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Is Political Risk Company-Specific? The Market Side of the Yukos Affair

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The Market Side of the *Yukos* Affair[*]

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Preliminary; comments are welcome

Abstract

The *Yukos* affair, a high-profile story of the state-led assault on a private Russian company, provides an excellent opportunity for an inquiry into the nature of company-specific political risks in emerging markets. News associated primarily with law enforcement agencies' actions against company's managers, not formally related to the company itself, caused significant negative abnormal returns for *Yukos*. The results are robust and not driven by a few major events, such as the arrests of *Yukos*' top managers and shareholders. Stocks of less transparent private Russian companies have been more sensitive to *Yukos*-related events, especially employee-related charges by law enforcement agencies. The situation was different for less transparent government-owned companies such as the world-largest natural gas producer *Gazprom*: they appear to be significantly less sensitive to these events. Actions of regulatory agencies have had predominantly industry-wide impact, whereas law-enforcement agencies' actions affected shares of large private companies, especially those privatized in the notorious loans-for-shares privatization auctions.

Keywords: company-specific political risk, event study, Russian stock market, oil,

privatization

JELs: G28, G14, P16

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1. Introduction

Political risk is a salient feature of emerging markets.[1] However, finance scholars focus predominantly on country-specific risks (e.g., Eichengreen and Mody, 1998, Johnson, Kaufmann, and Zoido-Lobaton, 1998, and Mei, 1999, Clark and Tunaru, 2000, Azam, Bates, and Biais, 2004).[2] 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 a unique opportunity to uncover the hidden link between politics and finance at the company level (see Fisman, 2001, and Johnson and Mitton, 2002).

Formally, the initial criminal charges brought against the major shareholders and top managers of *Yukos* had no direct link to the company.[3] Yet, the market capitalization of *Yukos* decreased dramatically after its managers' arrests and other actions of the government agencies against the company and its employees. Moreover, stock prices of other Russian companies reacted strongly to *Yukos'* events, despite repeated re-assurance of various Russian officials, including President Putin, that there will be no other action on the same blueprint.

Recent studies of political connections of businessmen in Russia (Desai, Dyck, and Zingales, 2004, Frye, 2005, Guriev and Rachinsky, 2005, Hoff and Stiglitz, 2004, Sonin, 2003) or elsewhere (Faccio, 2004, Fisman, 2001, Johnson and Mitton, 2002, Morck, Stangeland, and Yeung, 2000, Morck, Wolfenzon, and Yeung, 2004) have concentrated on their political impact on protection of property rights, which has often been negative. We, instead, return to a classic view on the main source that threatens property rights of private entrepreneurs: the state.[4] However, unlike e.g. Azam, Bates, and Biais (2004), we focus not on establishing the fact that

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[1] Political risks most usually include nationalization or expropriation, currency and exchange controls, regulation and tax regime, and general instability, e.g. caused by terrorism. A legal scholar defines political risk as one that is "associated with business or investment in a country which would not be present in another country with a more stable and developed business and economic climate and regulatory regime" (Hill, 1998). For an early political-science perspective of financial risks associated with politics, see LaPalombara (1982).

[2] Earlier studies include Ekern (1971), Eaton and Turnovsky (1983), Cutler, Poterba, and Summers (1989), Erb, Harvey, and Viskanta (1996), Bailey and Chung (1995), and Clark (1997).

[3] Sufficient to say, Standard & Poor's, a leading international rating agency, has left Yukos' ratings (BB/Stable; ruAA+) unchanged in the days following its CEO jailing. The agency's statement that circulated after Michail Khodorkovsky's arrest – four months after the arrest of Platon Lebedev, the company's chief financial officer – said: "The positive operational and financial indices of the company and its high liquidity protect creditors from the negative effects of these developments."

[4] The modern development literature supplied a number of investigations, both theoretical and empirical, where the government is the main source of risk, e.g. Alesina and Tabellini (1989), Persson and Tabellini (1991), and Rodrik (1991).

state predation hinders economic development, but on the actual mechanism of a single predation episode.

Frye (2005) observes that the commitment problem, emphasized in political science literature since the pioneering work of North and Weingast (1989) (see also Acemoglu, 2003), is central to understanding the negative impact of the state involvement into economic activity. Weingast (1993) posed the main dilemma as follows: "A government strong enough to protect property and enforce contracts is also strong enough to confiscate the wealth of its citizens." Jones Luong and Weinthal (2004) argued that the Russian tax code emerging since 1998 was a "product of a mutually beneficial exchange between the Russian government and the Russian oil companies".[5] The events of the Fall of 2003 put an abrupt end to this exchange. One of the goals of our analysis is to study the first market reaction to a sudden change – not just in a tax regime, but in the whole set of institutional arrangements at the marketplace.

Another goal of our analysis is to learn how the involvement of the state agencies affected stock market performance of *Yukos* and other Russian companies during the first months of the assault. We investigate in detail the *Yukos* stock price behavior in response to different types of events and examine the factors that could explain the differences in other companies' stock price reaction to *Yukos*' events. Our analysis is based on 53 events defined as publications in which *Yukos* has been mentioned along with one of the state agencies during a period from January 2002 to November 2003. The choice of November 2003 as the terminal date is dictated by the fact that in December 3, 2003, the Ministry of Tax Affairs issued the first back-dated tax claim against *Yukos*. A year and a half later, the company practically collapsed under the burden of this and many other back-dated tax claims; however, the developments since November 2003 are of less interest to us, since the decrease in *Yukos* market capitalization has been now directly linked to the size of these tax liabilities.

At the early stages of the affair, the tactics of the state has not yet been settled on mounting tax claims against *Yukos*; various ministries and individual government officials have been used during this time. Accordingly, typical events in our data-set are (threats of) penalties, threats to revoke the license for non-fulfillment of the conditions of an agreement, and charges for

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[5] See also Desai, Dyck, and Zingales (2004) for a very different view of roles of the state and oil companies in determining tax enforcement institutions in Russia.

involvement in past privatization deals or for personal tax evasion.[6] In the first part of the paper, we analyze using the market model as a benchmark how news involving *Yukos* along with different types of state agencies affected the level of the company's returns and their systematic risk. It appears that *Yukos'* returns were mostly driven by the employee-related charges by the law enforcement agencies rather than charges against the company. These results are robust and not driven by a few major events, such as the arrests of *Yukos'* top managers and shareholders.

Then, using a sample of 25 most liquid Russian common stocks, we run pooled cross-sectional regressions of stock returns during the event dates on the company-specific political risk exposures, proxied by the government ownership and the Transparency&Disclosure index by Standard&Poors, interacted with *Yukos'* returns. We find that stock prices of less transparent private companies and more transparent government-owned companies are more sensitive to *Yukos'* events, especially the employee-related charges by the law enforcement agencies. This is consistent with the view that these companies face a higher risk of expropriation through the use of such political instruments as selective tax enforcement.

Finally, we investigate in detail the stock price behavior of two other large Russian companies, *Lukoil* and *Gazprom*, in response to the company-related (i.e., their own) news involving state agencies as well as Yukos' news. We find that stock returns of *Lukoil*, a company closely affiliated with the government, but still having a certain degree of independence, 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.

On the surface, there seems to be a similarity between high-profile cases of public companies such as *Enron*, *WorldCom*, and *Parmalat*, where news about the government-led investigations have had a significant impact on share prices. However, these cases are starkly different. First, the political side of investigations into *Enron* and *WorldCom* affairs was at maximum marginal compared to the *Yukos* case (and possibly non-existent at all). In other words, problems of these companies were primarily related to the economic side of their

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[6] It should be stressed that most charges during the sample period were unrelated to Yukos' own privatization history and business. They dealt primarily with other privatization deals in which Yukos' individual shareholders had been involved.

business, while the *Yukos* problems (and respective drops in the share prices) have been caused by the political assault as such.

Second, investigation announcements in the case of *Enron* and *WorldCom* have caused drops in the 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. So, while the last days of the *Enron* saga is a text-book example of the impact of negative information, the *Yukos* story allows one to read the investors' mind: in an emerging market, the personal fate of the CEO is a major determinant of the shareholder value.

A more relevant analogy can be drawn with the history of the Standard Oil break-up and other anti-trust investigations.[7] (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 has faced 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 in large.[8]

The closest paper to ours is that by Fisman (2001) studying how political connections of Indonesian companies affected their stock market performance in 1995. 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. Johnson and Mitton (2003) study an interaction between cronyism and capital controls in Malaysia at the time of the Asian crisis. They find that many firms with political connections lost valuable subsidies during the first phase of the crisis; however, some of

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[7] 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.

[8] Back in 1903, economist Gilbert Holland Montague writing for The Quarterly Journal of Economics (Montague, 1903) concludes his evaluation: "The present position of the Standard Oil Company is one abundant of prosperity and power."

them restored subsidies after the government imposed capital controls in September 1998. Chen et al. (2004) find that post-IPO underperformance of Chinese companies is largely attributable to the presence of politically-connected CEOs. Faccio (2004) examines the value of corporate connections with political officials using a comprehensive cross-country set of firms. She finds a significant increase in market capitalization when the company's directors or large shareholders enter politics, but not when politicians become involved in business.

The rest of the paper is organized as follows. In Section 2, we discuss the chronology of major *Yukos'* events since its creation in 1993 and alternative interpretations of the affair. Section 3 describes the data. In section 4, we employ time series analysis to investigate the *Yukos* stock price behavior in response to different types of events. In section 5, we use a pooled regression approach to examine factors that could explain the differences in other companies' stock price reaction to Yukos' events. Section 6 presents a detailed time series analysis of the stock price behaviour of *Lukoil* and *Gazprom* in response to their own events and *Yukos'* events involving state agencies. Section 7 concludes.

2. The Yukos Story

The story of Yukos has been recently reported in a number of policy texts (e.g., Aron, 2003, Hill, 2004) and newspaper articles (we use the most trusted popular sources such as the *Economist, New York Times, Financial Times,* and *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.

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.[9] Frieland (2001) (see also Hoffman, 2002) provides a comprehensive and colorful description of the privatization auctions; anecdotal evidence of extreme forms of corruption in these auctions is overwhelming (e.g. Goldman, 2003; see however, Shleifer and Treisman, 2000, on the impossibility of another course of economic reforms). Until the moment

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[9] The company's 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).

when the Yukos core shareholder group accumulated an absolute majority of shares, the fate of minority shareholders, including foreign institutional investors, has been miserable.

Since 1998, however, *Yukos* has often been 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 the U.S. GAAP. 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. On August 2001, the *New York Times* reported "Mr. Khodorkovsky has concentrated on recasting *Yukos* to look more like a company that investors can trust."[10]

The growth rate of the *Yukos* output was 17 percent in 2001, 19 percent in 2002, and 20 percent in 2003. 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". In a paper asserting at least a partial success of Russian economic reforms, Shleifer and Treisman (2005) use *Yukos* as a success story and note that "in 2002, Yukos invested $1.26 billion in property, plant, and equipment", refuting the argument that oligarchs are just stripping assets from the company. (Guriev and Rachinsky, 2005, demonstrated that Russian oligarch-owned companies actually invested significantly more than companies with any other ownership structure.)

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 much faster than that of any other major oil company in the world. At the time of the assault, *Yukos* was the largest oil company in Russia and conceded only to *Gazprom* among all Russian companies, judged by market capitalization (see Table 1).

Events that started a new page in the Yukos history and attracted attention world-wide were the 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 of Yukos (Khodorkovsky is also a major owner of Menatep) was arrested

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[10] The New York Times, August 18, 2001, Fortune in Hand, Russian Tries to Polish Image.

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, 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 was also a coordinated attack on Yukos core shareholders in media, most prominently in all the televised news. On December 2, 2003, the Ministry for Tax Collection informed the Prosecutor's office that Yukos concealed at least $5 billion in taxes in 1998-2001. Interestingly, on all the previous counts of tax-related charges, Yukos had already won all the trials and the Ministry had publicly agreed that there were no over-due taxes.

Even now, a couple of years since the beginning of the Yukos affair, its "political side" 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 allegedly 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. *The New York Times* editorialized on August 13, 2003: "It is not surprising that nobody knows for sure whether President Vladimir Putin is personally behind the sudden crackdown on the giant oil company *Yukos*, or really why it is happening. What is clear is that the Kremlin's strong-arm tactics have little to do with battling economic crime and a lot to do with power and the coming elections in Russia. They are also of little help to Russia's tenuous democracy." Among evaluation of the merits of the charges after the Khodorkovsky arrest, the following one was typical: "The charges of fraud and income tax evasion appear to be little more than a crude campaign to punish Khodorkovsky and his partners." (*Washington Post*, November 2, 2003).[11] The subsequent development has confirmed this position: "Whatever the merit of the charges, no one doubts the prosecution is politically motivated" (*Wall Street Journal Europe*, September 1,

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[11] At the very early stage, prior to Mikhail Khodorkovsky arrest, media were even more cautious: "The crackdown on Mikhail Khodorkovsy has many causes, not least Kremlin intrigue and public anger at the wealth of the oligarchs." (*Financial Times*, July 31, 2003); "At first, investors shrugged off the series of raids on the periphery of the empire of Russia's richest man, Mikhail B. Khodorkovsky, as just a passing unpleasantness. Now, as the wrangle drags into its fourth week, investors are starting to worry." (*New York Times*, July 31, 2003).

2003).[12] "The arrest was widely seen as a Kremlin-backed campaign to clip the political ambitions of Russia's richest man, who at one point considered running against President Vladimir V. Putin." (*New York Times*, April 12, 2004). In November 2004, the *Economist* concluded that "Most think the government's persecution of Yukos, one of Russia's biggest oil companies—and its boss and major shareholder, Mikhail Khodorkovsky—is politically driven. The crackdown has scared investors, who are fleeing despite the surging oil price."

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. Description of the data

The events analyzed in our study were selected by searching the archives of RBC news as well as *Kommersant* and *Vedomosti*[13] articles by keywords "Yukos" and a name of one of the *law enforcement* agencies (Prosecutor's office, Ministry of Internal Affairs, Federal Security Service, and Ministry of Tax Collection) or the *other* government agencies (Ministry of Natural Resources, Ministry of Anti-Monopoly Policy, Russian Federal Property Fund, and State Auditing Chamber). It should be emphasized that the 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 (unrelated to *Yukos*) or personal 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 11 positive and 42 negative events for *Yukos*.

In order to study the specifics of market reaction to different types of events, we divide all negative events into three groups: 16 employee-related news initiated by the law enforcement

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[12] "Political Prosecutions Threaten Russia's Ambitions." *The Wall Street Journal Europe* September 1, 2003.

[13] RBC (RosBusinessConsulting) is a leading Russian provider of business information. *Kommersant* 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.

agencies,[14] 19 company-related events involving the law enforcement agencies, and 14 company-related events involving the non-law-enforcement agencies.[15] We do not make a similar division for positive events, since their number is too small and since most of them (9 out of 11) are initiated by the non-law-enforcement agencies.

In addition, we gathered similar sets of positive and negative events for *Gazprom* and *Lukoil*, the largest and third-largest Russian companies by market capitalization at the beginning of 2004, respectively. Our data set comprises 30 events (including 6 positive ones) for *Gazprom* and 38 events (11 positive ones) for *Lukoil*.

Our analysis of stock market reaction to *Yukos* events is based on daily dividend-adjusted returns of most liquid Russian stocks.[16] We take the S&P/RUX as a proxy for the market portfolio.[17] The sample period is from January 1, 2002 to November 27, 2003, including 475 trading days. We deliberately choose November 2003 as the terminal date. It is motivated by the fact that in December 3, 2003, the Ministry of Tax Affairs made the first official statement that *Yukos* had evaded taxes and owed a certain amount to the state, which directly affected the value of the company. During the sample period, *Yukos* was involved in another dramatic event – a failed merger with another Russian oil company, *Sibneft*. The merger was officially announced in April 22, 2003; *Sibneft* announced a break-up of the deal in November 28, 2003. The exclusion of the merger announcement date from the sample does not affect the results.

In the cross-sectional analysis, we use two variables as main proxies for the company-specific exposures to political risk: (i) the total common stock ownership stake of the federal and regional governments at the end of 2002, and (ii) the Transparency&Disclosure (T&D) score by Standard&Poors, as of August 13, 2002. Several other variables such as industry dummies, dummy equal to 1 for stocks with ADRs traded at NYSE, the company's market capitalization, and fraction of shares sold at loans-for-shares auctions are used as controls.

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[14] These are news affecting a person who is a Yukos' employee rather than the company. The most prominent examples are arrests of Yukos top managers based on charges unrelated to the company. Interestingly, there are no employee-related news initiated by the non-law-enforcement agencies.

[15] The last two groups intersect, as there are 7 negative company-related events involving both types of agencies.

[16] We used daily close prices in MICEX ("Moscow Interbank Currency Exchange") for most of the stocks. For four stocks (MTS, VimpelCom, Golden Telecom, and Wimm-Bill-Dann) that were primarily traded in NYSE, we used the corresponding ADR close prices.

[17] 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.

Our final sample includes 25 common stocks of large Russian companies that were actively traded during the sample period and had T&D score. Table 1 shows their descriptive statistics. Even though the five largest companies are from the oil and gas sector, other industries such utilities (6 companies), telecoms (5 companies), machinery, and metallurgy (both with 2 companies) are also well-represented. The government-owned companies are concentrated in the utilities and telecoms; the federal government effectively controls the gas monopolist *Gazprom* with a 38% stake and the largest retail bank *Sberbank* with a 64% stake. The T&D scores range from 0.14 for *Avtovaz,* which is a private auto-making company and 0.17 for *Rostovenergo,* a state-owned utility company, to 0.77 for the leading private mobile operator MTS. On average, the T&D scores are higher for private companies than for the government-owned ones (0.4 and 0.3, respectively).

Figure 1 shows the dynamics of the market index and *Yukos* prices during the sample period (both normalized to 100 in the beginning). It is clearly seen from the figure that *Yukos* stock price was ahead of the market index until the arrests of *Yukos'* CFO Platon Lebedev and CEO Mikhail Khodorkovsky, which led to the sharp falls in stock price in July 3, 2003, and October 27, 2003, respectively.

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 0.18% and standard deviation of 1.93% in daily terms. *Yukos* stock had a slightly higher return (0.21%) and much higher volatility (2.74%). Days with *Yukos* events were even more volatile: positive news was 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.

We carry out a preliminary analysis of the impact of government-related news on *Yukos* returns using a control portfolio, which is a value-weighted portfolio of four other large Russian oil companies: *Lukoil, Sibneft, Tatneft*, and *Surgutneftegaz* (see Table 1). During the sample period, the control portfolio had an average daily return of 0.18% p.a., which rose to 1.55% and fell to -0.78% during the days with positive and negative events, respectively (see Table 2). However, these swings were less pronounced than those for *Yukos*, as its average abnormal return (defined as the difference between *Yukos'* return and control portfolio's return), close to zero during the whole sample period, increased to 0.78% in response to positive news and

decreased to -1.02% after negative news. The *Yukos'* stock price sensitivity to political news was the highest with respect to the employee-related news initiated by the law enforcement agencies, which were associated with -1.27% abnormal return which once again proves the political nature of risks faced by the company and incorporated by investors in its market valuation.

4. The reaction of *Yukos* shares to political news

In this section, we investigate the reaction of Yukos stock price to the involvement of the state agencies, using time series analysis and employing the market model as a benchmark. The basic model is as follows:

$$R_{Y,t} = \alpha_0 + \alpha_1 Pos_t + \alpha_2 Neg_t + (\beta_0 + \beta_1 Pos_t + \beta_2 Neg_t) R_{M,t} + \varepsilon_t, \tag{1}$$

where $R_{Y,t}$ and $R_{M,t}$ are returns of Yukos and market index[18] in day t; *Pos* and *Neg* are dummy variables equal to 1 in the case of positive and negative events, 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 all subsequent regressions, we compute Newey-West heteroscedasticity and autocorrelation consistent standard errors.

The estimation results (see columns 2-3 of Table 3) reinforce the preliminary conclusions we made in the previous section. We find that negative events are associated with highly significant negative daily abnormal returns in the order of -1.25%. Both types of news lead to a significantly higher market risk: beta increases by 0.9 in response to positive events and by 0.51 after negative news. Thus, negative events primarily influence the level of returns (*Yukos* stock falls more than the market does), 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).

In order to check the robustness of our findings to the presence of major events such as top managers' arrests, we define an additional dummy variable *Arrest* equal to one during the days of the arrests of *Yukos'* top managers and shareholders, Platon Lebedev and Mikhail Khodorkovsky (July 3 and October 27, 2003). In the regression

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[18] In the regression analysis, we use an equally-weighted index of 47 most liquid Russian stocks rather than S&P/RUX, which is a value-weighted market index, to avoid the erroneous correlation between the stock price of a large company and its market beta (a large fall in stock price implies a decrease in its weight in the value-weighted market index and, as a consequence, a decrease in beta). The results stay qualitatively the same when we use S&P/RUX as the market index.

$$R_{Y,t} = \alpha_0 + \alpha_1 Pos_t + \alpha_2 Neg_t + \alpha_3 Neg_t Arrest_t$$

$$+ (\beta_0 + \beta_1 Pos_t + \beta_2 Neg_t + \beta_3 Neg_t Arrest_t) R_{M,t} + \varepsilon_t, \tag{2}$$

α_3 and β_3 measure the difference between market reaction to *Yukos* top managers' arrests and other negative events.

The estimation results demonstrate that our general 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 -1.14%, while arrests implied further 3% decline in price (see columns 4-5 in Table 3).

In order to study the specifics of market reaction to different types of news, we define two additional dummy variables: *Pers* equals one when the news affected a *person* (a Yukos' employee rather than the company) and *Comp* is equal to one if the charges were directed against the *company*. To separate the impact of different types of state agencies, we introduce two more dummies: *Force* and *Other* that are equal to one if one of the law enforcement agencies or one of other state agencies was mentioned in the news, respectively. Since we do not have many positive events, we study interaction effects between the additional dummy variables and *NegD*. The regression is as follows:

$$R_{Y,t} = \alpha_0 + \alpha_1 Pos_t + \alpha_4 Neg_t Pers_t Force_t + \alpha_5 Neg_t Comp_t Force_t + \alpha_6 Neg_t Comp_t Other_t$$

$$+ (\beta_0 + \beta_1 Pos_t + \beta_4 Neg_t Pers_t Force_t + \beta_5 Neg_t Comp_t Force_t + \beta_6 Neg_t Comp_t Other_t) R_{M,t} + \varepsilon_t. \tag{3}$$

From the three types of events, negative employee-related news initiated by the law enforcement agencies appear to be the most important, driving down the level of company returns by 1.2% and increasing beta by 0.43 (see columns 6-7 in Table 3). The fact that the company-related charges have no significant impact on Yukos stock price seems puzzling. Apparently, the market perceives the personal charges as a much better signal about the future of Yukos.

5. The reaction of other companies to Yukos events

The preliminary analysis in section 3 demonstrated a strong market-wide reaction to Yukos events. In this section, we investigate whether there are systematic differences in the reaction of individual companies to Yukos events related to the company-specific exposures to political risk.

We run pooled cross-sectional regressions of stock returns on proxies for the company-specific political risk exposure as well as Yukos returns interacted with the proxies:

$$R_{i,t} = a_0 + a_1 GVT_i + a_2 TD_i + a_3 GVT_i TD_i + (b_0 + b_1 GVT_i + b_2 TD_i + b_3 GVT_i TD_i)R_{Y,t} + \varepsilon_t, \qquad (4)$$

where $R_{i,t}$ is company i's return in day t; GVT_i and TD_i denote the government's common stock ownership and T&D score of company i, respectively. As we will see, the impact of the T&D score is opposite for private and government-owned companies; this difference is captured by the coefficient on the interaction effect between GVT_i and TD_i. In this model, we allow the coefficients on political risk proxies to be greater for more important events, as measured by Yukos return, $R_{Y,t}$.[19]

This regression is estimated for different subsets of the events: positive, negative, negative employee-related, negative company-related with the law enforcement agencies, negative company-related with the non-law-enforcement agencies, and finally negative with Yukos return below -2% (there were 19 events of this type). Table 4 reports the results.

Our main inference is based on the estimation results for the subset of all negative events. We observe that the sensitivity of both private and government-owned companies' stock prices to *Yukos*' negative events rises with the absolute value of *Yukos* return. For private companies, this sensitivity is significantly lower for higher levels of transparency. For example, if we compare the least and the most transparent private companies, *Avtovaz* and *MTS*, an incremental 1% fall in *Yukos* price will lead to the additional 0.8% fall in the stock price for the former and mere 0.1% fall for the latter. For an average private company (with T&D of 0.4) or an average state-controlled company (with the government stake of 50% and T&D of 0.3), this will lead to approximately 0.5% reduction in stock price. However, higher transparency of the government-owned companies leads to an increase in the sensitivity to *Yukos* return, which is contrary to the findings for private companies. Thus, less transparent private companies and more transparent government-owned companies seems to be more prone to the political risks.

Looking at the estimation results for the different subsets of negative events, we observe similar patterns. Once again, the negative employee-related events involving the law

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[19] This approach is similar to that by Fisman (2001) who used the return on the Indonesian stock index net of South Asian effects as a measure of the importance of the event. We obtain similar results when we use the market return instead of Yukos return.

enforcement agencies seem to be the most important, in this case – not only for Yukos, but also for other companies.

We employ a number of robustness checks, adding several control variables to the model (4), one at a time: oil and energy industry dummies, ADR dummy for stocks with ADRs traded at NYSE, the log of company's market capitalization, and the fraction of shares sold at loans-for-shares auctions. Neither of these variables changes our main results. Oil companies and companies that took part in the notorious loans-for-shares auctions seem to be more sensitive to Yukos events. However, in a regression adding both variables to the main specification (4), the oil industry dummy sensitivity coefficient remains significant only in the subset of negative company-related events involving non-law-enforcement agencies, whereas the loans-for-shares variable has a significantly positive sensitivity coefficient in the subsets of negative events initiated by the law-enforcement agencies. Thus, the actions of such non-law-enforcement agencies as the Ministry of Natural Resources (e.g., revoking of the license) seem to have an industry-wide impact, whereas the law-enforcement agencies' actions matter especially for large privatized companies, especially those that took part in the notorious loans-for-shares auctions.

The coefficients on other control variables were insignificant. As another robustness check, we also estimated the model (4) including fixed time effects; this did not materially change our results.

6. The stock price behavior of *Lukoil* and *Gazprom*

In the final part of the paper, we extend our analysis of political risks to two other major Russian companies, *Lukoil* and *Gazprom*. After the decline in *Yukos*' market capitalization due to its prosecution, *Lukoil* became the largest oil producer in Russia. It is a private company, although the government held a minor (7.6%) stake until September 29, 2004, when this stake was sold to *ConocoPhillips*. *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 (38%) 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 (3)) 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

$$R_t = \alpha_0 + \alpha_1 Pos_t + \alpha_2 Neg_t + \alpha_7 PosY_t + \alpha_8 NegY_t$$
$$+ (\beta_0 + \beta_1 Pos_t + \beta_2 Neg_t + \beta_7 PosY_t + \beta_8 NegY_t) R_{M,t} + \varepsilon_t, \tag{5}$$

where the event dummies are defined as before and 'Y' denotes variables referring to Yukos, 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:

$$R_t = \alpha_0 + \alpha_1 Pos_t + \alpha_5 Neg_t Force_t + \alpha_6 Neg_t Other_t$$
$$+ \alpha_7 PosY_t + \alpha_9 NegY_t ForceY_t + \alpha_{10} NegY_t OtherY_t$$
$$+ (\beta_0 + \beta_1 Pos_t + \beta_5 Neg_t Force_t + \beta_6 Neg_t Other_t$$
$$+ \beta_7 PosY_t + \beta_9 NegY_t ForceY_t + \beta_{10} NegY_t OtherY_t) R_{M,t} + \varepsilon_t \tag{6}$$

where the event dummies are defined along similar lines.

Tables 5 and 6 present results of the regression analysis for *Lukoil* and *Gazprom*, respectively. Similarly to *Yukos*, *Lukoil*'s returns are primarily affected by negative news involving the law enforcement agencies, which lead to a significant decline in the level of daily returns by 0.72%. It seems that the market seriously considers the possibility of yet another case against a private oil company. Negative news for *Lukoil* also increases its systematic risk by 0.41. Negative *Yukos* news had a marginally significant impact (at the 10% level) both on the level of *Lukoil*'s returns, which go down by 0.44%, and its beta, which falls by 0.22. Separating the impact of different types of *Yukos* news, we see that *Yukos* news involving other agencies primarily affect the level of *Lukoil*'s returns. It seems that actions of such agencies as the Ministry of Natural Resources directed against *Yukos* convey a signal about the Ministry's inentions concerning the whole oil industry. However, *Lukoil*'s systematic risk is primarily driven by *Yukos* person-related news due to the 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*.

The nature of political risks for *Gazprom* is very 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 controlled by the government. However, negative news involving the other state agencies lead to a significant *increase* in the level of *Gazprom*'s daily returns by 0.64% and significant decrease in its market beta by 0.54. Such market reaction 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 have a rather peculiar impact on *Gazprom*'s stock market performance. Most interestingly, positive *Yukos* news are associated with a significant decrease both in the level and in the systematic risk of *Gazprom*'s returns. This is consistent with the view that *Gazprom* could profit from the break-up of *Yukos*, which was proven recently at the sale of *Yukos*' major asset, *Yuganskneftegaz*.

7. Conclusion

In finance, the term 'political risk' usually applies to a country as whole, being associated with possible changes in regulation, trade agreements, etc. This paper provides strong evidence that the involvement of state agencies (in particular, law enforcement agencies) is still a very important company-specific factor affecting returns in the Russian stock market.

In the case of *Yukos*, negative events associated primarily with law enforcement agencies' actions against the company's employees caused significant drops in stock prices, with the daily abnormal returns in the order of -1.1%. 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%. Both positive and negative news about personal charges and arrests implied a significant increase in the company's systematic risk, as the other companies' stock prices also reacted strongly to *Yukos* events.

Apparently, *Yukos* events are interpreted a signal about the possible propagation of the prosecution scenario to other companies. We find that stock prices of less transparent private companies and more transparent government-owned companies are more sensitive to *Yukos*' events, especially the personal-related charges by the law enforcement agencies. In addition, companies that took part in the notorious loans-for-shares auctions are more sensitive to the actions of the law enforcement agencies. Writing in 2004, William Buiter, the Chief Economist

of the European Bank for Reconstruction and Development, observed that "the Yukos affair in Russia is a timely reminder of the vulnerability of property rights acquired through a privatization process that lacks legitimacy." Our findings are consistent with the view that they face a higher risk of expropriation through the use of such political instruments as selective tax enforcement.

The stock market performance of *Lukoil*, the second-largest Russian oil producer was significantly affected by negative news concerning *Yukos*. *Lukoil*'s own negative news due to the law enforcement agencies brought down its abnormal return by 0.7%. 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 the inefficiently managed state companies. For *Gazprom*, a government-controlled gas monopolist, this led to a 0.6% increase in the daily abnormal return. It stock price was also affected by *Yukos* events, although in different way consistent with the view that *Gazprom* would profit from *Yukos*' bankruptcy.

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Table 1. Descriptive statistics of selected Russian companies

The table reports market capitalization (as of November 27, 2003), the total common stock ownership stake of federal and regional governments (as of the end of 2002), and transparency&disclosure (T&D) score by Standard&Poors (as of August 13, 2002) of 25 Russian companies in the sample.

Company	Industry	Market cap, $ mln	Government stake, %	T&D
Gazprom	Gas	30133	38%	0.26
Yukos	Oil	26931	0%	0.52
Surgutneftegaz	Oil	18995	0%	0.34
Lukoil	Oil	18564	8%	0.44
Sibneft	Oil	11480	0%	0.39
RAO UES	Utilities	10695	53%	0.43
MTS	Telecoms	8222	0%	0.77
Norilskiy nikel	Metallurgy	7369	0%	0.42
Sberbank	Banking	3635	64%	0.28
VimpelCom	Telecoms	2802	0%	0.49
Severstal	Metallurgy	2450	0%	0.25
Tatneft	Oil	2261	31%	0.33
Mosenergo	Utilities	1827	54%	0.39
Rostelecom	Telecoms	1414	51%	0.48
Uralsviazinform	Telecoms	1023	53%	0.29
Golden telecom	Telecoms	1011	0%	0.49
Wimm-Bill-Dann	Food & beverages	829	0%	0.73
Avtovaz	Machinery	654	2%	0.14
Aeroflot	Airlines	596	51%	0.36
Irkutskenergo	Utilities	550	40%	0.3
OMZ	Machinery	253	0%	0.26
Samaraenergo	Utilities	215	49%	0.38
Krasnoyarskenergo	Utilities	206	52%	0.25
Sverdlovenergo	Utilities	203	49%	0.23
Rostovenergo	Utilities	94	49%	0.17

Table 2. Summary statistics

This table shows mean and standard deviation of daily returns on market index (S&P/RUX), Yukos, normal and abnormal returns during the overall sample period (January 1, 2002 to November 27, 2003), days with positive events, days with negative events, days with employee-related events, days with company-related events involving law enforcement agencies, and days with company-related events involving non-law-enforcement agencies. The normal return is a return of the value-weighted control portfolio of Lukoil, Sibneft, Tatneft, and Surgutneftegaz, the four largest Russian oil companies (besides Yukos). The abnormal return is the difference between Yukos return and control portfolio's return.

		Overall	Positive events	Negative events			
				All	Pers-Forc	Comp-Forc	Comp-Other
S&P/RUX	Mean	0.18	0.84	-0.63	-1.39	-0.25	0.29
	St.dev.	1.93	1.75	2.82	3.56	2.47	2.07
YUKOS	Mean	0.21	2.33	-1.80	-2.74	-1.11	-0.90
	St.dev.	2.74	3.41	3.91	4.71	3.54	3.08
Normal return	Mean	0.18	1.55	-0.78	-1.47	-0.51	-0.03
	St.dev.	2.37	2.64	2.85	3.42	2.66	2.28
Abnormal return	Mean	0.03	0.78	-1.02	-1.27	-0.60	-0.87
	St.dev	1.68	1.67	2.09	2.53	1.91	1.62

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Table 3. Regressions of Yukos returns on market returns and event variables

This table presents results of the regressions (1) to (3) of daily Yukos returns on market returns and event dummies during the period from January 1, 2002 to November 27, 2003. The event dummies are defined as follows: Pos and Neg are equal to one in the case of positive and negative event, respectively; Arrest is equal to one during the days surrounding the arrests of Yukos' top managers and shareholders; Pers and Comp are equal to one when the news affects Yukos' employee and the company; Force and Other are equal to one if a law enforcement agencies 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.
Const	0.05	0.58	0.05	0.58	0.03	0.33
Pos	0.50	1.00	0.50	1.00	0.52	1.04
Neg	-1.25	-4.25	-1.14	-4.27		
Neg*Arrest			-2.99	-12.10		
Neg*Pers*Force					-1.20	-2.93
Neg*Comp*Force					-0.49	-1.00
Neg*Comp*Other					-1.08	-1.59
Rm	1.17	14.43	1.17	14.43	1.18	14.19
Rm*Pos	0.90	3.55	0.90	3.55	0.89	3.50
Rm*Neg	0.51	3.44	0.39	2.40		
Rm*Neg*Arrest			0.12	0.86		
Rm*Neg*Pers*Force					0.43	2.41
Rm*Neg*Comp*Force					0.57	1.31
Rm*Neg*Comp*Other					0.11	0.22
Adjusted R2	0.56		0.563		0.551	

Table 4. Pooled regressions of stock returns during the event days

This table presents results of the pooled cross-sectional regression (4) of stock returns on the company-specific political risk proxies as well as Yukos returns interacted with proxies during the period from January 1, 2002 to November 27, 2003. The t-statistics are heteroscedasticity-adjusted. GVT_i and TD_i denote the government's common stock ownership and T&D score of company i, respectively. Columns 3 to 8 report results of the regression estimated in different subsets of the events: positive, negative, negative employee-related, negative company-related with the law enforcement agencies, negative company-related with the non-law-enforcement agencies, and major negative (with Yukos return below -2%).

		Positive events	Negative events				
			All	Pers-Force	Comp-Force	Comp-Other	Major
Const	Coef	-2.19	1.19	1.46	0.86	1.66	2.01
	t-stat	-3.37	3.35	2.65	1.72	3.04	2.71
Gvt	Coef	6.29	-2.07	-3.83	-0.78	-4.42	-7.05
	t-stat	1.42	-1.49	-1.70	-0.37	-1.84	-2.62
TD	Coef	3.35	-1.91	-3.21	-1.09	-2.73	-3.73
	t-stat	2.81	-2.65	-2.58	-1.05	-2.73	-2.64
Gvt*TD	Coef	-11.81	5.47	11.64	0.79	13.09	19.13
	t-stat	-1.03	1.52	2.00	0.15	2.15	2.83
Ry	Coef	0.92	0.95	1.18	0.72	0.76	1.06
	t-stat	4.11	9.14	8.94	4.98	3.79	8.59
Ry*Gvt	Coef	-0.93	-1.29	-1.93	-0.56	-0.97	-1.89
	t-stat	-1.03	-3.31	-3.90	-0.77	-1.12	-4.04
Ry*TD	Coef	-0.79	-1.22	-1.73	-0.69	-1.01	-1.51
	t-stat	-2.04	-6.30	-8.01	-2.26	-2.87	-6.92
Ry*Gvt*TD	Coef	1.82	4.07	5.59	2.29	3.89	5.80
	t-stat	0.77	4.20	4.68	1.22	1.84	5.02
# observations		234	889	345	400	298	404
Adjusted R2		0.22	0.35	0.44	0.27	0.22	0.41

Table 5. Regressions of LUKOIL returns on market returns and event variables

This table presents results of the regressions (1), (5), and (6) of daily Lukoil's returns on market returns and event variables during the period from January 1, 2002 to November 27, 2003. The event dummies are defined as follows: Pos and Neg are equal to one in the case of positive and negative event, respectively; Force and Other are equal to one if a law enforcement agencies and other state agency is mentioned in the news, respectively. 'Y' denotes variables referring to Yukos; Pers and Comp are equal to one when the news affects Yukos' employee and the company, 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	-0.07	-0.91	-0.07	-0.94	-0.05	-0.58	-0.05	-0.66
Pos	-0.19	-0.26	-0.19	-0.26	-0.18	-0.27	-0.23	-0.33
Neg	-0.24	-0.92			-0.21	-0.82		
Neg*Force			-0.72	-2.02			-0.76	-2.10
Neg*Other			-0.01	-0.05			0.02	0.06
PosY					-0.19	-0.42	-0.18	-0.40
NegY					-0.44	-1.80		
Neg*Pers*ForceY							-0.18	-0.67
Neg*Comp*ForceY							0.06	0.13
Neg*Comp*OtherY							-1.06	-2.08
Rm	1.11	20.91	1.11	20.91	1.12	20.27	1.12	20.12
Rm*Pos	-0.19	-0.77	-0.19	-0.77	-0.24	-1.06		
Rm*Neg	0.41	2.57			0.50	2.82		
Rm*Neg*Force			0.26	1.48			-0.22	-0.89
Rm*Neg*Other			0.35	1.23			0.13	0.30
Rm*PosY					0.38	1.56	0.39	1.14
Rm*NegY					-0.22	-1.71		
Rm*Neg*Pers*ForceY							0.38	1.57
Rm*Neg*Comp*ForceY							-0.27	-2.80
Rm*Neg*Comp*OtherY							0.17	0.35
Adjusted R2	0.55		0.54		0.55		0.55	

Table 6. Regressions of GAZPROM returns on market returns and event variables

This table presents results of the regressions (1), (5), and (6) of daily Gazprom's returns on market returns and event variables during the period from January 1, 2002 to November 27, 2003. The event dummies are defined as follows: Pos and Neg are equal to one in the case of positive and negative event, respectively; Force and Other are equal to one if a law enforcement agencies and other state agency is mentioned in the news, respectively. 'Y' denotes variables referring to Yukos; Pers and Comp are equal to one when the news affects Yukos' employee and the company, 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	-0.04	-0.44	-0.04	-0.43	-0.05	-0.47	-0.04	-0.43
Pos	0.74	1.63	0.73	1.62	0.66	1.82	0.69	1.69
Neg	0.17	0.43			0.09	0.22		
Neg*Force			-0.12	-0.26			0.12	0.25
Neg*Other			0.64	2.23			0.52	1.65
PosY					-0.92	-1.85	-1.02	-2.03
NegY					0.13	0.36		
Neg*Pers*ForceY							-0.13	-0.19
Neg*Comp*ForceY							0.61	1.50
Neg*Comp*OtherY							-0.51	-1.30
Rm	1.06	13.12	1.06	13.14	1.08	11.97	1.08	12.13
Rm*Pos	0.66	1.34	0.66	1.34	0.32	0.71		
Rm*Neg	-0.25	-1.14			-0.33	-1.39		
Rm*Neg*Force			0.74	0.99			0.26	0.61
Rm*Neg*Other			-0.54	-3.61			0.89	1.13
Rm*PosY					0.74	1.62	-0.70	-3.50
Rm*NegY					-0.11	-0.73		
Rm*Neg*Pers*ForceY							0.83	2.04
Rm*Neg*Comp*ForceY							-0.29	-1.98
Rm*Neg*Comp*OtherY							0.47	1.53
Adjusted R2	0.42		0.423		0.419		0.425	

Figure 1. The dynamics of Yukos 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 November 27, 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.
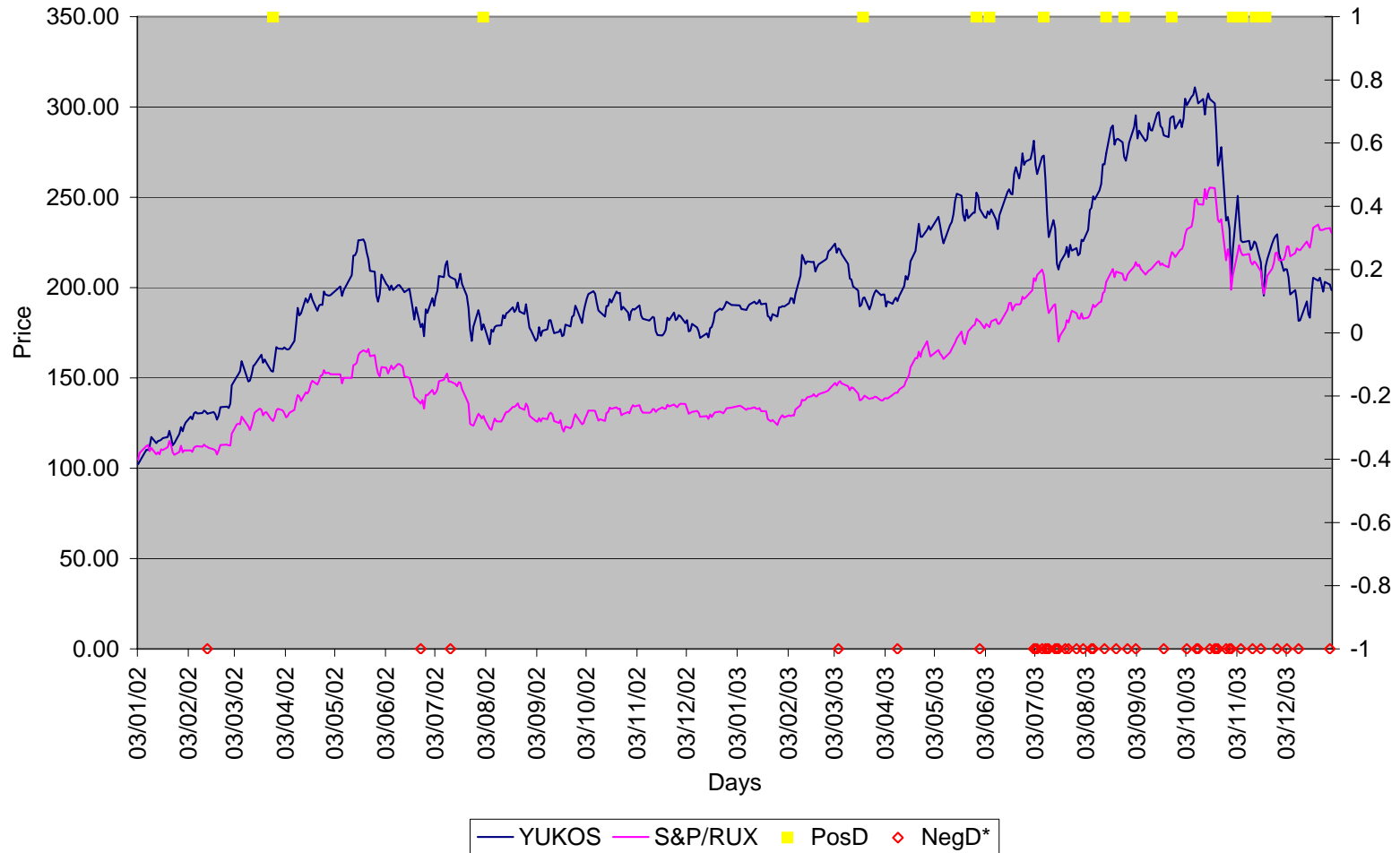
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