days with positive and negative events, respectively (see Table 2). However, these swings were less pronounced than for YUKOS, as the average abnormal return, close to zero during the whole sample period, increased to 250.2% in response to positive news and decreased to -242.7% after negative news.

In the second part of the paper, we perform a formal investigation of the stock market reaction to all YUKOS events, using a regression analysis and employing the market model as a benchmark. The basic model is as follows:

$$R_t = \alpha_0 + \alpha_1 PosD_t + \alpha_2 NegD_t + (\beta_0 + \beta_1 PosD_t + \beta_2 NegD_t) R_{M,t} + \varepsilon_t, \quad (1)$$

where R_t and $R_{M,t}$ are returns of YUKOS and market index in day t ; $PosD$ and $NegD$ are dummy variables equal to one in the case of positive and negative event, respectively. Thus, α_1 and α_2 measure the impact of positive and negative news on the level of YUKOS returns, while β_1 and β_2 measure changes in its systematic risk.

In order to study this effect in more detail, we define two additional dummy variables. $ArrestD$ is equal to one during the days surrounding the arrests of YUKOS' top managers and shareholders, Platon Lebedev and Mikhail Khodorkovsky (July 2-3, 2003 and October 27-28, 2003). $PersD$ equals one when the news affects a person (rather than a company). Since we do not have many positive events, we study interaction effects between the two additional dummy variables and $NegD$. In the regression

$$R_t = \alpha_0 + \alpha_1 PosD_t + \alpha_2 NegD_t + \alpha_3 NegD_t ArrestD_t + (\beta_0 + \beta_1 PosD_t + \beta_2 NegD_t + \beta_3 NegD_t ArrestD_t) R_{M,t} + \varepsilon_t, \quad (2)$$

α_3 and β_3 measure the difference between market reaction to YUKOS top managers' arrests and other negative events, while the regression

⁸ We limit the length of the estimation period to 70 trading days to ensure that the estimation and the test periods of different events do not intersect.

⁹ The stocks of these four companies are actively traded. Along with YUKOS, they comprise the most representative index of the Russian oil industry, S&P/RUIX-OIL.

¹⁰ The results were qualitatively the same when we used the market model to measure normal return.

$$R_t = \alpha_0 + \alpha_1 \text{PosD}_t + \alpha_2 \text{NegD}_t + \alpha_4 \text{NegD}_t \text{PersD}_t + (\beta_0 + \beta_1 \text{PosD}_t + \beta_2 \text{NegD}_t + \beta_4 \text{NegD}_t \text{PersD}_t) R_{M,t} + \varepsilon_t \quad (2)$$

allows us to study whether investors reacted differently to charges against the company and against the company's employees.

In the following regression, we introduce two more dummies: *ForceD* and *OtherD* that are equal to one if one of the law enforcement agencies (Prosecutor's office, Ministry of Internal Affairs, Federal Security Service, and Ministry of Tax Collection) or other state agencies (Ministry of Natural Resources, Ministry of Anti-Monopoly Policy, Russian Federal Property Fund, and State Auditing Chamber) was mentioned in the news, respectively. This allows us to separate the impact of negative news due to these two types of state agencies. (As before, the low number of positive events does not permit us to study these effects for positive events.) The regression is as follows:

$$R_t = \alpha_0 + \alpha_1 \text{PosD}_t + \alpha_5 \text{NegD}_t \text{ForceD}_t + \alpha_6 \text{NegD}_t \text{OtherD}_t + (\beta_0 + \beta_1 \text{PosD}_t + \beta_5 \text{NegD}_t \text{ForceD}_t + \beta_6 \text{NegD}_t \text{OtherD}_t) R_{M,t} + \varepsilon_t \quad (4)$$

In the final part of the paper, we extend our analysis of political risks to two other major Russian companies, Lukoil and Gazprom. Lukoil is the second-largest oil producer in Russia. It is a private company, although the government still holds a minor stake that is to be sold in the nearest future. Gazprom holds a virtual monopoly in the Russian gas market and has the largest market capitalization in Russia (see Table 1). The state owns a major stake in Gazprom, which allows the government effectively control the company. We study political risks of the two companies along two lines. First of all, we partly replicate the preceding analysis (models (1) and (4)) for Lukoil and Gazprom for *their own* positive and negative events. Secondly, we investigate whether *YUKOS* events had an impact on other companies' stock market performance. The following two regressions include dummies both for Lukoil (or Gazprom) own events and *YUKOS* events. In the regression

$$R_t = \alpha_0 + \alpha_1 \text{PosD}_t + \alpha_2 \text{NegD}_t + \alpha_7 \text{PosDY}_t + \alpha_8 \text{NegDY}_t + (\beta_0 + \beta_1 \text{PosD}_t + \beta_2 \text{NegD}_t + \beta_7 \text{PosDY}_t + \beta_8 \text{NegDY}_t) R_{M,t} + \varepsilon_t \quad (5)$$

where the event dummies are defined as before, with "Y" added to the variables referring to *YUKOS* events. The coefficients α_1 , α_2 , β_1 , and β_2 measure market reaction to company's own news, while α_7 , α_8 , β_7 , and β_8 show the impact of *YUKOS*' events on other companies (Lukoil or Gazprom). We extend this model separating the impact of negative news due to the law enforcement agencies and other state agencies:

$$R_t = \alpha_0 + \alpha_1 \text{PosD}_t + \alpha_5 \text{NegD}_t \text{ForceD}_t + \alpha_6 \text{NegD}_t \text{OtherD}_t + \alpha_7 \text{PosDY}_t + \alpha_9 \text{NegDY}_t \text{ForceDY}_t + \alpha_{10} \text{NegDY}_t \text{OtherDY}_t + (\beta_0 + \beta_1 \text{PosD}_t + \beta_5 \text{NegD}_t \text{ForceD}_t + \beta_6 \text{NegD}_t \text{OtherD}_t$$

$$+ \beta_7 \text{PosDY}_t + \beta_9 \text{NegDY}_t \text{ForceDY}_t + \beta_{10} \text{NegDY}_t \text{OtherDY}_t) R_{M,t} + \varepsilon_t. \quad (6)$$

where the event dummies are defined along similar lines.

In all regressions, we compute Newey-West heteroscedasticity and autocorrelation consistent standard errors.

4. Results

YUKOS: an event study analysis

Table 3 presents abnormal returns (AR's) and cumulative abnormal returns (CAR's) along with the corresponding t-statistics for five days surrounding two major negative events – the arrests of YUKOS' top managers and shareholders, Platon Lebedev (July 2, 2003) and Mikhail Khodorkovsky (October 25, 2003). Panel A of Table 2 shows that the market reacted strongly to Lebedev's arrest, with YUKOS price falling by 3.78% relative to its peers during the following day. The one-day delay is explained by the fact that the arrest was carried out at the end of the day and the news became known to the market after the trading closed. July 4, when the arrest was sanctioned by the court, was another disastrous day for YUKOS with abnormal return of -3%. The two price drops are significant at the 5% and 10% levels, respectively.

Panel B of Table 2 demonstrates that Khodorkovsky's arrest was followed by an even stronger market reaction on Monday October 27, 2003¹¹, when YUKOS price fell by 14.65% and the market index fell by almost 10%. The abnormal return of -8.7% is highly significant, with t-statistic of 5.45.

YUKOS: the market model

Table 4 reports results of the regression analysis for YUKOS (models (1) to (4)). The results of the basic model (1) (see columns 2-3) demonstrate that negative events are associated with significantly negative daily abnormal returns in the order of -0.96% (223% p.a.), while positive events imply positive, though insignificant daily abnormal returns around 0.68% (170% p.a.). Both types of news lead to a higher market risk; positive events imply a highly significant increase in beta by 0.75. Thus, negative events primarily influence the level of returns (YUKOS stock falls more than the market), while positive events increase the degree of YUKOS' co-movement with the market (YUKOS and market prices rise approximately on par in response to good news).

¹¹ Since the arrest was on Saturday, we consider Monday October 27, 2003, the first trading day after the arrest, as day 0.

These findings are robust and not driven by a few major events, such as the arrests of YUKOS' top managers. Other negative events lead to the daily abnormal return of -0.9%, while arrests implied further 2.45% decline in price (see columns 4-5 in Table 4). The arrests also led to a significantly higher market risk (an increase in beta by 0.36).

Negative news affecting a person affiliated with YUKOS have a marginally significant (at a 10% level) negative impact on the level of company returns, lowering them further by 0.65% in comparison with negative news affecting the company (see columns 6-7 in Table 4). At the same time, personal charges lead to a significant increase in beta by 0.36.

The results of model (4) show that the market reaction (a decline in the level of stock returns) in response to negative news is primarily due to the law enforcement agencies (see the last two columns in Table 4). The abnormal return due to negative news involving other state agencies is insignificantly negative (round -0.4%).

Lukoil and Gazprom: the market model

Tables 5 and 6 present results of the regression analysis for Lukoil and Gazprom, respectively (models (1), (4), (5), and (6)). Similarly to YUKOS, Lukoil's returns are primarily affected by negative news due to the law enforcement agencies, which lead to a significant decline both in the level of daily returns (by 0.8% or 203.6% p.a.) and in their systematic risk (by 0.2). A possible explanation for the latter finding is that state agencies' charges against Lukoil are company-specific and do not, as in case of YUKOS, imply the propagation of the same scenario to other companies. YUKOS news have a significant impact on systematic risk of Lukoil's returns. Market beta of Lukoil rises by 0.21 in response to positive YUKOS news and falls by 0.37 in response to negative YUKOS news involving the non-law-enforcement agencies. It seems that investors take into account two opposite effects: the probability of YUKOS' scenario being applied to Lukoil, which is also a private oil company, and decrease in competition in the oil industry after the possible weakening or even bankruptcy of YUKOS. Positive (negative) YUKOS news lead to an increase (decrease) in the level of Lukoil's returns; however, these effects are insignificant.

The nature of political risks for Gazprom is strikingly different. Negative news due to the law enforcement agencies have no significant impact on the level of returns or their systematic risk, which is very logical given that Gazprom is a state company. However, negative news involving the other state agencies lead to a significant *increase* in the level of Gazprom's daily returns by 0.51% and significant decrease in its market beta by 0.37. This may be explained by the relatively inefficient management of Gazprom, which is disciplined when the respective authorities such as Ministry of Natural Resources, Ministry of Anti-Monopoly Policy, and State

Auditing Chamber turn their attention to the company. Clearly, this effect is company-specific, which explains a decrease in Gazprom's systematic risk. YUKOS events had no significant impact on Gazprom's stock market performance, which is once again very well explained by the absence of YUKOS-like political risks for the state companies.

5. Conclusion

This paper provides strong evidence that the involvement of state agencies (in particular, law enforcement agencies) is still a very important factor affecting returns in the Russian stock market. The potential risk of being prosecuted appears to be especially high for companies involved in past shady privatization deals or tax-minimizing policies. The affair of YUKOS, the largest Russian oil company, proves that the stakes are extremely high.

In the case of YUKOS, negative events associated primarily with law enforcement agencies caused significant drops in stock prices, with the daily abnormal returns in the order of -0.9%. This effect was especially pronounced in case of the major events, such as the arrests of YUKOS' top managers, when the single-day price drops were up to 15% and the abnormal return was in the order of -10%. Positive events implied positive, though insignificant daily abnormal returns around 0.7%. In addition, positive news along with negative news about personal charges and arrests implied a significant increase in the company's systematic risk.

YUKOS events seem to provide a signal about the possible propagation of its scenario to other private companies. The systematic risk of Lukoil, the second-largest Russian oil producer was significantly affected by news concerning YUKOS. Lukoil's own negative news due to the law enforcement agencies brought down its abnormal return by 0.8% and its market beta by 0.2. However, the involvement of the state agencies, such as Ministry of Natural Resources, Ministry of Anti-Monopoly Policy, and State Auditing Chamber, may be beneficial for inefficiently managed state companies. For Gazprom, a state-controlled gas monopolist, this led to a 0.5% increase in the daily abnormal return. As expected, Gazprom was not affected by YUKOS events.

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Table 1. Market capitalization of 20 largest Russian companies

The table reports market capitalization of the twenty largest Russian companies as of March 12, 2004.

	Company	Industry	Market capitalization, \$ mln
1	Gazprom	Gas	44 823,96
2	Yukos	Oil	33 756,11
3	Lukoil	Oil	24 232,55
4	Surgutneftegaz	Oil	23 311,21
5	Sibneft	Oil	15 314,40
6	RAO UES	Utilities	12 579,30
7	Sberbank	Financial	6 701,30
8	Severstal	Metallurgy	4 028,54
9	Nornikel	Metallurgy	3 179,80
10	Tatneft	Oil	2 766,94
11	Mosenergo	Utilities	2 284,03
12	Baltika	Food & beverages	1 745,69
13	Rostelekom	Telecoms	1 661,43
14	Uralsvyazinform	Telecoms	1 172,45
15	MGTS	Telecoms	1 117,61
16	Aeroflot	Airlines	1 016,21
17	Irkutskenergo	Utilities	950,98
18	Avtovaz	Machinery	788,64
19	Lenenergo	Utilities	628,15
20	Udmurtneft	Oil	627,81

Source: <http://www.finam.ru/>

Table 2. Summary statistics

This table shows mean and standard deviation of the daily market index (S&P/RUX), YUKOS, normal and abnormal returns during the overall period (January 1, 2002 to December 30, 2003), days with positive events, and days with negative events. The normal return is a return of the capitalization-weighted control portfolio of Lukoil, Sibneft, Tatneft, and Surgutneftegaz, four largest Russian oil companies after YUKOS. The abnormal return is the difference between YUKOS return and control portfolio's return.

	Overall		Positive events		Negative events	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
S&P/RUX	0.18	1.91	1.23	2.48	-1.00	2.77
YUKOS	0.18	2.77	2.95	4.86	-2.13	3.89
Normal return	0.20	2.33	1.94	3.52	-1.07	2.90
Abnormal return	-0.02	1.77	1.00	1.81	-1.06	2.47

Table 3. Market reaction to the arrests of YUKOS' top managers

This table shows daily abnormal returns (AR's) and cumulative abnormal returns (CAR's), in percentages, around July 2, 2003 and October 27, 2003 (day 0), the days of the arrests of P. Lebedev and M. Khodorkovsky, respectively. The abnormal return in a given day is computed as the difference between the return of Yukos and the return of the control portfolio consisting of four other largest oil companies (see details in Section 3). The t-statistics are based on the standard deviation of the abnormal returns during the test period (days -74 to -5).

Panel A. Market reaction to the arrest of P. Lebedev

Date	Day	AR	t-stat.	CAR	t-stat.
01-07-03	-1	1.39	0.82	1.39	0.82
02-07-03	0	-0.56	-0.33	0.84	0.69
03-07-03	1	-3.78	-2.23	-2.95	-3.00
04-07-03	2	-3.05	-1.79	-5.99	-7.05
07-07-03	3	3.61	2.13	-2.38	-3.13

Panel B. Market reaction to the arrest of M. Khodorkovsky

Date	Day	AR	t-stat.	CAR	t-stat.
24-10-03	-1	1.66	0.99	1.66	0.99
27-10-03	0	-9.10	-5.45	-7.44	-6.30
28-10-03	1	-1.23	-0.74	-8.67	-8.99
29-10-03	2	0.72	0.43	-7.95	-9.52
30-10-03	3	-2.03	-1.21	-9.98	-13.36

Table 4. Regressions of YUKOS returns on market returns and event variables

This table presents results of the regressions (1) to (4) of daily YUKOS returns on market returns and event variables during the period from January 1, 2002 to December 30, 2003. During this period, there were 12 positive and 44 negative events for YUKOS. The event dummies are defined as follows: PosD and NegD are equal to one in the case of a positive and negative event, respectively; ArrestD is equal to one during the days surrounding the arrests of YUKOS' top managers and shareholders; PersD equals one when the news affects a person (rather than a company); ForceD and OtherD are equal to one if a law enforcement agency and other state agency is mentioned in the news, respectively. The *t*-statistics are corrected for heteroscedasticity and autocorrelation (with 5 lags).

	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Const	0.05	0.70	0.05	0.70	0.05	0.70	0.04	0.53
PosD	0.68	1.31	0.68	1.31	0.68	1.31	0.69	1.33
NegD	-0.96	-3.66	-0.89	-3.42	-1.15	-3.09		
NegD*ArrestD			-2.45	-12.44				
NegD*PersD					-0.65	-1.69		
NegD*ForceD							-1.00	-3.19
NegD*OtherD							-0.40	-0.82
Rm	1.05	21.90	1.05	21.90	1.05	21.90	1.06	22.25
Rm*PosD	0.75	5.49	0.75	5.49	0.75	5.49	0.74	5.47
Rm*NegD	0.17	1.41	0.10	0.81	0.11	0.78		
Rm*NegD*ArrestD			0.26	4.60				
Rm*NegD*PersD					0.25	2.09		
Rm*NegD*ForceD							0.13	0.96
Rm*NegD*OtherD							-0.07	-0.28
Adjusted R2	0.657		0.659		0.656		0.654	

Table 5. Regressions of Lukoil's returns on market returns and event variables

This table presents results of the regressions (1), (4), (5), and (6) of daily Lukoil's returns on market returns and event variables during the period from January 1, 2002 to December 30, 2003. During this period, there were 11 positive and 27 negative events for Lukoil; 12 positive and 44 negative events for YUKOS. The event dummies are defined as follows: PosD and NegD are equal to one in the case of a positive and negative event, respectively; ForceD and OtherD are equal to one if a law enforcement agency and other state agency is mentioned in the news, respectively. "Y" at the end denotes the variables referring to YUKOS events. The *t*-statistics are corrected for heteroscedasticity and autocorrelation (with 5 lags).

	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Const	0.01	0.15	0.01	0.13	0.01	0.16	0.01	0.12
PosD	-0.13	-0.15	-0.13	-0.15	-0.14	-0.17	-0.23	-0.27
NegD	-0.40	-1.71			-0.41	-1.73		
NegD*ForceD			-0.81	-2.55			-0.83	-2.59
NegD*OtherD			-0.23	-0.74			-0.19	-0.65
PosDY					0.14	0.38	0.15	0.40
NegDY					-0.27	-1.35		
NegDY*ForceDY							-0.34	-1.34
NegDY*OtherDY							-0.07	-0.30
Rm	0.94	19.90	0.94	19.90	0.95	20.55	0.95	20.23
Rm*PosD	-0.13	-0.38	-0.13	-0.38	-0.15	-0.43	-0.10	-0.28
Rm*NegD	-0.14	-1.33			-0.12	-1.08		
Rm*NegD*ForceD			-0.20	-2.11			-0.26	-2.35
Rm*NegD*OtherD			-0.20	-1.03			-0.23	-1.29
Rm*PosDY					0.21	1.98	0.21	1.93
Rm*NegDY					-0.14	-1.10		
Rm*NegDY*ForceDY							0.00	0.04
Rm*NegDY*OtherDY							-0.37	-2.96
Adjusted R2	0.624		0.623		0.626		0.629	

Table 6. Regressions of Gazprom's returns on market returns and event variables

This table presents results of the regressions (1), (4), (5), and (6) of daily Gazprom's returns on market returns and event variables during the period from January 1, 2002 to December 30, 2003. During this period, there were 6 positive and 24 negative events for Gazprom; 12 positive and 44 negative events for YUKOS. The event dummies are defined as follows: PosD and NegD are equal to one in the case of a positive and negative event, respectively; ForceD and OtherD are equal to one if a law enforcement agency and other state agency is mentioned in the news, respectively. "Y" at the end denotes the variables referring to YUKOS events. The *t*-statistics are corrected for heteroscedasticity and autocorrelation (with 5 lags).

	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
Const	0.02	0.20	0.01	0.19	-0.01	-0.08	-0.01	-0.07
PosD	0.68	0.98	0.68	0.98	0.63	0.95	0.60	0.91
NegD	0.07	0.21			0.08	0.25		
NegD*ForceD			-0.55	-0.91			-0.52	-0.85
NegD*OtherD			0.51	2.29			0.52	2.23
PosDY					-0.27	-0.57	-0.26	-0.54
NegDY					0.19	0.58		
NegDY*ForceDY							0.19	0.63
NegDY*OtherDY							0.20	0.35
Rm	0.95	15.87	0.95	15.89	0.97	16.13	0.97	16.15
Rm*PosD	0.92	2.71	0.92	2.71	0.96	2.70	0.98	2.83
Rm*NegD	-0.21	-1.28			-0.21	-1.27		
Rm*NegD*ForceD			-0.10	-0.30			-0.11	-0.33
Rm*NegD*OtherD			-0.37	-2.64			-0.36	-2.58
Rm*PosDY					0.03	0.18	0.02	0.16
Rm*NegDY					-0.08	-0.54		
Rm*NegDY*ForceDY							-0.01	-0.06
Rm*NegDY*OtherDY							-0.17	-1.84
Adjusted R2	0.56		0.561		0.558		0.557	

Figure 1. Dynamics of YUKOS stock price and market index in 2002-2003

This graph shows the dynamics of daily values of YUKOS stock and market index during the period from January 1, 2002 to December 30, 2003 (both normalized to 100 in the beginning). The dates of positive events are marked as yellow cubes on the top of the graph, while the dates of negative events are marked as red diamonds on the bottom of the graph.

