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NOBEL BROTHERS PETROLEUM COMPANY ON THE ST.-PETERSBURG STOCK EXCHANGE: FACTORS OF SHARE PRICES DYNAMICS IN THE EARLY 20th CENTURY

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Introduction

While stock exchanges in European countries were well established and financial institutions were playing important roles in their economies at the end of the nineteenth century, the stock market in Russia remained a relatively insignificant part of economic life in the early 1890s. However, with the Russian economy experiencing explosive growth rate in the second half of the 1890s and then again during the take off in 1909-1914, trading securities of joint stock companies on the Russian stock market and especially on the St.-Petersburg Stock Exchange became an important part of Russia's economic development.

The St.-Petersburg Stock Exchange was smaller than exchanges in London, Paris and Berlin, but it played a leading role in the Russian financial markets and the number of securities traded was not far behind that of the New York Stock Exchange. In 1914, there were 295 share issues listed in St.-Petersburg and 521 in New York. When the Dow Jones Industrial Average was first calculated 18 years earlier (in 1896), the number of issues in New York was 383,¹ only 30% more than the number of shares listed in the St.-Petersburg Stock Exchange in 1914.

1 – On history of the St.-Petersburg Exchange, see: P.V. Lizunov, *Russkie tsennyye bumagi na rossiiskikh i evropeiskikh fondovykh birzhakh: konetz XIX nachalo XX v.* [Russian Securities on Russian and European Stock Exchanges: late nineteenth – early twentieth century], *Ekonomicheskaya istoriya. Yezhegodnik* [Economic History. Yearbook], Moscow, 2002, p. 208. Data on the New York Stock Exchange are taken from the NYSE website historical data: <http://www.nyse.com> Table: Number of listed issues - annual statistics (1874-1955).

ABSTRACT

Branobel Petroleum Company was one of the most efficient examples of scientific, technological, infrastructural and financial foreign investments for the development of the Russian Empire in the late 19th and early 20th centuries. The Charter of the Nobel Brothers Petroleum Company was established in 1879. Before WWI the Company became the biggest one among all industrial firms operating in Russia (size of capital). The founders were immigrants from Sweden – the three Nobel brothers: Ludwig, Robert and Alfred, and their friend, Baron Peter Bildering. In 1878, the Nobels received the world's first oil tanker from Sweden. When the company was founded, the Nobel's family-owned enterprise had acquired land oilfields in Baku, built a refinery and the first Russian pipeline linking the oilfield to a plant and the port of Baku, the first tank-wagons in Russia, and also the warehouse for oil products in Tsaritsyn. By 1899 the Company produced 17,7% of the Russian oil production and 8,6% of the world's oil production; it was still the main supplier of kerosene on the domestic market (up to 70% of total Russian consumption). Their lubrication oil production plant was the largest in the world. Branobel used a number of technical and organisational innovations for the first time in Russia (in some cases in the world too). Our paper contains

a number of examples. The Company created an extremely extensive network of depots throughout Russia; by 1909 it had 422 oil stores. Branobel shipping line operated the world's first river and lake motor vessel powered by an internal combustion engine. A plant of Ludwig Nobel's firm in St Petersburg manufactured steam machines, oil equipment, and internal combustion engines. The Company operated successfully on the international oil market developing special infrastructure for these activities. In 1883 Branobel founded the Deutsche-Russische Naphta Import Gessellschaft subsidiary in Berlin and in 1895 a similar international institution was founded in Vienna. Branobel's business activities had a substantial impact on the economic development of the Baku area including the modernization of business infrastructure, the quality of the working force in the oil industry. A number of European engineers and skilled workers shared their experience among native workers hired by Branobel. The Company set up professional schools, medical services; housing for workers was also a constant concern for the firm. Branobel's activities in Russia were not just a "one-way street". For instance, Alfred Bernhard Nobel (the founder of the Nobel Prize) being in Russia got acquainted with publications by N. Zinin and V. Petrushevsky, Russian scientists in the field of chemistry. As a result he invented dynamite and patented it in England.

JEL Classification: D02, H54, L53, N73, N93, O11, O12, O13, O14, O32, O33

Key words: Industrial revolution, Russia, public policy of development, infrastructure, technological transfers, Human Capital, formation

Mots clés: Révolution industrielle, Russie, Politique publique de développement, infrastructure, transferts technologiques, capital humain, formation

АННОТАЦИЯ

В статье рассматривается курс ценных бумаг Товарищества нефтяного производства братьев Нобель в начале XX века на Петербургской бирже. Компания братьев Нобель была крупнейшей нефтяной фирмой дореволюционной России и имела огромное значение для нефтяной отрасли. Методами регрессионного анализа, используя данные о динамике ценных бумаг, прибыли предприятия и динамике индекса промышленного производства, проводится исследование влияния экономических фундаментальных факторов и политических событий на биржевую конъюнктуру. Статистический анализ подтвердил, что роль фактора спекуляции в долгосрочном плане не доминировала, выявлена связь динамики курсов паев компании с экзогенными факторами (прежде всего — прибылью).

RÉSUMÉ

La compagnie pétrolière Branobel a été l'un des exemples les plus efficaces d'investissements scientifiques, technologiques, infrastructurelles et financières étrangers dans le développement de l'Empire russe à la fin du XIX^e – début du XX^e siècle. La Charte de la compagnie pétrolière Nobel frères a été créée en 1879. Avant la Première Guerre mondiale, la société est devenue la plus grande parmi toutes les entreprises industrielles exploitées en Russie (à l'échelle du capital social). Les fondateurs étaient des immigrants suédois : les trois frères Nobel – Ludwig, Robert et Alfred –, et leur ami, le baron Peter Bloc. En 1878, les frères Nobel se firent livrer le premier tanker de pétrole construit dans le monde, en Suède. Au moment de la création de l'entreprise, l'entreprise familiale des frères Nobel avait acquis des gisements terrestres à Bakou, construit une raffinerie, ainsi que le premier pipeline russe reliant le champs pétrolifère à une usine et le port de Bakou, les premiers wagons-citernes en Russie,

et l'entrepôt de produits pétroliers dans Tsaritsyn. En 1899, la société a produit 17,7% de la production pétrolière de Russie et 8,6% de la production mondiale ; il a toujours été le principal fournisseur de pétrole sur le marché intérieur (jusqu'à 70% de la consommation totale de Russie). Leur usine de production d'huile de lubrification était la plus grande au monde.

Branobel a utilisé un certain nombre d'innovations techniques et organisationnelles pour la première fois en Russie (dans certains cas également dans le monde). Notre communication contient un certain nombre de ces exemples. La société a créé un réseau très étendu de dépôts à travers la Russie. En 1909, il y avait 422 magasins de pétrole. La ligne maritime de Branobel mit en œuvre le premier navire à moteur fluvial au monde, propulsé par moteur à combustion interne. Une usine de la firme Ludwig Nobel implantée à Saint-Petersbourg construisit des machines à vapeur, des équipements de pétrole et des moteurs à combustion interne. La Société opéra avec succès sur le marché international du pétrole et développa une infrastructure spécifique pour ces activités. En 1883, Branobel fonda une filiale à Berlin, sus le nom de Deutsche-Russische Naphta importation Gesellschaft et, en 1895, un organisme international similaire à Vienne.

Les activités commerciales de Branobel ont un impact important sur le développement économique de la zone Bakou, comprenant la modernisation de l'infrastructure de l'entreprise, la qualité de la force de travail dans l'industrie pétrolière. Un certain nombre d'ingénieurs européens et de travailleurs qualifiés ont partagé leur expérience parmi les travailleurs autochtones embauchés par Branobel. Cette société a établi des écoles professionnelles ainsi que des services médicaux ; la construction de logements pour les travailleurs a également été un impératif permanent.

Les activités de Branobel en Russie ne sont pas seulement une "voie à sens unique". Par exemple, Alfred Bernhard Nobel (le fondateur du Prix Nobel) lors de son séjour en Russie, a pris connaissance des publications dans le domaine de la chimie des scientifiques russes N. Zinin et V. Petrushevsky. En conséquence de cela, il a inventé la dynamite qu'il a brevetée en Angleterre.

Since the end of the nineteenth century the St.-Petersburg Stock Exchange had experienced certain anomalies (or market inefficiency) in the capital markets. Among them we should mention the stock market crash in 1899 when prices on the St.-Petersburg Stock Exchange dropped down within three days in September. This sharp fall began on 23rd September 1899 during the "black day" of the St.-Petersburg Stock Exchange when, as the outstanding Russian

economist of that time, M. Tugan-Baranovsky said that the general collapse in exchange valuations took place and became a real unexpected catastrophe for our exchange commercial and industrial spheres². Taking into account the classification of stock market anomalies we should mention that on St.-Petersburg Stock Exchange in 1900s contemporaries witnessed what we call the “January Effect” (a seasonal increase in stock prices in January) and even the “S&P Index effect” (if we can compare the announcement of a stock’s inclusion into the S&P 500 index with the effect of inclusion of Russian pre-Revolution stocks into the list of Paris Stock Exchange quotation).

The St.-Petersburg Exchange was established almost at the same time as the city of St.-Petersburg (1703). As was the case on other European bourses, the brokers of the St.-Petersburg Exchange in the early years were dealing exclusively with commodities. Trading securities, including the shares of a small number of Russian corporations, started at the St.-Petersburg Exchange (*Birzha*) in the early 1830s. The trading of corporate securities was not very active in St.-Petersburg until after the Great reforms of 1860s, when the rush of incorporations for the first time attracted the public’s attention to the Exchange. Stock and bond prices were included in the official statistical compilation and were published in newspapers, which became the main data source for this study. The St.-Petersburg Exchange began playing a more significant role in Russia’s economy starting in late 1890s. This development became apparent in the changing structure of the Exchange. In 1900, the Tsar signed a law, which finally divided the trading of securities and commodities into separate sections on the St.-Petersburg Exchange, the dominant market for corporate securities in the country. The joint stock companies became the dominant form of business enterprise, allowing for large, capital-intensive undertakings. Despite the limitations of Russian corporate law with its concessionary system of incorporation, this period witnessed considerable growth in the establishment of new joint stock companies: from 1893 to 1901 1,460 new companies were established in Russia and among them 1,014 actually started operations. This number is especially impressive in comparison with prior periods: from 1874 to 1881 there were 256 new incorporations, and from 1882 to 1892 were 356. Even in the nine years of stagnation following 1901 (1902-1910) 1,081 new corporations were registered.³

Besides the economic growth experienced by Russia in the last decade of the nineteenth century, additional forces contributed to the establishment of new corporations. The conversion of government debt in 1890-1894 to a lower interest rate created incentives for investors to pull funds out of fixed income securities and look for higher returns elsewhere, including in the newly formed enterprises. The adoption of the gold standard in 1895-1897

2 – M.I. Tugan-Baranovskiy, *Sostoyaniye nashoy promyshlennosti za desyatletkiye 1900-1909 i vidyna budushcheye* [The state of our industry during the decade of 1900-1909 and prospects for the future] in *Periodicheskiye promyshlennyye krizisy* [Periodic industrial crises], M., 1997, p. 488.

3 – L. E. Shepelev, *Aksionernyye kompanii v Rossii* [Joint Stock Companies in Russia], Leningrad, 1973, p. 139.

attracted significant inflow of funds from foreign investors. Additionally, Russian banks significantly increased on-call funds to stock market speculators and this added to the liquidity that was so important for the flotation of new shares. The combined effect of these and other influences resulted in significant price appreciation on the St.-Petersburg Stock Exchange where from 1885 on there were voices raising concern about “unreasonable speculation” and stock market “bacchanalia”. Although wide price swings in share prices were nothing new to investors in England and France, it was the first time that Russia experienced a price boom on such a scale, and this attracted the interest of the government and the general public.

At the beginning of the Twentieth century the stock market in Russia was still under the influence of the crash of the 1899. A stormy decade was ahead. This decade included the years of economic crisis, stagnation, Russo-Japanese war, First Russian revolution and subsequent economic take off before World War I.

OIL SECURITIES ON THE ST.-PETERSBURG STOCK EXCHANGE

By early 1914, the official journal of the St.-Petersburg stock exchange contained about 700 securities. However, among the dividend values only a few dozen were world-class securities with which deals were continually made and their prices were recorded daily in the official Exchange Bulletin.⁴ Shares of several oil companies were among these leading values.

Of all the oil group's shares quoted on the St.-Petersburg exchange in the early twentieth century the securities of the *Nobel brothers' company*, the *Baku oil company*⁵, *Mantashev company*⁶ and *Caspian Partnership*⁷ were significant. The last two companies later entered the *Russian General Oil Corporation*⁸.

4 – Ofitsialnaya vekselnaya i fondovaya kotirovka na Sankt-Peterburgskoy birzhe [Official Bill and Stock quotation on the St.-Petersburg Stock Exchange] published by the Committee of the St.-Petersburg Stock Exchange and printed in most Russian newspapers in the early twentieth century.

5 – The Baku Oil Company was founded in 1874 with a fixed capital of 2.5 million rubles; in 1915, the fixed capital resulted in 7.78 million rubles. The company's shares were quoted on the St.-Petersburg and Paris stock exchanges. The company ceased operations with the nationalization of its assets in 1918.

6 – Oil and Industrial Company “A.I. Mantashev and Co.,” one of the largest joint-stock oil companies in Russian Empire, emerged in 1899 as a result of the transformation of the trading house of the oil industrialist A.I. Mantashev. The fixed capital in 1899 was 22 million rubles, in 1917 – 28 million rubles. Nationalized in 1920.

7 – The oil production and trading company *Caspian Partnership* was one of the largest oil companies in the Russian Empire. Its charter was approved on 8 September 1886. Fixed capital at establishment was 2.5 million rubles; in 1914 it was 10 million rubles. The company collaborated with the major oil producers, the Nobels and Rothschilds, at the same time seeking to gain its own sales markets, and had a representative in Great Britain (A.O. Gukasov); it often acted together with the firm of *A.I. Mantashev and Co.* It ceased operations with the adoption of the decree on the nationalization of the oil industry in 1918.

8 – The Russian General Oil Corporation was the largest trust-type association of trust in the Russian oil industry. It was established in 1912 by a group of banks and oil companies to sell oil in Russia and abroad. From 1913, the trust made attempts to buy up a controlling packet of shares of the *Branobel*. The strong competition of these monopolies ended in early 1917 with the exchange of share packets and the establishment of common interests.

According to reports and the balance sheets of companies published in the Yearbook of the Ministry of Finance⁹ in 1898, there were 67 major industrial companies in Russia whose assets exceeded 10 million rubles,¹⁰ the oil production company of the Nobel brothers being top of the list with total assets in 1898 of 63 million rubles.

More than half of Russian oil before World War I was concentrated in the hands of three concerns (see Table 1) and they covered $\frac{3}{4}$ of all trade in oil and oil products¹¹.

TABLE 1 CAPITALIZATION AND OIL PRODUCTION VOLUME OF THE OIL CONCERNS, 1912

	Capitalization (rubles, mil.)	Production (poods, mil.)
Russian General Oil	123	124
Shell¹²	51.5	92
Nobel	39.3	80
All other enterprises	—	264
Total	213.8*	560

Source: I.F. Gindin, *Banki i ekonomicheskaya politika v Rossii (XIX — nachalo XX vv.)* [Banking and Economic Policy in Russia (19th to Early 20th Century)], Moscow, 1997, p. 177.

* For the three mentioned concerns.

Before turning to a factor analysis of the dynamics in the exchange rate of the Nobel brothers' company, we will briefly describe the history of this large industrial company.

HISTORY OF NOBEL BROTHERS PETROLEUM COMPANY

The Charter of the *Nobel Brothers Petroleum Company*¹³ (following the tradition we will use the short form *Branobel*) was established in 1879. The company was

9 – *Yezhegodnik Ministerstva Finansov* [Yearbook of the Ministry of Finance] is a periodic annual publication of the Ministry of Finance of Russia. Published since 1869 to 1917 in St.-Petersburg.

10 – *Yezhegodnik Ministerstva Finansov* [Yearbook of the Ministry of Finance]. Data for 1898: iss. 1900, St.-Petersburg, 1901, p. 588–649.

11 – I.F. Gindin, *Banki i ekonomicheskaya politika v Rossii (XIX – nachalo XX vv.)* [Banking and Economic Policy in Russia (19th to Early 20th Century)], Moscow, 1997, p. 177.

12 – The founder of the Shell Transport and Trading Company, which was later restructured including a Holland-based company commonly referred to as Royal Dutch Shell, Marcus Samuel started business in Russia in the end of the nineteenth century. In 1907, there was a merger of Shell and Royal Dutch, which gave the start for corporation known as Royal Dutch Shell. The last important step in the development of Shell's Russian business is the purchase of the Rothschilds' oil business in Russia in 1911. In 1917 the Shell Group in Russia included 13 enterprises located in Baku, Grozny and the Urals region. As a result of nationalization, Shell lost it all.

13 – For information about the company, see: *Russkiye birzhevyye tsennosti. 1914–15* [Russian Stock Market Values, 1914–15], Petrograd, 1915, p. 285–286; *Aksionerno-payevyye predpriyatiya Rossii. Torgovo-promyshlennyye, fabrichno-zavodskiy i torgovyye predpriyatiya. Aksionernyye banki* [Russian Joint-Stock Companies. Commercial-industrial, manufacturing and trading companies. Joint-stock banks], Moscow, 1917, p. 301;

created for 'the storage and distribution of the products of a distillation plant located in Baku, and also the development and procurement of oil in other parts of the empire'.¹⁴

The founders were immigrants from Sweden – the three Nobel brothers: Ludwig, Robert and Alfred, and their friend, Baron Peter Aleksandrovich Bilderling, a colonel in the guard artillery (later, a general). Back in 1874 they had leased Baku oil fields, and in 1875 they bought a small kerosene plant in Baku and radically modernised it. In 1878, the Nobels received the world's first oil tanker from Sweden, the *Zoroaster*, a steel vessel with eight oil filling tanks with a capacity of 240 tons.¹⁵ At the time of the company's establishment, the Nobel's family-owned enterprise had land oilfields in Baku (about 9 hectares), 8 drill wells, a refinery, the first Russian pipeline from fields to a plant and the port of Baku, the first tank-wagons in Russia, and also oil-product warehouses in Tsaritsyn.¹⁶

The company's fixed capital at establishment was 3 million rubles. The share capital was increased to 4 million rubles in 1880, to 6 million in 1881, to 10 million in 1882, to 15 million rubles in 1884, to 30 million rubles in 1912, and in 1916 the fixed capital amounted to 45 million rubles. A dividend was paid every year, except in 1884 and 1885. In 1880 the dividend amounted to 20% of the nominal share value; the minimum dividend value was 5% in 1891 and 1893, and the maximum was 30% in 1915 and 1916. From 1895 onwards the dividend never dropped below 10%. In 1881, for the first time bonds were issued for 2 million rubles. The maximum value of the bond capital was reached in 1905: 22.910 million rubles; by 1916 it amounted to 10.668 million rubles. Already in the 1880s *Branobel* shares and bonds were quoted on the Berlin exchange. Later, company shares were introduced for quotation in the Amsterdam and Frankfurt exchanges.¹⁷

Ludwig Nobel headed the Board of Directors till his death in 1888, then the post of chairman was taken by his son Emmanuel who was the head of the company until the revolution in 1917.

Prior to the beginning of the twentieth century, *Branobel* oil production grew rapidly: 321 thousand poods¹⁸ of oil were produced in 1879, and 15,474 thousand poods in 1883, which covered 25.9% of Russian production. The company's maximum oil production over all these years was achieved in 1899: 171 wells yielded 93,260 thousand poods, accounting for 17.7% of Russian and 8.6% of the world's oil production. The company was always the main supplier of kerosene

Ekonomicheskaya istoriya Rossii (s drevneyshikh vremen do 1917 g. Encyclopaedia) [An Economic History of Russia (since ancient times to 1917): Encyclopaedia, Moscow, 2008, 2 volumes, Vol. 2, p. 90-93.

14 – *Russkiye birzhevyye tsennosti* [Russian Stock Market Values], p. 285.

15 – *Ekonomicheskaya istoriya Rossii* [An Economic History of Russia], *Encyclopaedia*, p. 90.

16 – *Ibidem*, p. 91.

17 – *Russkiye birzhevyye tsennosti* [Russian Stock Market Values], p. 285.

18 – Pood is the old Russian measure of weight equal to 16 kg.

on the domestic market: in 1899, 50.1% of the total Russian consumption, and in 1905 an unsurpassed maximum of 69.7%.¹⁹ In the late 19th and early 20th centuries, the lubrication oil production plant owned by the company was the largest in the world. At the same time, much of the production was oriented to export (in 1896 the company had 62.5% of Russian exports of lubricating oils)²⁰.

Branobel for the first time in Russia (in some cases also in the world) used a number of technical and organizational innovations. In 1882, the continuous distillation of crude oil (instead of using batch-operated shell-still batteries) was introduced for the first time in the world, allowing the Nobels to produce in 1883 more kerosene than all the other companies in Baku combined; the installation obtained the name 'Nobel battery'. The 'Nobel injector', which appeared in the early 1880s, allowed the use of fuel oil as fuel for steam engines.²¹ The company created an extremely wide network of depots throughout Russia; by 1909 it had 422 oil stores. The company had its own fleet, which at the beginning of the 1890s consisted of 18 steamships and 70 barges. In 1903, *Branobel's* shipping line obtained the world's first river and lake motor vessel powered by an internal combustion engine: the 'Vandal'. In 1908, the world's first sea tanker, the 'Delo', was built. In 1910, the company had 238 vessels, including 53 steamships. By 1912 the transition of the company's sea and river fleet to internal combustion engines (diesel) was complete.²²

From the late 1890s the supply of oil products to Russia's domestic market was dominated by two companies: *Branobel* and the Rothschilds' *Mazut*; in 1901, their joint share in total export for the Caspian Sea was: for kerosene 43%, for oil residues (fuel oil) 43.5%, and for lubricants: 67.5%.²³ Starting in 1903, both companies signed a number of agreements (regarding kerosene, fuel oil, crude oil, and benzene) on prices, participation shares, joint purchase of petroleum products from small enterprises, procedure for transportation, etc. The company also successfully operated on the international market. In 1883 in Berlin it founded the *Deutsche-Russische Naphta Import Gesellschaft* subsidiary with a capital of 500 thousand marks (in subsequent years the capital was increased several times and reached 6.5 million marks in 1903). In 1895 in Vienna the *Österreichische Naphta Import Gesellschaft* subsidiary was established. *Branobel* had oil stores in Marseille, Antwerp, Hamburg, London, and other foreign cities.²⁴

19 – *Ekonomicheskaya istoriya Rossii* [An Economic History of Russia], *Encyclopaedia*, p. 91.

20 – *Ibidem*, p. 92.

21 – *Ibid.*, p. 91.

22 – *Ibid.*

23 – *Ibid.*, p. 92.

24 – Rossiyskiye tsennyye bumagi. Katalog sobraniya Muzeyno-ekspozitsionnogo forda Banka Rossii Russian securities. [Catalogue of the Collection of the Museum and Exhibition Fund of the Bank of Russia]. In 3 vols. Vol. 3: Aktsii i obligatsii torgovo-promyshlennykh, transportnykh i strakhovykh kompaniy [Shares and Bonds of the Commercial-Industrial, Transportation and Insurance Companies]. Moscow, 2010, p. 376.

In June 1906, under the auspices of *Deutsche Bank*, *The European Petroleum Union* was created: *Branobel's* stake was 25% (5 million German marks out of a total capital of 20 million German marks). Initially the Union was directed against Rockefeller's *Standard Oil Company*. However, in 1907 *Deutsche Bank* gave Rockefeller commitment not to undertake anything that would damage American interests. In September 1907, the *European Petroleum Union's* fixed capital was substantially increased to 37 million marks, but *Branobel's* stake in it fell to 20% (7.557 million marks).²⁵

To separate two types of *Branobel* shares we will use the term *unit*²⁶ for very expensive shares of the Company (nominal price of 5,000 rubles) and shares (nominal price of 250 rubles), which were quoted on the St.-Petersburg stock exchange, as well as bonds (5%).

The company was nationalised by the Soviet government in June 1918, and then for a second time in May 1920²⁷. However, in July 1920 *Branobel* shares were sold to Standard Oil. Certain company assets were preserved abroad; finally, the liquidation was declared in 1938.²⁸

Having briefly summarised the history of *Branobel*, we will turn to an analysis of the overall position of the oil sector at the beginning of the twentieth century and of the dynamics in the course rates for oil shares on the stock exchange, focusing attention on this company's securities.

THE IMPACT OF WAR AND REVOLUTION ON COURSE RATE DYNAMICS

At the beginning of the twentieth century St-Petersburg Stock Exchange was still unable to settle after the stock market crisis at the turn of the 1890s-1900s, which led to a nearly two-year period of falls in the rates for oil securities (see Fig.1 which illustrates course rate dynamics for *Branobel's* 5,000-ruble units). Data on the production volume of the oil industry in Russia show that in the first decade of the twentieth century the situation for oil companies as a whole was far from bright. L.B. Kafengauz wrote that in 1901, there was a rupture in the evolution of the oil industry: it entered 'a period of prolonged and deep crisis'.²⁹ The crisis clearly dragged on, and in the following years production suffered still harder. In 1904-1907 the level of production in the oil industry

25 – *Ekonomicheskaya istoriya Rossii* [An Economic History of Russia], *Encyclopaedia*, p. 92.

26 – Паи́ (in Russian).

27 – In July 1918 the Soviet regime in Baku was overthrown. In April 1920 parts of the Red Army took Baku, as a result of which the government of the Azerbaijan Democratic Republic that had existed almost two years fell and Soviet authority was established.

28 – *Rossiyskiye tsennyye bumagi. Katalog sobraniya...* [Russian securities. Catalogue of the Collection...], Vol. 3, p. 376.

29 – L.B. Kafengauz, *Evolutsiya promyshlennogo proizvodstva v Rossii (poslednyaya tret' XIX v. - 1930-e gody)* [The Evolution of Industrial Production in Russia (Last Third of the 19th century to the 1930s)], Moscow, 1994, p.71.

was significantly lower than in previous years and oil production dropped significantly: the fall in indices for 1905 especially stands out.³⁰

FIGURE 1 DYNAMICS OF *BRANOBEL* SHARE (UNIT) PRICES, 1900-1914.



Source: *Birzhevyye Vedomosti* [Stock exchange gazette], 2nd edition, St.-Petersburg, 1900-1914. Daily data. The data are given in Julian calendar.

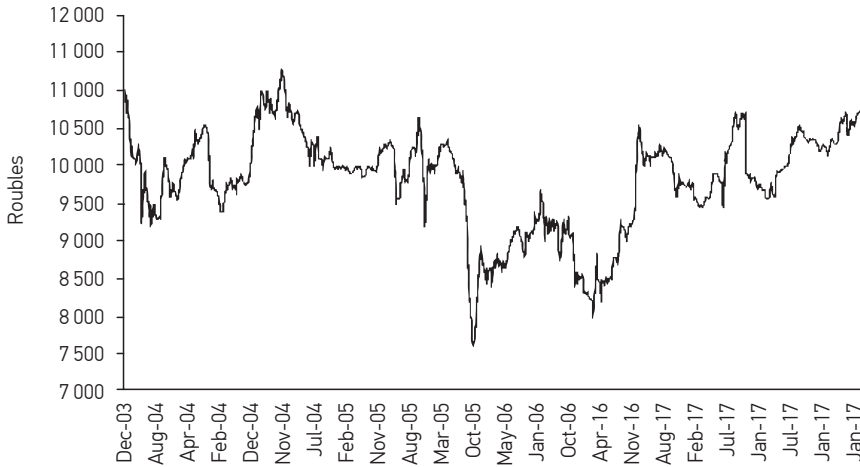
The St.-Petersburg Exchange in the early 1900s was dominated by stagnation. According to information from the Ministry of Finance, many securities permitted for issue remained in the portfolio. Stock prices began to rise only during 1903 (see Fig. 1). But in the autumn of that year ‘with the first alarming news about the situation in the Far East, some weakening in the rates was again observed’.³¹ At the end of 1903, the emerging exit from the crisis came to a halt with the Russo-Japanese war and the revolutionary events of 1905-1907, and the stock market began slowly to improve only from the end of 1907.

The dynamics of the major oil companies reflects their relatively calm development in the period from 1904 to mid-1905. For all major companies in the industry a gradual increase was observed in the price of shares after a sharp fall in January 1904, which, according to our estimates, was from 15% to 35% and clearly relates to the beginning of the Russo-Japanese war (Fig. 2 illustrates this process with the example of *Branobel* shares).

30 – I. A. Dyakonova, *Nefi i ugol v energetike tsarskoy Rossii v mezhdunarodnykh sopostavleniyakh* [Oil and coal in the power industry of tsarist Russia in international comparisons], Moscow, 1999, p. 166.

31 – L. E. Shepelev, *Aktsionernyye kompanii v Rossii: XIX - nachalo XX v.* [Joint-Stock Companies in Russia: XIXth - early XXth century], St.-Petersburg, 2006, p. 236.

FIGURE 2 DYNAMICS OF *BRANOBEL* SHARE (UNIT) PRICES, 1904-1907.



Source: Birzhevyye Vedomosti [Stock exchange gazette], 2nd edition, St.-Petersburg, 1904-1907. Daily data. The data are given in Julian calendar.

Thus, the lowest rates were recorded on the St.-Petersburg stock exchange on January 27, 1904: on the day the war was declared. *Caspian* shares on that day dropped to 4,200 rubles, *Mantashev company* shares went for 160 rubles, and *Branobel* shares (par value of 5,000 rubles) to 9,250 rubles. For comparison: on 1 January 1904 the value of *Caspian* shares stood at 5,600, *Mantashev* at 241 rubles, and *Branobel* shares at 11,050 rubles. Obviously, this fall was linked to the events in the Far East. A report in the exchange chronicle in January 1904 fully confirms the dependence of rates fluctuations on news received about the start of hostilities. The stock price for the most powerful company – *Branobel* – dropped the least. Further movements in rates fluctuated around the average price established after January 1904. In this case, the damage to the stock market is obvious; it was caused by the War and resulted in a notable fall in the value of securities. On the other hand, to call the damage ‘colossal’, following the example of contemporary analysts,³² would be somewhat exaggerated.

Firstly, in general the fairly rapid recovery of past positions of the majority of shares in the first months of the War should be noted. A relative stock exchange rise began in March 1905. The disappointing news from War, it can be said, was forgotten in the course of a stock exchange session. Similarly, the market met the news and from the positions on the Yalu River³³: “Despite today’s

32 – V.A. Mukoseev, *Kredit, birzha i denezhnoye obrashcheniye* [Credit, the Stock Exchange and Monetary Circulation], in *Obshchestvennoye dvizheniye v Rossii v nachale XX v.* [The Social movement in Russia in the early 20th Century], Vol. IV, St.-Petersburg, 1910, p. 203.

33 – The Battle at the Yalu River – a conflict on the border near the town of Tsulianchen between Russian and Japanese forces that took place on 18 April, 1904. It was the first major battle of the Russo-Japanese war.

official telegrams with details about the battle on the Yalu River, the mood for dividend securities, contrary to expectations, was not weak. At the beginning of the exchange prices fell back somewhat, although this phenomenon was not accompanied by a sharp offering; on the contrary, later during the exchange, there was noted rather a tendency towards demand, due to which the final quotations were slightly higher. In general, the exchange is showing amazing composure towards the political events being played out and is not put off by the unfavourable occurrences”,³⁴ If adverse news remained “invisible”, “positive” reports still further strengthened the mood of the Exchange. On 28 April, a telegram about restoring communication with Port Arthur gave a “lively nature both for funds, and also for dividend securities to the Exchange’s Assembly”.³⁵

And yet, the retreat on the Yalu River lowered the rates of dividend securities, as is seen in the example of shares in the oil sector. Then, during the first months after the beginning of the war, some stability took place till April. Further, starting from May, stock quotes gradually improved, and there was a noticeable reduction in prices already in December 1905, that is, with the surrender of Port Arthur. Prices fell during January 1906. However, this fall was in the range of 5 to 15% (and again the lowest fluctuations were for *Branobel* shares, and the largest for Mantashev shares).

By the conclusion of the Treaty of Portsmouth the price for oil shares approached the pre-war level, and on the day peace was signed *Caspian* shares were worth 5,400 rubles, the Mantashev ones 230 rubles, and *Branobel* shares were 10,350 rubles (see Fig. 2). There is no doubt that the peace agreement contributed to the improvement in the stock exchange’s environment and the increase in course rates, of which the financial analyst of the ‘Exchange Gazette’ directly indicated. As the *Finance Journal* later noted, the conclusion of the Treaty of Portsmouth, and, moreover, on terms that were difficult to count on, sparked hopes for a better future.³⁶

We should note that when recreating the historic picture of events which were the backdrop to the daily stock-market sessions, and clarifying the role that was really played by received news during the Russo-Japanese war in setting the rate for Nobel shares, we discovered a lower than expected dependence of stock-exchange dynamics on foreign policy news³⁷.

34 – *Birzhevyye Vedomosti* [Stock Exchange Gazette], St.-Petersburg, 2nd edition, 1904, No. 109, 22 April.

35 – *Birzhevyye Vedomosti* [Stock Exchange Gazette], 1904, No. 116, 29 April.

36 – *Vestnik finansov, promyshlennosti i trgovli* [Journal of Finance, Industry and Trade], St.-Petersburg, 1906, No. 8.

37 – For more details see: L.I. Borodkin, A.V. Dmitrieva, *O roli ekzogennykh faktorov v kursovoy dinamike tsennykh bumag Tovarishchestva neftyanogo proizvodstva brat'yev Nobel v kontse XIX – nachale XX v.* [On the role of exogenous factors in the exchange rate dynamics of securities of the Nobel Brothers' Oil Production Company at the end of the 19th and beginning of the 20th centuries], *Istoricheskiy zhurnal: nauchnyye issledovaniya* [Historical Journal: Scientific Research], 2013, No. 5, p. 602-616.

'Hopes for a better future' were not quickly justified, as it is known, reports from the theatre of war gave way to reports of strikes and actions of armed workers in 1905. Due special attention in the context of this work is the situation in the Baku area, where important oilfields were concentrated. In August 1905 there was destruction and fire in the fields, which destroyed more than half of wells total production (57%)³⁸. As a consequence of these events the oil firms suffered considerable losses. The reduction in profits across all oil-industry businesses was approximately 33%.³⁹

Disturbances of 1905 reduced oil production in Baku to an extreme low. Oil production in September 1905 was just 2 million poods, against 32.3 million poods in the first 20 days of August.⁴⁰ If in 1904 total oil production amounted to 10.89 million tons, it fell to 7.55 million tons in 1905.⁴¹ The events of 1905-1906 had great significance for the rate dynamics and revenue of *Branobel* Company. If the year 1905 (mainly, its second half) was also extremely hard for Russian trade and industry, for the Baku province it should be considered to be exceptionally unfavourable. Repeated strikes by workers in Baku and the surrounding industrial area, and the no less frequent strikes of railway employees, very negatively affected the situation in the oil fields. Finally, the ethnic clashes during the whole year, which escalated in February, August and October 1905, and which took the form of massive clashes in the streets, accompanied by house fires in the city, oil-rig fires in the fields, and routs and looting of shops and workshops, should be taken into account.⁴²

How did these dramatic events influence *Branobel's* financial situation? Surprisingly, the Baku disaster was not very seriously reflected in the oil companies' share quotations: having fell, already in September the rates had significantly recovered. The largest synchronous change in the price dynamics for oil securities can be observed from October to mid-December 1905, when the shares of every company fell, according to our calculations, by 20-45% (see Fig. 2 which illustrates this process). Moreover, if the most severe decline in value was again shown by *Mantashev's company*, then the normally stable *Branobel* shares were second in decline in value. It is quite obvious that this decrease was related to the greatest sweep of workers' actions. Further consideration of the stock price dynamics for Russian oil companies shows that after the most difficult period of the revolution was over, the exchange rate dynamics of every company had developed along a trajectory of their own and common trends were not evident. Thus, for example, *Branobel* shares rose

38 – S.S. Khizhnyakov, V.G. Osinov, *K voprosu o prichinakh i kharaktere tragicheskikh sobytiy v avguste 1905 g. na nefiyanykh promyslakh Apsheronского poluostrova* [To the question of the causes and nature of the tragic events in August 1905 in the oil fields of the Absheron Peninsula] in *Predvestiye ery nefri* [The forefeel of the Oil Era], M., 2003. C. 282.

39 – *Ibidem*.

40 – RSHA (Russian State Historical Archive), F. 23, op. 7, D. 41. (Reports of stock exchange committees about strikes and pogroms. 1905-1906), L. 121-121ob.

41 – L.B. Kafengauz, *op. cit.*, p. 71.

42 – RSHA. F. 23, op. 7, D. 41. L. 121.

in price (Fig. 2), while Mantashev's, according to our calculations, remained almost at the level reached in the last months of 1905, and shares in the Caspian Partnership to a significant degree straighten their positions, after which they remained at the same level.

We will take a look at the data of annual accounts reflecting the dynamics of the company's financial performance (Table 2).

TABLE 2 **BRANOBEL'S FINANCIAL PERFORMANCE STATISTICS, 1900-1913.**
REPORTING PERIOD 1 JANUARY-31 DECEMBER.

Reporting Year	Fixed capital	Income	Expenditure	Gross Profit	Dividend	
					In rubles	In %
1900	15,000,000 ⁽¹⁾	96,171,040.27	87,703,814.86	8,467,225.41	3,000,000	20
1901	15,000,000	87,897,855.18	82,355,134.40	5,542,720.78	2,250,000	15
1902	15,000,000	87,546,218.91	83,607,284.78	3,938,934.13	1,500,000	10
1903	15,000,000	88,223,174.03	83,653,811.47	4,569,362.56	1,800,000	12
1904	15,000,000	106,909,202.18	102,820,674.85	4,088,527.33	1,500,000	10
1905	15,000,000	97,983,009.72	93,079,262.74	4,903,746.98	1,800,000	12
1906	15,000,000	112,495,306.43	105,111,407.04	7,383,899.39	1,200,000	8
1907	15,000,000	128,034,697.51	120,008,967.55	8,025,729.96	3,000,000	20
1908	15,000,000	130,684,426.00	124,062,391.98	6,622,034.02	2,250,000	15
1909	15,000,000	132,631,706.35	127,238,018.38	5,393,687.97	1,800,000	12
1910	15,000,000	117,478,693.02	111,420,759.16	6,057,933.86	1,800,000	12
1911	15,000,000	133,262,402.94	127,830,026.86	5,432,376.08	2,100,000	14
1912	30,000,000 ⁽²⁾	152,987,631.78	139,615,016.12	13,372,615.66	6,600,000	22
1913	30,000,000	169,749,041.03	151,513,291.12	18,235,749.91	7,800,000	26

(1) The company's fixed capital amounted to 20,000 shares with a par value of 250 rubles and 2,000 units with a nominal value of 5,000 rubles.

(2) The company's fixed capital amounted to 80,000 shares with a par value of 250 rubles and 2,000 units with a nominal value of 5,000 rubles.

Source: Vestnik finansov, promyshlennosti i trgovli. Otchety torgovykh i promyshlennykh predpriyatii, obyazannykh publichnoy otchetnostyu. [Journal of Finance, Industry and Trade. Reports of commercial and industrial enterprises subject to public accounting], 1901-1914.

As can be seen from Table 2, the Nobels' company's gross profit grew steadily during the difficult period of 1904-1907, although in 1905 income was less than in the previous year. The data in Table 2, which at first glance are paradoxical, require economic interpretation.

It is known that where there is a fall in output, a price increase permits the recovery of the reduction in profits to a certain extent. Yet despite the position at which the depletion of stocks and the increasing demand would cause a significant rise in oil prices (especially for its processed products), in November and December of 1905 a decrease was observed in the prices for

all oil products, explained, apparently, by the common mood of alarm and uncertainty about personal and property safety.⁴³ Therefore, annual average oil prices in 1905 were only slightly higher than in 1904. Assessing the damage as a result of the events of August 1905, researchers speak of an unrecoverable level of damage done to Russian oil industry. Together with the substantial drop in oil production, Russia lost its leadership in the European and Eastern kerosene markets. The low level of oil production after 1905 was one of the major factors in the country's long-term fuel shortage and the corresponding rise in prices. Oil fuel prices continued to rise until 1907, and reached a maximum of 27.7 kopecks per pood in Baku. At the end of the volatile period 1904-1907, Baku oil production remained at a low level, despite the very favourable market situation.⁴⁴ The high prices remaining for fuel oil led in 1909-1910 to the mass transition of consumers to wood and coal and the reduction of oil prices, as a consequence of which prices again began to fall.

THE IMPACT OF ECONOMIC FACTORS ON EXCHANGE RATE DYNAMICS DURING THE INDUSTRIAL BOOM YEARS

Stock market performance traditionally plays the role of indicator of the economic situation; it is therefore impossible to understand its evolution in isolation from economic development cycles. Were the exchange rates of Nobel securities at the beginning of the twentieth century subject to the determining impact of fundamental economic factors? Or was the leading role in exchange rate dynamics played by endogenous factors (primarily, stock exchange speculation)? These issues will be discussed in this section. But first, we will turn to the stock exchange processes in the five-year pre-war period.

During the economic boom of 1909-1913 an increased interest was shown in the oil industry. The inflow of foreign capital, interrupted during the depression, resumed to a greater degree. Banks started actively financing oil enterprises, and, of course, Nobels' company could not remain outside this process.

In 1909, the Company had about 135 hectares of oil-bearing land. Oil production was 66.8 million poods in 1911 (11.96% of Russian production), 68.4 million in 1913 (12.12%), and 65.9 million in 1915 (11.53%).⁴⁵ In 1909 the average salary of *Branobel* employees exceeded by 11% the level of other Baku oil companies.⁴⁶

In 1911, the company obtained permission to increase its share capital to 30 million rubles. With a share par value of 250 rubles their issue price (at which the

43 – RSHA. F. 23, op. 7. D. 41. L. 121.

44 – L. B. Kafengauz, *op. cit.*, p. 125.

45 – *Ekonomicheskaya istoriya Rossii* [An Economic History of Russia], *Encyclopaedia*, p. 92.

46 – *Rossiyskiye tsennyye bumagi. Katalog sobraniya...* [Russian securities. Catalogue of the Collection...], Vol. 3, p. 376.

owners of old shares could acquire new ones) was set at 450 rubles 70 kopecks; units at a par value of 5 thousand rubles were offered at 8.8 thousand rubles. With the increase in capital and the new share issue, syndicates were created for the purchase and subsequent sale of shares. In April-July 1911 such a syndicate was led by the Russo-Asiatic Bank,⁴⁷ and in the second half of 1912 by the Azov-Don commercial bank.⁴⁸ In 1912 there was a syndicate led by a German accounting company (Disconto-Gesellschaft) to sell newly issued shares abroad. By 1916, the Nobel family together held about 15% of the units and shares, but individually each member had a much smaller percentage than the percentage of each of the largest banks – the Petrograd International Commercial Bank (units and shares to 2,940,000 rubles), the Russo-Asian, Moscow, Azov-Don Commercial, Petrograd Trading, and Volgo-Kamsk Commercial banks. In 1916 *Branobel's* share capital was increased to 45 million rubles.⁴⁹

Since 1911 the demand for all types of fuel began to rise, which also caused an evident rise in oil prices, but did not lead to an increase in oil production. The Baku oil production level reached in 1909 (8.39 million tons) was already unachievable in the following years, which is not only explained by the decline in well productivity⁵⁰. A large role was also played here by backward legislation concerning the procedure for oil-land tenders, and the consequences of monopolisation of the oil industry: oil companies often held back production growth, drawing enormous revenue with slow production growth and a rapid growth in prices for oil products.⁵¹ The rise in oil prices came amid 'extremely favourable' market conditions for the oil companies.⁵² In the environment of the pre-war industrial boom, as noted in the annual report of the Board of the Azov-Don commercial bank to the General Meeting of Shareholders in 1913, the 'supply always lags behind demand. There is not enough coal and oil at the increased prices for coal and extremely high prices for oil'.⁵³ The rapid growth in oil demand began, as noted above, in 1911, which led to a rise in oil

47 – The Russo-Asiatic Bank was the largest joint-stock commercial bank in the Russian Empire. Established in 1910 with an original share capital of 35 million rubles. By 1914 the bank's share capital had increased to 45 million rubles. The main focus of its activity was the financing of large sectors of industry.

48 – The Azov-Don commercial bank was founded in 1871 with a fixed capital of 3 million rubles. In the period of the industrial boom in 1908-1913 it dramatically increased its fixed capital (as of 1.1.1908 it was 15 million rubles, and as of 1.1.1914 – 50 million rubles). By 1914 it was one of the leading universal banks of Russia and 5th in terms of assets (531 million rubles). On the eve of the First World War, the bank patronised powerful industrial groups in leading industries, without participating in the Russian General Oil Corporation it formed its own group of oil companies and was close to *Branobel*.

49 – *Ekonomicheskaya istoriya Rossii* [An Economic History of Russia], *Encyclopaedia*, p. 93.

50 – L.B. Kafengauz, *op. cit.*, p.124-125.

51 – *Ibidem*.

52 – *Ibid.*, p.124.

53 – See: *Publikatsiya istochnikov. Rossiya i mir: ekonomicheskaya konyunktura 1911-1914 gg. (Iz dokladov pravleniya Azovo-Don'skogo banka sobraniyu aktsionerov)* [Publication of sources. Russia and the World: the Economic Situation 1911-1914. (From Reports of the Board of the Azov-Don Bank Meeting of Shareholders)] in *Ekonomicheskaya istoriya. Obzreniye* [Economic History Review], Issue 11, 2005, p. 47.

prices: this price rose in Baku from 15 kopecks per pood to 21.7 kopecks in 1911, to 34.8 kopecks in 1912, and to 42.3 kopecks in 1913.⁵⁴

As for the dynamics of Nobel share prices, after the volatile period 1904-1907 a year of rising prices began, so that in May 1908 the price level had almost reached a five-year high (see Fig. 1). The half-year period of stagnation that followed gave way to a tendency towards an increase in prices for Nobel shares, at first slowly and sporadically, and then from the spring of 1912 it was fast and more steady for two years (see Fig. 3).

FIGURE 3 DYNAMICS OF BRANOBEL SHARE (UNIT) PRICE, 1909-1914



Source: Birzhevyye Vedomosti [Stock exchange gazette], 2nd edition, St.-Petersburg, 1909-1914. Daily data.

The data are given in Julian calendar.

We shall now address the question of the role of economic factors in the exchange rate dynamics of *Branobel* shares outlined above. Our basic hypothesis is that exchange market dynamics for *Branobel* securities were mainly defined by performance indicators of the enterprises concerned.

Using data on share price dynamics, the companies' profit, and industrial production dynamics⁵⁵, we made regression models with a different explanatory power.

The most relevant is the regression model in which the average annual cost of *Branobel* shares was used as the dependent variable, and annual profit as the independent variable. These data for the period 1897-1913 are presented in Table 3.

54 – L.B. Kafengauz, *op. cit.*, p.125.

55 – For more information on industrial production dynamics in Russia see: L.I. Borodkin, G. Perelman. *Struktura i dinamika birzhevogo indeksa dorevolutsionnoy Rossii: analiz rynka aktsiy vedushchikh promyshlennykh kompaniy* [Structure and dynamics of the stock market index of pre-revolutionary Russia: analysis of the securities of leading industrial companies] in *Ekonomicheskaya istoriya: Yezhegodnik 2006* [Economic History. Yearbook 2006]. M, 2006. C. 171-221.

TABLE 3 VALUES OF SHARES AND PROFIT OF *BRANOBEL* COMPANY, 1897-1913.

Year	Average Annual Unit Value (rub.)	Profit (rub. thou.)
1897	7971.87	2515.399
1898	8867.71	3327.695
1899	13186.04	6084.874
1900	12827.08	8467.225
1901	10037.92	5542.720
1902	9924.37	3938.934
1903	9896.87	4569.362
1904	10079.17	4088.527
1905	9693.89	4903.746
1906	9027.60	7383.899
1907	10079.69	8025.729
1908	10846.42	6622.034
1909	11089.58	5393.687
1910	11063.13	6057.933
1911	11544.86	5432.376
1912	13363.54	13372.615
1913	17805.42	18235.749

Source: the average cost of the units is calculated according to: the Yearbook of the Ministry of Finance. Issues for 1897-1913, St.-Petersburg, 1899-1914. Profit is calculated according to: Journal of Finance, Industry and Trade. Reports of commercial and industrial enterprises subject to public accounting, 1898-1914.

On the basis of the data in Table 3, we will construct the regression of the average unit price by profit (thousand rubles) for *Branobel*:

We shall eliminate trends in our time series using first-order differences. Presented below is a regression model, measuring the dependence of the first-order differences in the values of shares $\Delta Y(t)$ on the first-order differences of company profit $\Delta Xp(t)$. Additionally we use dummy variable $Xr(t)$, taking the value 1 for the years of the revolution and 0 for other years:

$$\Delta Y(t) = b + b_r * Xr(t) + b_p * \Delta Xp(t)$$

where $Y(t)$ is average annual share price, $Xp(t)$ is company profit and $Xr(t)$ is the dummy variable for revolutionary years (1905, 1906).

The following table contains the results of the regression analysis:

	Coefficient	t-statistics	P-value
b	326.8	0.899	0.389
b_p	0.40	3.355	0.0073
b_r	-1566.5	-1.706	0.118

Adjusted $R^2 = 0.47$

F-criterion = 6.423, $p < 0.01607$

As one can see, our hypothesis about the existence of a dependency between the share price and *Branobel* profits is confirmed. The adjusted determination coefficient, equal to 0.47, shows that nearly half the variance in the detrended share price dynamics is explained by the regressor (first-order difference of the company's profit). The coefficient is statistically significant ($t=3.35$; $Prob < 0.01$). The value of the F -statistic is equal to 6.423, indicating the good quality of the model itself ($p < 0.02$). The inclusion of the dummy variable X_r permitted the 'revolution factor' to be taken into account, which negatively affects the growth of the share prices.

Conclusion

The entrepreneurial activities of the Nobel brothers greatly contributed to the formation of the oil industry in pre-revolutionary Russia. An important role in the development of their oil company belonged to the stock market, through which it was possible to mobilize capital, to attract investments in modernization of their enterprises.

As the analysis presented shows, for *Branobel*, which was the largest joint-stock industrial enterprise based on its asset balance sheet in pre-revolutionary Russia, profit was the key factor determining the value of this company's securities. In the long-term aspect, the role of endogenous factors (especially speculation) in the company's exchange rate dynamics was not dominating. Over the extent of the fifteen-year period under investigation, Russia's industrial development underwent various phases in the business cycle, including two industrial booms and a prolonged period of stagnation and depression. Nobels' shares/units dynamics corresponded to these cycles, which indicates that these securities were mainly in the hands of "strong" owners, not market speculators. In the depression years (1900-1907), the unit price fell to almost 7 thousand rubles (with a par value of 5,000 rubles), but during the second industrial boom (the five years before the war) was able to rise to 22 thousand rubles. The on the whole successful stock dynamics of *Branobel* permitted large dividends to be paid to shareholders, often more than half the company's

annual profit. By using flexible tactics to vary volumes of oil production and the prices for oil and oil products, the company achieved substantial profits even during the difficult times for Baku oil fields during the first Russian Revolution, allowing it to expand production using new technologies for oil production and transportation. The basis for the corresponding investments was formed in the process of market trading of the company's securities in St.-Petersburg and on European stock markets.

Post-scriptum: after the revolution of 1917, numerous oil depots, bases, enterprises and small towns set up by Nobel brothers were wholly nationalized by the Bolshevik authorities. Subsequently, they became the basis for the oil-producing and oil-refining industry of Soviet Russia. After the revolution Emanuel Nobel, head of *Branobel*, moved to Sweden as well as most of the Nobel family.

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