

JSR (4185 JP) / JIC

TENDER OFFER

The deal spread appears to be explained by fears of a hostile Chinese view of the offer.

The Japan Investment Corporation (JIC), a government-backed fund, has agreed to buy semiconductor materials maker JSR Corp for about 909.3 billion yen (\$6.4 billion) in an effort to bolster Japan's chip industry.

Regulatory risk and timing

- The deal requires antitrust approvals in Japan, China, South Korea, Taiwan, possibly Vietnam Israel and Singapore and foreign investment approval in Belgium.
- JSR along with Tokyo Ohka and ShinEtsu Chemical Co. control the global supply of fluorinated polyimide and hydrogen fluoride.
- JSR is the world's largest maker of photoresist. It holds a significant 30% share of the global photoresist market. Photoresists are chemicals used in the printing of circuit designs on chip wafers, and Japan has a leading position in this technology. JSR serves customers such as Intel, Samsung, and Taiwan's TSMC.
- JSR says it plans to relist in five to seven years.
- We believe that the deal does not pose serious antitrust risk. The buyout is most probably influenced by a larger strategic initiative from the side of the Japanese government in an industry that has not yet been consolidated. We note that it will require multiple antitrust and foreign investment approvals but due to the non-hostile relations to Japan we do not believe that this would cause major issues regarding the deal close for the most cases.
- The key exception here is China, as JSR produces key components in the microchip supply chain, Chinese regulators might look at a deal from a government backed fund as a hostile step. However, as of today there is no incentive from the Japanese side to disrupt the supply chain.
- We expect a full review in China due to JSR's leading market position and the sensitive nature of the industry. We believe that a reasonable deal close would be timed in Q1 2024.
- If China believes that the deal is motivated by a hostile political intent, it has its way to extend the timeline of the deal to up to a year or more.
- JIC does not have control of any other player in the sector. It has cca 9% in Japanese semiconductor giant, Renesas.
- We don't see straightforward opposition from the Chinese regulator as:
 - The deal does not change the industry characteristics in photoresists
 - The move will not increase market concentration
 - Japan is already a leader in the space and China's reliance on Japanese players won't change
 - In case of a rejection, China might risk loss of supply of critical materials
 - Possible trade restrictions of relevant materials might or might not be introduced irrespective of JSR's ownership structure.
- The fact that JSR CEO said that the firm is planning to relist in 5-7 years might also ease Chinese opposition
- We note that China banned major chip maker and JSR customer Micron earlier this year from key infrastructure projects.
- JSR CEO said he wanted to balance being able to "respectfully" and "responsibly" service customers in China with "sensitivity to the concerns that the US government has and concerns with protecting interests in Japan".
- About 17.6% of JSR's revenues come from China. As per the latest results out of the JPY408.9 billion revenue about JPY 72 billion was from China.

Counter bid

- A It is understood that JSR was the one that approached JIC last November about a potential deal.
- We see that there would be incentive for other potential third parties to bid for the company. However, we believe that there are two main factors that make an entry of a counter bidder unlikely. First, if a foreign player would have an interest in acquiring JSR it would face strong opposition from Japan's foreign investment watchdogs as the sector has continuously been tagged as a key interest for the Japanese industry by government officials. Second, it is unlikely that any other player would start a bidding war with Japan's state-backed wealth fund.

Valuation

- The offer represents a premium of 34.51% on 3,234 yen, the closing price of the Target Company Shares on the Prime Market of the Tokyo Stock Exchange as of June 23, 202

Deal Terms

1 4185 JP = JPY 4350

Target: JSR Corporation

Country	Japan
Bloomberg	4185 JP
Sector	Advanced Materials
Share price (JPY)	4080
Market cap (JPYm)	852,147
Free float (%)	98

Acquirer: JIC

Country	Japan
Bloomberg	n.a.
Sector	Sovereign Wealth Fund
Share price (\$)	n.a.
Market cap (\$m)	n.a.
Free float (%)	n.a.

Price Chart



Status

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Key terms of the merger

Transaction Details

Announcement Date	June 26, 2023
Offer terms	1 4185 JP = JPY 4350
Deal Size (Market Value)	JPY 904 billion
Offer structure	Tender offer
Target's Board Recommendation	Yes, “, the Company resolved at the Board of Directors meeting held today, in reflection of the current opinion of the Company, to express an opinion supporting the Tender Offer and to recommend that (i) the shareholders of the Company Shares and the holders of the Company Share Options tender their Company Shares” Click here for the board's opinion
Voting Agreement	n.a.
Target Incorporation	Japan
Tender Offer announcement	Click here to read the announcement
Synergies	n.a.

Indicated Closing Date

Offer expected to commence in December 2023.

Dividends

n.a.

Valuation Multiples

■ LTM EV/Sales	2.5x
■ FY1 EV/Sales	2.3x
■ FY2 EV/Sales	2.1x
■ LTM P/E	57.6x
■ FY1 P/E	29.9x
■ FY2 P/E	11.5x
■ FY1 EV/EBITDA	13.8x
■ FY2 EV/EBITDA	11.5x

Timetable

■ Due diligence	March-May, 2023
■ First Proposal	June 1, 2023
■ Second Proposal	June 6, 2023
■ Third Proposal	June 9, 2023
■ Final Proposal	June 16, 2023
■ Deal Announcement	June 26, 2023
■ Settlement (CBR est.)	Q1 2024

Key conditions to the merger

■ Shareholder Acceptance	■ the minimum number of shares to be purchased in the Tender Offer (138,531,400 shares; ownership percentage: 66.67%)
■ Board approval	■
■ No injunctions	■
■ No legal prohibition	■
■ Regulatory Approvals	■ Antitrust: Japan, China, South Korea, Taiwan, possibly Vietnam, Israel, and Singapore ■ Foreign investment: Belgium
■ Reps and warranties	
■ No Company MAE	
■ No exemption event	
■ Deposits	■ it is expected to be reasonably certain that the balance in the deposit accounts of the Target Company and its subsidiaries as of the end of the expiration date of the Tender Offer Period (as defined in “(2) Schedule” in “2. Outline of the Tender Offer” below; hereinafter the same) is at least a total of 74 billion yen

Break fees

■ Break fee	■ n.a.
■ Reverse break fee	■ n.a.


Antitrust related clauses

■ Jurisdictions	■ Japan, China, South Korea, Taiwan, possibly Vietnam Israel and Singapore and foreign investment approval in Belgium.
■ Divestiture obligation	■ n.a.
■ Litigation obligation	■ n.a.
■ Reverse break fee (regulatory)	■ n.a.

Governing Law

Japan

Key shareholders

 JSR Corporation (XFRA:JYR)	%
State Street Corp	21,0
Government Pension Investment Fund	8,0
Sumitomo Mitsui Trust Holdings Inc	5,2
Mizuho Financial Group Inc	4,9
JPMorgan Chase & Co	4,8
Nomura Holdings Inc	4,8
Capital Group Cos Inc/The	4,7
Mitsubishi UFJ Financial Group Inc	4,3
MSCO CUSTOMER SECURITIES	2,5
BlackRock Inc	2,4
Other	37,5

Source: Bloomberg

Company descriptions & rationale for the merger

JSR DESCRIPTION

- JSR Corporation is a prominent Japanese company engaged in the manufacturing and distribution of a diverse range of chemical and materials products. Founded in 1957 and headquartered in Tokyo, Japan, JSR operates globally with a robust presence in Asia, Europe, and the Americas. The company operates through four primary business segments: Digital Solutions, Life Sciences, Plastics and Other.
- JSR Corporation is known for its strong emphasis on research and development (R&D), maintaining collaborative relationships with academic institutions and industry partners. The company consistently strives to innovate and develop cutting-edge technologies, positioning itself as a leader in its respective markets.
- JSR's global operations are supported by a well-established supply chain and a strong distribution network, ensuring efficient delivery of its products to customers worldwide. The company adheres to stringent quality control standards, maintaining compliance with relevant regulations and certifications.
- The JSR Group operates in 19 locations in Japan and 28 locations overseas.

Digital Solutions Business

- Semiconductor Materials: Semiconductor manufacturing requires a variety of high-performance materials for the formation of integrated circuits and high-density packaging. The JSR Group offers a comprehensive range of these materials and meets the needs of global, leading-edge semiconductor manufacturers. As a global market leader of semiconductor materials, they take on the challenges of smaller design features and high-density integration of advanced semiconductor devices.
 - Lithography Materials: Photoresists (g-line, i-line, KrF, ArF, EUV [CAR, MOR]), topcoat materials for immersion lithography, and spin-on hardmask materials (organic, inorganic). It is used for fine processing of electronic elements and circuits on a substrate in the semiconductor manufacturing process and contributes to high-performance and shrinkage of semiconductor chips.
 - Advanced Packaging Materials: Thick layer plating photoresists for bumps and fine redistribution layers, photo-imageable dielectric materials, and low transmission loss materials for high speed 5G communication. It is used for wiring formation and bonding to a printed circuit board in the mounting process of semiconductor manufacturing, which is becoming increasingly dense and three-dimensional, and contributes to the higher performance and reliability of packaging systems for electronic devices.
 - CMP Materials and Process Materials: CMP slurries, CMP cleaning solutions, and functional cleaning solutions. It is used in semiconductor manufacturing for chemical mechanical planarization (CMP) for planarizing thin films such as wiring or insulating layers, and for removing residues that can cause defects in multilayer wiring systems
- Display Materials: The JSR Group supplies materials that meet various market needs for LCD and next generation displays, which are indispensable for TVs, PCs, and smartphones to achieve high image resolution, weight reduction, and low power consumption.
 - LCD Materials: Alignment film, organic insulation film, colored resist, protective film, and photosensitive spacer. It is used as a high-functional material in a number of films constituting LCD panels and contributes to higher image quality and lower power consumption.

- OLED Materials: Encapsulation material, planarization layer, light extraction material, pigment-dispersed resist, and low-temperature curable insulating film. It is used as a material to construct organic light-emitting diode (OLED) displays and oncell touch technology, which supports higher image quality and lower power consumption.
- Edge Computing Related Items: The JSR Group supplies materials that correspond to technical innovations for ICT, AI, and advanced mobile devices.
- Heat Resistant Transparent ARTON: It has a transparent resin with excellent optical properties, dimensional stability, and heat resistance. It is applied to optical corrections for displays and camera modules that enable photographic imaging with natural colors

Life Sciences Business

- Drug Discovery and Development Services: In the drug discovery and development services of the JSR Group, they work on the CDMO business (development and manufacturing of biopharmaceuticals) and the CRO business (development of pharmaceutical products). They also work together with affiliate companies such as Crown Bioscience, Inc., MEDICAL & BIOLOGICAL LABORATORIES CO., LTD., Selexis SA, KBI Biopharma, Inc. to enable a global and coherent support network from drug discovery to manufacturing. Through this series of drug discovery and development support services, the company will contribute to increase the probability of successful drug development and shortening the development timeline.
- Bioprocess Products Research & Diagnostics Products: They contribute to the efficient development and production of biopharmaceuticals, such as antibody drugs, using bioprocess products and research & diagnostics products. Their products will also support more advanced disease diagnosis and preventive diagnosis.

Plastics Business

- ABS and others: The JSR Group's ABS resin and other products are created with the technological capabilities to meet diverse needs and have unique characteristics that combine multiple properties. They are designing new products and supporting the production of parts, including the development of resins that demonstrate good appearance without painting and products with high secondary processability. They provide highly stable and value-added quality products to customers around the world.
 - General, Special, and Weather Resistant ABS resin
 - HUSHLLOY Anti-Squeak Material
 - PLATZON Plating Material
 - VIVILLOY Highly Colorable Material

Others

- Holter monitor Heartnote
- Adhesives for PP* MIGHTY LOCK
- High-performance Acrylic Emulsion
- Stereolithography Systems

Revenue and Core Operating Profit by Segment

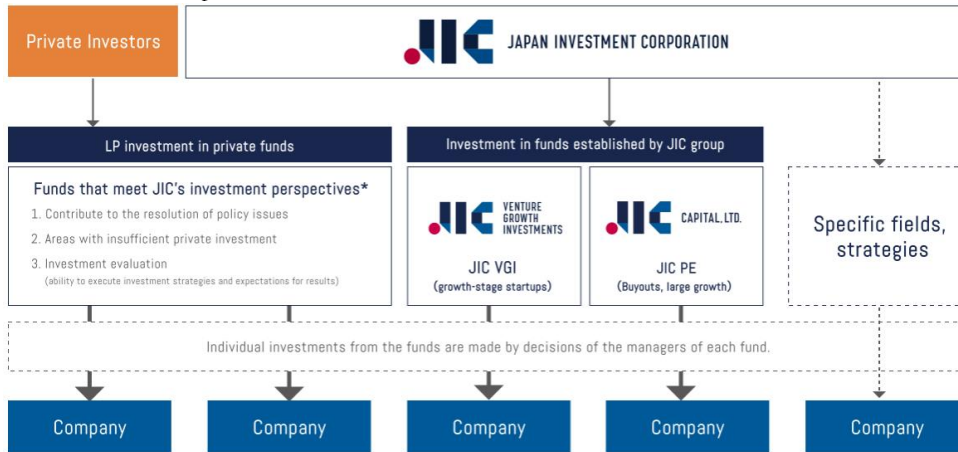
(Million yen)

Business		FY2020	FY2021
Digital Solutions	Sales	151,420	165,030
	Core Operating Profit	34,568	39,002
Life Sciences	Sales	55,197	72,452
	Core Operating Profit	3,510	3,168
Plastics	Sales	79,123	90,606
	Core Operating Profit	4,430	5,323
Others/Adjustment	Sales	26,259	12,910
	Core Operating Profit	-4,606	-4,187
Total	Sales	312,000	340,997
	Core Operating Profit	37,902	43,306

JIC DESCRIPTION

- Japan Investment Corporation (JIC) is a state-owned financial institution based in Japan, established in 2018 with the aim of promoting and facilitating investment in domestic industries. JIC operates under the supervision of the Ministry of Finance and functions as a government-backed investment fund.
- JIC's investment approach is characterized by active involvement and collaboration with portfolio companies, aiming to enhance their competitiveness and create value. The corporation forms partnerships with other financial institutions and industry experts to leverage their expertise and expand its investment reach.
- As a state-owned entity, JIC maintains a strong capital base and enjoys government support, which provides stability and enhances its ability to pursue long-term investment strategies. However, the corporation faces inherent risks associated with its investment activities, including potential losses on investments and market volatility.

- JIC aims to stimulate a virtuous cycle of risk capital to support next-generation industries in Japan. To achieve this vision, JIC
- promotes open innovation as a means of supporting growth and enhancing the international competitiveness of businesses. JIC
- approaches these challenges by stimulating private sector investments in open innovation together with JIC's own investment, while
- fostering investment professionals.
- To achieve this mission, JIC invests in strategic areas, based on its investment policy, through LP investments in funds under JIC's umbrella and private funds.



STRATEGIC RATIONALE FOR THE MERGER

- JICC believes that its support in promoting business expansion and industry reorganization, including with respect to the digital solutions business centering on the semiconductor materials business, through acquisitions by the Target Company, will further contribute to the smooth promotion of the Target Company's growth strategy. Specifically, JICC anticipates that the Target Company will be able to maximally utilize JICC's support, etc. in the formulation of M&A strategies, selection of targets, due diligence, contract negotiation, financing, PMI, and governance structures.
- By utilizing JICC's network cultivated through the collection of information and the exchange of opinions on overseas markets and personnel exchanges with domestic and foreign institutional investors and private business operators, JICC believes that it will be able to support the planning and execution of global growth strategies, including the recruitment of new global talent.
- JICC will be able to assist the Target Company in developing a medium to-long-term growth strategy, including financing, research and development, capital investment, and M&A based on a relatively long investment period. By providing assistance in formulating growth strategies and equity stories, collaborating with experts, and other support services, JICC will be able to assist in establishing a capital policy that will best contribute to the continuous creation of corporate value for the Target Company.

Key risks

REGULATORY RISKS, TIMING

The deal requires antitrust approvals in Japan, China, South Korea, Taiwan, possibly Vietnam Israel and Singapore and foreign investment approval in Belgium.

- The key concern is Chinese approval. JSR has the following subsidiaries in China:
 - JSR Micro (Changshu) Co., Ltd. - Production of display materials
 - JSR (Shanghai) Co., Ltd. - Sales agency of products such as synthetic rubbers, semiconductor materials, LCD materials and performance chemicals.
 - MBL Beijing Biotech Co., Ltd - Manufacture of in vitro diagnostic raw material platforms and provider of complete project solutions for in vitro diagnostic industry
 - MBL Hangzhou Biotech Co., Ltd - Manufacture of clinical diagnostics materials, antibodies and intermediates
 - MBL Shenzhen Biotech Co., Ltd. - Development, manufacture, and sale of diagnostic reagents and their raw materials
 - Techno-UMG Guangzhou Co., Ltd. - Sales and technical services of synthetic resin in Guangzhou and neighboring regions
 - Techno-UMG Shanghai Co., Ltd. - Sales and technical services of synthetic resin in China
- **About 17.6% of JSR's revenues come from China.** As per the latest results out of the JPY408.9 billion revenue about JPY 72 billion was from China.
- **JSR is the world's largest maker of photoresist. It holds a significant 30% share of the global photoresist market.** Photoresists are chemicals used in the printing of circuit designs on chip wafers, and Japan has a leading position in this technology. JSR serves customers such as Intel, Samsung, and Taiwan's TSMC.

- JSR and Shin-Etsu have market shares of 39% and 37%, respectively, in the ArF photoresist market, according to Nomura Securities
- **The Japanese Photoresist and semiconductor sector is not yet consolidated. Japanese rivals such as Tokyo Ohka Kogyo and Shin-Etsu aren't far behind.** Key players in the Photoresist sector: JSR Corporation, Fujifilm Electronic, Tokyo Ohka Kogyo, Shin-Etsu Chemical, Sumitomo, Everlight, Dow, Nata Chem, Kempur.
- **Japan accounts for more than 40% of global supply of photoresist in 2022 .** JSR along with Tokyo Ohka and ShinEtsu Chemical Co. control the global supply of fluorinated polyimide and hydrogen fluoride too.
- Those critical compounds are needed to make semiconductors used in supercomputers, AI-harnessing data centers and missile control systems
- The two parties have hinted at further consolidation that could create a national powerhouse. The move of JIC might signal intention from the Japanese government's side for further consolidation in the industry, in order to keep the sector's dominance as a national interest. JSR says it plans to relist in five to seven years.
- Chinese operation is mainly sales focused on display material photoresists.



Source: annual report

- In 2022 JSR stated that they have closed their plant in Taiwan as planned on March 31, 2022 and continue to promote a shift of resources toward China in parallel. Through a restructuring of their product mix and regional strategy, an increase in sales of mainstay products in the Chinese market was expected.



Source: marketsandmarkets.com

Semiconductors and politics

- There is reason to believe that the deal is politically driven. Recent market trends in the microchip supply chain are driven by political intentions relating to the increased US-China tensions. Which resulted in several trade restrictions of key technologies in the industry.
- Investors in JSR said the suddenness of the deal, combined with JIC's total lack of experience in buyouts on this scale had left them "scratching their heads" over the ultimate motive even after explanations from the company.
- JSR with its competitors came into a spotlight in July 2019 when Japan announced it would slap tightened export controls to South Korea on three key chemicals -- photoresists, fluorinated polyimide and hydrogen fluoride -- that could be diverted for manufacturing weapons.
 - Seoul filed a complaint to the World Trade Organization. The restrictions did little to affect shipments of the materials to chipmakers Samsung Electronics Co. and SK Hynix Inc., but the move was seen as a threat to hurt Seoul economically.
- The technology used by JSR for chipmaking is not yet spread over to China.
- In March, Japan placed restrictions on 23 types of semiconductor manufacturing equipment in alignment with Washington's efforts to hinder China's progress on producing the most advanced types of chips.
 - Effective July, Japan will impose export controls on six categories of equipment used in chip manufacturing, including cleaning, deposition, **lithography** and etching.
 - Among the 23 items subject to Japan's export controls are all immersion lithography machines, etching equipment, tools used for chemical wafer polishing (and possibly post-CMP cleaning), and extreme ultraviolet (EUV) mask-testers. These devices are made by ten companies, including Lasertec, Nikon, Screen Holdings, and Tokyo Electron. The updated regulation is expected to be formally declared in May and put into effect in July, so Chinese companies have at least three months to get the tools they might need.
- In an interview with the Financial Times last year, Johnson cast doubt on whether China would be able to master the sophisticated chipmaking technology in which JSR's products play a vital role.
 - **He said he wanted to balance being able to "respectfully" and "responsibly" service customers in China with "sensitivity to the concerns that the US government has and concerns with protecting interests in Japan".**
- **We note that China banned major chip maker and JSR customer Micron earlier this year from key infrastructure projects**

JIC exposure to semiconductors

- In 2013 INCJ (JIC's predecessor) was involved in a deal to rescue the Japanese semiconductor company Renesas. It gained a stake of 69% of the company at that time, which it reduced in the following years. As of today it still holds a 9.3% stake in the company.
 - As of today we found no public information on any kind of business relationship between Renesas and JSR.
 - Renesas Electronics is a global leader in microcontrollers, analog, power, and SoC products and provides comprehensive solutions for a broad range of automotive, industrial, home electronics, office automation, and information communication technology applications.

Timing

- We expect a full review in China due to JSR's leading market position and the sensitive nature of the industry. We believe that a reasonable deal close would be timed in Q1 2024.
- If China believes that the deal is motivated by a hostile political intent, it has its way to extend the timeline of the deal to up to a year or more.

CBR View:

- We believe that the deal does not pose serious antitrust risk.

- We note that JIC does not have control of any other player in the sector. It has cca 9% in Japanese semiconductor giant, Renesas.
- The buyout is most probably influenced by a larger strategic initiative from the side of the Japanese government in an industry that has not yet been consolidated. We note that it will require multiple antitrust and foreign investment approvals but due to the non-hostile relations to Japan we do not believe that this would cause major issues regarding the deal close for the most cases.
- A key exception here is China, as JSR produces key components in the microchip supply chain, Chinese regulators might look at a deal from a government backed fund as a hostile step.
- **We don't see straightforward opposition from the Chinese regulator as:**
 - **The deal does not change the industry characteristics in photoresists**
 - **The move will not increase market concentration**
 - **Japan is already a leader in the space and China's reliance on Japanese players won't change**
 - **In case of a rejection, China might risk loss of supply of critical materials**
 - **Possible trade restrictions of relevant materials might or might not be introduced irrespective of JSR's ownership structure.**
- **The fact that JSR CEO said that the firm is planning to relist in 5-7 years might also ease Chinese opposition.**

COUNTER BIDS

- It is understood that JSR was the one that approached JIC last November about a potential deal.
- We see that there would be incentives for other potential third parties to bid for the company. However, we believe that there are two main factors that make an entry of a counter bidder unlikely. First, if a foreign player would have an interest in acquiring JSR it would face strong opposition from Japan's foreign investment watchdogs as the sector has continuously been tagged as a key interest for the Japanese industry by government officials. Second, it is unlikely that any other player would start a bidding war with Japan's state-backed wealth fund.

SHAREHOLDER SUPPORT

- ValueAct Capital Supports Proposed Acquisition of JSR Corp

Valuation

PREMIUM

- The Tender Offer Price per Target Company Share (4,350 yen) also represents
- a premium of 34.51% on 3,234 yen, the closing price of the Target Company Shares on the Prime Market of the Tokyo Stock Exchange as of June 23, 2023, which was the business day immediately preceding the announcement date of the planned commencement of the Tender Offer (June 26, 2023),
- a premium of 30.47% on 3,334 yen, the simple average closing price for the preceding one-month period ending on that date,
- a premium of 36.66% on 3,183 yen, the simple average closing price for the preceding three-month period ending on that date, and
- a premium of 41.42% on 3,076 yen, the simple average closing price for the preceding six-month period ending on that date.

ROIC

- We assumed:
 - effective tax rate of 22%
 - no synergies

ROIC calculations

Deal value	2023	2024	2025	2026
<i>Bid price (JPY/sh.)</i>	4 350,00	4 350,00	4 350,00	4 350,00
<i>O/S (m)</i>	208,4	208,4	208,4	208,4
Market value (JPYm)	906 540,0	906 540,0	906 540,0	906 540,0
Net Debt (JPYm)	101 738,0	101 738,0	101 738,0	101 738,0
Deal value (JPYm)	1 008 278,0	1 008 278,0	1 008 278,0	1 008 278,0
ROIC calculation				
BEST EBIT	44 366,4	56 114,5	63 616,7	73 566,7
<i>Synergies</i>	0,0	0,0	0,0	0,0
Adj. EBIT	44 366,4	56 114,5	63 616,7	73 566,7
<i>Tax (22%)</i>	9 760,6	12 345,2	13 995,7	16 184,7
NOPAT	34 605,8	43 769,3	49 621,0	57 382,0
ROIC	3,4%	4,3%	4,9%	5,7%

Source: CBR and Bloomberg

Disclosures:

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