

# DRIVING FORCE

## Guide to the Russian Machinery Sector



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## Conclusions:

Due to the difficulties on the Russian bond market, speaking of fair prices based on an issuer's credit quality is not practical at the moment, in view of the prevalence of other factors in determining yields.

However, according to our research, we recommend looking at the following issuers from the machinery sector that have good credit quality and stable businesses:

- **GAZ Group**
- **KAMAZ Group**
- **Sollers Group**
- **OZNA Group**
- **Kirovsky Zavod Group**
- **AvtoVAZ Group**
- **Transmashholding Group**

We consider that the following issuers' high leverage demands a deeper analysis of their credit quality before making investment decisions:

- **NPO Saturn**
- **UMPO**
- **Perm Engine Company**
- **NPO Energomash**
- **Volgaburmash Group**
- **Zavod Avtopribor**

## CONTENTS:

	page
Features of the Russian machinery sector	
<b>Business processes of Russian aircraft and aircraft engine producers</b>	<b>6</b>
<b>MAIN FEATURES OF THE MACHINERY SECTOR</b>	<b>7</b>
<b>Sub-sector: Aircraft and aircraft engine production</b>	<b>7</b>
Overview of machinery sector issuers	9
<b>AIRCRAFT PRODUCERS</b>	
<b>Irkut SPC Group:</b> Design and production of Su-30MK fighter jets, Yk-130 trainer planes; amphibious airplanes Be-200; production of components for Airbus A320 and Airbus A350 airplanes. <b>Total revenue in 2007 of \$1022 mn.</b>	<b>9</b>
<b>Sukhoi Company:</b> Design and construction of the Russian regional airplane Sukhoi Superjet 100. The company had revenue over 1H07 of \$0.3 mn. The guarantor on the issue is the Sukhoi Group, the designer and producer of the Su family of aircraft. The company had 2005 revenue of \$561 mn.	11
<b>RAC Mig:</b> Design, testing, and production of the MiG family of aircraft (mainly the MiG-29 and its modifications). The company had 2006 revenue of \$720 mn.	13
<b>Rostvertol:</b> Production and servicing of the Mi family of helicopters: Mi-26 and 26T, Mi-24 (Mi-35 in the variant for export), Mi-28H. <b>The company had 2007 revenue of \$283 mn, while 1H08 revenue equaled \$93 mn.</b>	15
<b>AIRCRAFT ENGINE PRODUCERS</b>	
<b>REDEEMED. Salut Group:</b> Design, production and servicing of the Al-31F aircraft engine and its modifications for the Su family of planes; design and production of power installations. The company had 2006 revenue of \$316 mn.	17
<b>NPO Saturn Group:</b> Design of the SaM-146 aircraft engine for the Sukhoi SuperJet-100; design and production of the D-30KP aircraft engine for Il-76 planes, and the Al-55 series of aircraft engines; production of power installations and gas compressor units with a capacity ranging from 4 to 25 MW, R&D for a fifth generation aircraft engine. <b>The company had 2007 revenue of \$406 mn, while 1H08 revenue equaled \$116 mn.</b>	19
<b>UMPO:</b> Production of AL-31 and P-195 engines for aircraft of the Su family; production of the D-436 engine for the Tu-334 and Be-200; production of parts for helicopters of the Ka and Mi families; servicing of aircraft engines; production of gas turbine and gas compressor units with a capacity of 16 MW and electric power stations for 20 MW. <b>The company had 2007 revenue of \$620 mn, and 1H08 revenue of \$207 mn.</b>	21
<b>Perm Engine Company:</b> Production of PS-90A engines for Tu-204, Il-96, Tu-214 and Il-76 aircraft as well as gas-turbine units with a capacity of 2.5 to 25 MW. <b>The company had 2007 revenue of \$336 mn, while 1H08 revenue equaled \$194 mn.</b>	23
<b>KMPO:</b> Production of engines for gas compressor units and the units themselves (more than 70% of revenue), Al-22 aircraft engines for Tu-324 and Yk-48 airplanes; NK-93 engines for the Tu-204 and Tu-214 models; NK-93 for the Tu-204 and Tu-214 aircraft; and NK-86 engines for the Il-86. <b>The company had 2007 revenue of \$179 mn, while 1H08 revenue equaled \$96 mn.</b>	25
<b>ROCKET ENGINE PRODUCTION</b>	
<b>Business processes of rocket engine producers</b>	<b>27</b>
<b>Main features of the rocket engine production sector</b>	<b>28</b>
<b>Motorostroitel:</b> The company's main business is production of rocket engines for Soyuz and Soyuz-2 rockets made by FSUE CSDB Progress. Motorostroitel also performs engine repairs for Russian Air Force strategic aviation (Tu-95; Tu-22M3; Tu-160); produces and provides technical servicing of gas turbine engines; and produces and repairs power stations with 10 and 25 MW capacity. <b>The company had 2007 revenue of \$121 mn.</b>	30
<b>Proton – Perm Motors:</b> Production of RD-275 engines for Proton class rockets, which are the main means for transporting heavy satellites to their geostationary orbit and for transporting modules for the International Space Station (ISS); this production makes up to 80% of the company's revenue. <b>The company had 2007 revenue of \$114 mn, while 6M08 revenue equaled \$79 mn.</b>	32
<b>NPO Energomash in the name of Academic V.P. Glushko:</b> Design and production of liquid-fuel rocket engines for Soyuz, Molniya, Kosmos, Proton, and Zenit rockets; design of the future RD-191 liquid-fuel rocket engine for the Angara family of rockets. <b>The company had 2007 revenue of \$106 mn.</b>	34
<b>EQUIPMENT PRODUCERS</b>	
<b>Business processes of equipment producers</b>	<b>36</b>
<b>Main features of the equipment producers sub-sector</b>	<b>37</b>
<b>United Machine-Building Company (OMZ Group)</b> is a many-segmented holding which produces special steels, atomic, mining, metallurgic, and petrochemical equipment. <b>The company had 2007 revenue of \$826 mn.</b>	38
<b>Energomash Group (GT-CHP Energo)</b> is one of the leading machine-building holdings in Russia, and specializes in production of electric power, petro- and gas chemistry equipment, and metallurgic equipment. <b>The company had 2006 revenue of \$416 mn; GT-CHP Energo had 2007 revenue of \$39 mn and 1H08 revenue of \$22 mn.</b>	41
<b>Motovilikhinskie Zavody Group</b> is a large, many-profile holding which produces metallurgic and machine-building goods, as well as weapons (such as the Uragan and Smerch Multiple Rockets Launching Systems, which have no analogues in the world). <b>The company had 2007 revenue of \$445 mn.</b>	43

**Hydraulic Machines and Systems Group** is one of the leading producers of pumps and oil and gas equipment in Russia. The company had 2006 revenue of \$247 mn, while 1H07 revenue equaled \$196 mn. **Hydromachservice's 2007 revenue was \$140 mn; 1H08 revenue was \$60 mn.** 45

**October Plant of Oil Automatics (OZNA Group)** is one of the leading producers of block oil and gas equipment in Russia. **The company had 2007 revenue of \$166 mn.** 47

**Volgaburmarsh Group** is the Russian leader in production of drill bits in Russia (about 100 thou units in 2006, or more than an 80% market share) and is one of the five leading producers in the world with a world market share of about 10%. **The company had 2007 revenue of \$86 mn and 1H08 revenue of \$51 mn.** 49

**Cryogenmash Group** is the Russian leader in production of air separation equipment (about a 50% market share), producer of technical gases. **The company had 2007 revenue of \$123 mn.** 51

**LOMO** specializes in production of military, space, and medical technology, optical-electronic and optical-digital instruments, systems for civil and special surveillance, and lighting and digital microscopy. **The company had 2007 revenue of \$61 mn, while 1H08 revenue equaled \$36 mn.** 53

**Ural Optical and Mechanical Plant** produces optical-electronic devices and is a monopolist in the field of design and production of optical-electrical complexes for military uses in the CIS states. **The company had 2007 revenue of \$128 mn.** 55

**EM-Alliance Group** is the national leader in the sphere of production of energy boiler equipment (according to company data, it controlled 80% of the market in 2007). **The Group had 2007 revenue of \$130 mn in 2007.** 57

**REDEEMED. Izhevsk Arms** is one of the leading arms producers in Russia and the world (including the Kalashnikov automatic rifle and Dragunov sniper rifles). The company had 2006 revenue of \$112 mn. 60

**European Bearing Corporation Group (EBC Group)** is the leader in bearing production by volume in the former USSR (26.5 mn units in 2006), and controls 30% of the CIS market. The Group controlled 40% of the Russian bearings market in 2007. **EBC Group had 2007 revenue of \$415 mn (preliminary data).** 62

## CAR MANUFACTURERS

**Business processes of car manufacturers** 64

**Main features of the car manufacturing sub-sector** 65

**Map of car manufacturing facilities in the Russian Federation as of February 2008** 67

**AvtoVAZ Group** designs and produces passenger cars. AvtoVAZ produced 791,000 cars and 112,000 car assembly units in 2007, which equaled 29% of the Russian market for new cars in quantitative terms. **The company had 2007 revenue of \$7.340 bn.** 68

**GAZ Group** is one of the leading car manufacturing holdings in Russia; it produces goods under 14 trademarks. The company is made up of 18 subsidiaries located in Russia and Great Britain. **The Group had 2007 revenue of \$5.979 bn.** 71

**KAMAZ Group** is one of the ten largest world manufacturers of heavy trucks with a mass greater than 14 tons, and is the 8<sup>th</sup> largest company in the world in terms of diesel engine production. **The company had 2007 revenue of \$3.805 bn.** 74

**Sollers Group (Severstal-Avto)** assembles ISUZU trucks, UAZ Patriot and UAZ Hunter sport utility vehicles (51% of revenue in 2006), SsangYong models (Rexton, Kyron, Actyon) and FIAT models (Albea, Doblo, Ducato) (10% of revenue). The company also produces 4- and 8 cylinder gasoline engines (35% of revenue). Lastly, the company imports and sells SsangYong, ISUZU, and FIAT vehicles. **The Group had 2007 revenue of \$1.921 bn and 1H08 revenue of \$1.262 mn.** 77

**REDEEMED. SOK Group** is a multi-profile holding; the Group considers the automotive business to be its main priority (production of car parts, assembly, and retail sales of means of transportation). The company had 2006 revenue of \$2.8 bn. 80

**IzhAvto Group** is part of the SOK Group, and produces VAZ, Izh, and KIA brand vehicles. According to the company's own information, it controls 4.6% of the Russian car market and 8.8% of the Russian market for foreign cars. **The company had 2007 revenue of \$902 mn, while 1H08 revenue equaled \$538 mn.** 83

**Tractor Plants Concern** unites subsidiaries from the industrial, agricultural, and railway machine-building segments and the military defense technology complex. **Promtraktor had 2007 revenue of \$270 mn, while 1H08 revenue equaled \$188 mn.** 85

**Kirovsky Zavod Group** is a vertically-integrated holding which operates in the machine-building (according to the company's own estimates it controlled about 7.5% of the Russian tractor and agricultural machines market in 2006) and metallurgy sectors. **The company had 2007 revenue of \$454 mn.** 88

**Kurganmashzavod** is part of **Tractor Plants Concern**. The company receives its main revenues from selling BMP-2 and BMP-3 Infantry Fighting Vehicles, the MKSM-800 multi-purpose communal-construction machine, and mini-tractors. The company had 2006 revenue of \$183 mn. 91

**Avtopribor Zavod** designs and produces electric equipment, measuring instruments, and spare parts for auto-, moto-, and bike equipment (more than 400 kinds of parts). **The company had 2007 revenue of \$95 mn, while 1H08 revenue equaled \$57 mn.** 93

## ROLLING STOCK PRODUCERS (RAILWAY MACHINE-BUILDING)

**Business processes of rolling stock producers (railway machine-building)** 95

**Main features of the rolling stock production sub-sector (railway machine-building)** 96

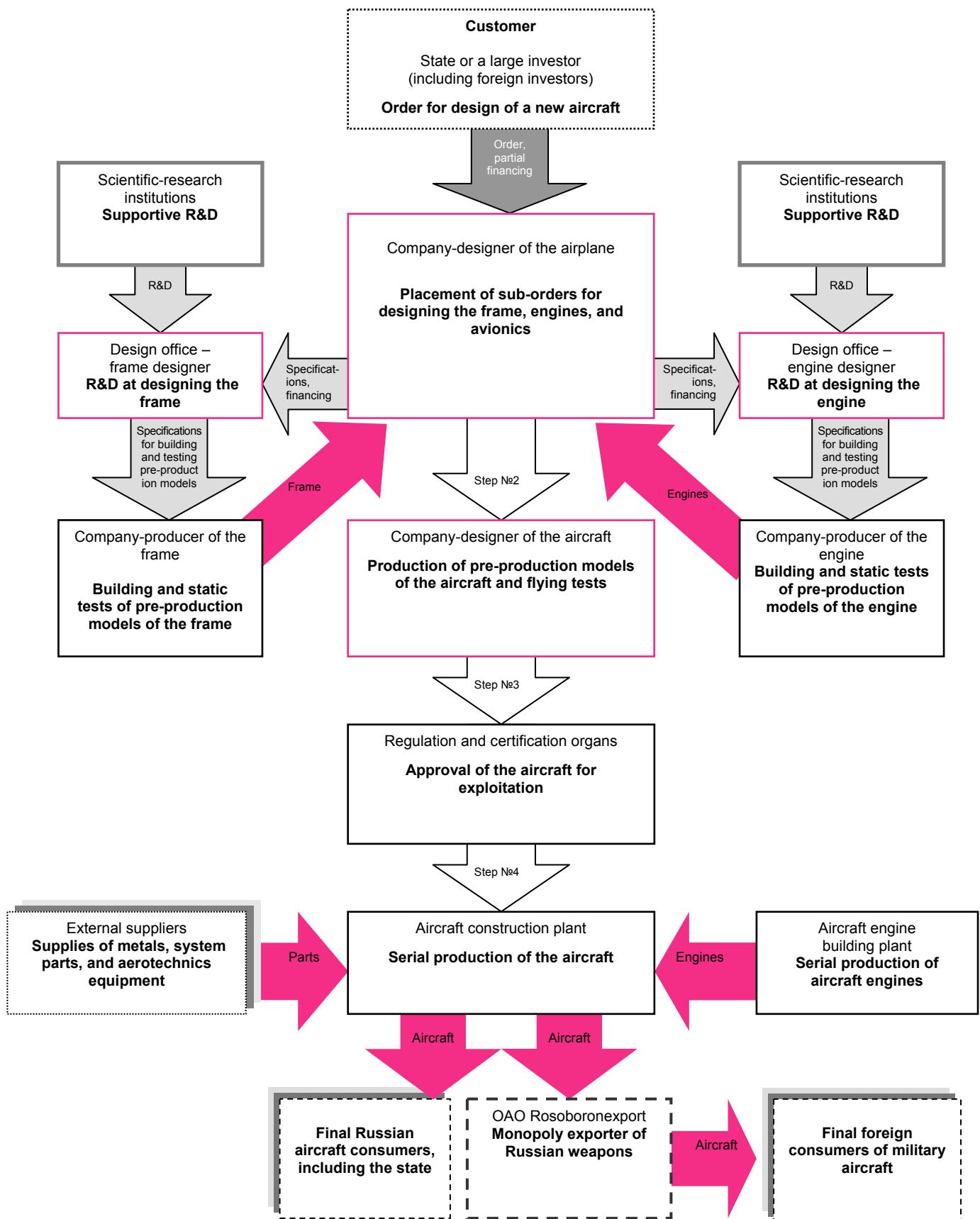
**Transmashholding Group** is the largest producer of rolling stock in Russia (more than 4,000 units in 2006, and the world leader by physical production volume). **The company had 2007 revenue of \$1.768 bn; 1H08 revenue was \$1.09 bn.** 99

**Uralvagonzavod** is the largest carriages-building company in Russia. The company is also one of the leading world producers of military tanks (T-72C, T-90C and other tanks). **The company had 2007 revenue of \$1.55 bn.** 103

<b>Tver Carriage-Building Plant</b> is the largest company in the CIS for production of passenger carriages (803 units in 2006, 675 units over the first 9 months of 2007; 1 <sup>st</sup> place in Russia). <b>The company had 2007 revenue of \$692 mn and 1H08 revenue of \$464 mn.</b>	<b>105</b>
<b>Ruzkhimmash (part of the Russian Transport Machine-Building Corporation)</b> is one of the leading companies in Russia for production of cargo rail-cars (4,400 units; in the company's estimate, it controlled 15% of the Russian train market in 2006). <b>The company had 2007 revenue of \$335 mn and 1H08 revenue of \$189 mn.</b>	<b>107</b>
<b>Vagonmash Group</b> is one of the leading Russian producers of subway cars (40 units in 2006, 20% of the market), passenger carriages (43 units) and trams. <b>The company had 2007 revenue of \$91 mn and 1H08 revenue of \$43 mn.</b>	<b>110</b>
<b>Comparison of financial results among machinery sector issuers</b>	
<b>Aircraft producers</b>	<b>112</b>
<b>Aircraft-engine producers</b>	<b>113</b>
<b>Rocket engine producers</b>	<b>114</b>
<b>Equipment producers</b>	<b>116</b>
<b>Car manufacturers</b>	<b>117</b>
<b>Rolling stock producers (railway machine-building)</b>	<b>118</b>
<b>Map of machinery sector issuers</b> (AIRCRAFT PRODUCERS, AIRCRAFT ENGINE PRODUCERS, ROCKET ENGINE PRODUCERS)	<b>119</b>
<b>Map of machinery sector issuers</b> (EQUIPMENT PRODUCERS, CAR MANUFACTURERS, ROLLING STOCK PRODUCERS (RAILWAY MACHINE-BUILDING))	<b>120</b>
<b>Update History</b>	<b>121</b>

## Features of the Russian machinery sector

### Business processes of aircraft and aircraft engine producers



## Main features of the Russian machinery sector

### Aircraft and aircraft engine production subsector

Overall the business processes of aircraft and aircraft engine producers work in the following way: Initially the company or the state places an order for designing an aircraft (civil or military) to a lead company-designer. The latter is chosen based on the results of a tender, but can also take independent initiative to design a new aircraft model. The customer can partially finance the project, and if the state is the customer, then it can offer other kinds of preferences or guarantees.

An airplane consists of three main parts: the frame (just like body of an automobile), the engine(s), and aviation equipment (avionics). Military aircraft additionally include weapons that are integrated into the airplane (for example aircraft cannons) or external armament (bombs, rockets, external cannons, machine-guns etc.). Aviation equipment and weapon, as a rule, are universal for each class of aircraft; design of these components is done by specialized organizations. These organizations usually work independently of whether or not a new aircraft project is being designed. Aircraft engines and aircraft frames are more closely related: as a rule, aircraft engines are designed with a specific frame in mind.

After getting an order for a new aircraft, design companies then place sub-orders for R&D on frame and engine design among design bureaus, and partially compensate these sub-contractors' primary costs. The design bureaus may be part of one group together with the design company, but are sometimes completely independent.

Having prepared technologies to be used in the frame and engine, design offices then give specifications to manufacturing plants for making pre-production models. These plants then make static (on-land) tests of the models together with the design office. The design offices and manufacturing plants are sometimes united within one legal entity or group of legal entities.

After the tests are finished, the frame, engines and technologies used in the model are then passed on to the lead product designer, which builds pre-production models of the airplane (sometimes several) and performs the whole cycle of tests, including flying tests. At this stage, as a rule, a number of observations and requests arise. Furthermore, shortcomings are noted, and then eliminated in close coordination with the design offices and plants which manufactured the frame and engine, as well as with the aviation equipment suppliers.

Once the aircraft has completely satisfied the builder, it must then pass state tests and certification. If the model is approved by state authorities for exploitation, then serial production of the aircraft and the engines that go with it begin, followed by sales of the finished aircraft to Russian and foreign buyers. Traditionally military aviation equipment is exported through Rosoboronexport. Usually preliminary orders and advance payments are made already at the last design stage, thereby financing the whole program.

The project participants listed above (the customer, lead design company, design offices, production and testing plants, parts suppliers, aircraft production plant, aircraft engine production plant, etc.) may be a united legal entity or all be part of one holding, as is often the case in the construction industry (customer, investor, general contractor, and subcontractors – all in one holding).

As aircraft are used their engines and frames start to deteriorate. One of the features of aviation equipment is that the frame can be used for a rather long time (length of service of more than 5-10 years), while aircraft engines have a shorter length of service. The deterioration of aircraft engines is determined by the number of hours in flight. Engines periodically undergo planned repairs (just as cars periodically receive maintenance), and may also go through (albeit more rarely) capital repairs. After repairs are made, the engine is then given a new remaining lifespan, which is almost equal to the lifespan of a brand new engine. Thus, having undergone planned repairs, aircraft engines can be used for a long time. Accordingly, there is high demand for modernization and repairs of airplane engines. These services are offered by aircraft engine production plants. Such repair services provide engine production plants with a large share of their revenue.

Aircraft engine plants also get a significant share of revenue from design and production of gas turbine units (GTUs), which are per se aircraft engines which can be used on land. These units are used in gas compressor units (GCUs) and power generation units of various capacities.

Aircraft manufacturing companies, besides issuing and designing new airplanes, also work at modernization of currently-existing equipment, including avionics renewal, armament, and engine replacement. These works are done in the interests of both Russian consumers and to fulfill foreign contracts.

There are several principle particularities which are common to all aviation machinery companies, including the dependence of business profitability on the cost of metallurgical raw materials (for the aviation machinery industry these include aluminum, titanium, nickel, and metals alloys); having a limited circle of suppliers (production of certain parts for airplanes and airplane engines are monopolized); and having a rather long production cycle (more than a year in the majority of cases). Due to this long production cycle, bond issuers are often characterized as having a high debt burden: customers finance part of the costs for fulfilling the order (through an advance payment), while the remaining costs are covered by the production company using its own funds. Considering that large amounts of funds are needed to fulfill one order (this amount can be comparable with, for example, half-a-year's revenue for the producer), production companies are forced to raise funds on the bond market. Furthermore, investments into R&D make up a large part of total costs for the majority of companies in the sector. R&D costs are partially financed by the customer, or are completely paid by the producer itself (often using borrowed funds). Getting returns on such investments and, likewise, paying off debt taken for R&D, takes a long period of time.

Another consequence of having a long production cycle is that financial reports made over the course of the year are not representative of the true state of financial affairs in the company as a rule. Revenue is not received at a regular rate over the course of the year. Aircraft manufacturers receive only several large one-time payments over a year (advance payments and payments for finished products), which in fact make up the company's revenue for the year. Orders placed by the Ministry of Defence are most often paid off in the fourth quarter of the year.

Issuers which produce defence technology have low transparency, to the point of being a state secret. Defence technology producers get their main revenues from export sales of goods (in other words this revenue carries currency and political risks). It is also characteristic of these companies that they receive only a very small share of their orders from the Russian Ministry of Defence for new technology. Another important problem for producers of aviation equipment, especially of defence technology, is the aging of its personnel and a lack of qualified local employees.

The world market for aircraft is characterized by strong competition in both the military and the civilian sectors (Boeing, a US group, and Airbus, a European group, dominate in the civilian sector).

The Russian government is actively stimulating growth in the sector at present, including through consolidating manufacturers. A series of aircraft building and aircraft engine building holdings are being formed with the aim of stimulating growth of the Russian aviation machinery sector.

Aircraft construction companies will enter United Aircraft-Building Corporation, which has been created to fulfill the following tasks:

- To liquidate surplus production capacities (the average capacity utilization of production equipment ranges from 10-15% at present);
- To unite resources that are currently spread out so as to fulfill priority goals (for example, to create a 5<sup>th</sup>-generation fighter jet);
- To eliminate competition between Russian producers for state orders and export contracts;
- To increase the competitiveness of the Russian aircraft-building sector on the world market.

President Vladimir Putin signed a decree "On the open joint shareholders company 'United Aircraft-Building Corporation'" on February 21, 2006 as part of the government's plans for consolidating the sector. Design, production, sales, servicing, and modernization of aviation machinery for military and civilian purposes in the interest of the state, as well as implementation of new technologies and design in the field of aircraft building have been named as the new corporation's priority business segments.

Aircraft engine building companies will be merged into four holdings:

- The first holding will include Salut, Omsk Engine-Building Company in the name of Petr Baranov and a series of other smaller Moscow and Samara-based plants;
- The second holding will be formed by combining Klimov Company with Chernyshev Moscow Machine-Building Enterprise (both of which are currently part of the RAC MiG Group);
- The third holding will be formed by a Samara-based group of companies with Samara Scientific-Technical Complex in the name of N.D. Kuznetsov at its head;
- The fourth holding will include Perm Engine Company, NPO Saturn and Ufimskoe Engine Building Production Company.

Later all four holdings will be included in a single aircraft engine building company. The formation of the holdings and their final consolidation will take until the end of 2009.

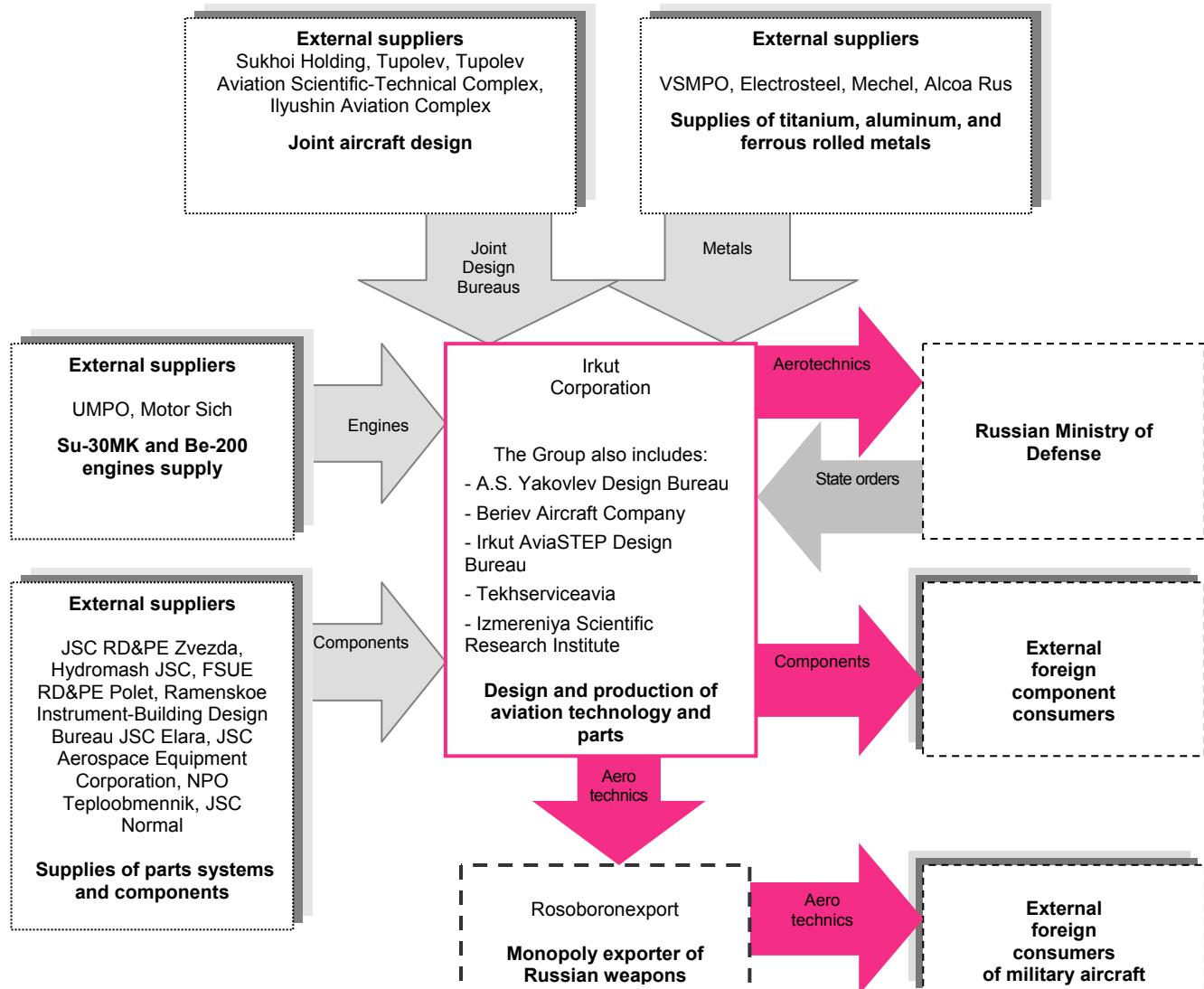
## Overview of machinery sector issuers

### Aircraft producers

#### Irkut Scientific-Production Corporation Group (2<sup>nd</sup> tier)

Design and production of Su-30MK fighter jets, Yak-130 trainer planes, and Be-200 amphibious airplanes, as well as production of components for Airbus A320 and Airbus A350 airplanes. **Revenue in 2007 of \$1022 mn.**

**Ratings: Moody's: Ba1/Stable**



#### Here and further in schemes:

- external suppliers which are not part of the holding structure;

- external consumers which are not part of the holding structure.

Irkut Scientific Production Corporation (Irkut SPC Group) designs and produces the following airplane models:

- Su-30MK fighter jet;
- Yak-130 trainer plane;
- Be-200 amphibious plane;
- Components for Airbus A320 and Airbus A350 planes.

Irkut SPC Group is part of the state aircraft building holding United Aircraft-Building Corporation (UAC), which was created in February of 2006. The holding will unite the aircraft-building complexes Irkut/Yakovlev, Sukhoi, MiG, Ilyushin, and Tupolev. At present a process for integrating these companies into the new structure is under way; the main shareholders of Irkut SPC Group (the state and company management) have already transferred the controlling stake in the company into UAC's charter capital. Alexey Fedorov, the Chairman of the Board of Directors of Irkut SPC, has been named as UAC's CEO.

The state's share in Irkut SPC Group is 38.2%, while the state's stake in UAC is 75%. Irkut SPC Group has more than 17,000 employees.

The state considers development of the aviation sector to be a priority for industrial policy: the state will invest RUR200 bn into civil aircraft construction by 2015, and will also invest up to RUR1 bn per year into aircraft leasing. The state will spend RUR100 bn annually on R&D, and will spend RUR1 trillion to develop a 5<sup>th</sup> generation fighter jet.

The total portfolio of international orders made to Russian defence industry companies increased by \$14 bn in 2006 to \$30 bn (of which 42.5% were made for military products). Irkut SPC had an order portfolio of \$4.4 bn in 2006.

Irkut SPC actively cooperates with EADS — the leading European and world aircraft producer. Irkut SPC also conducts financial reporting under IFRS.

#### Risks:

- Significant dependence of Irkut SPC Group's business on customers (including foreign ones) combined with the high level of competition on the world market for defence aviation technology;
- Irkut SPC Group is dependent on price dynamics for purchased parts (there are no alternative suppliers for a number of parts);
- Weak dynamics of Irkut SPC Group's financial results for 2007: the group had growth in revenue of 22.3% on the back of a decrease in EBITDA and net profit.

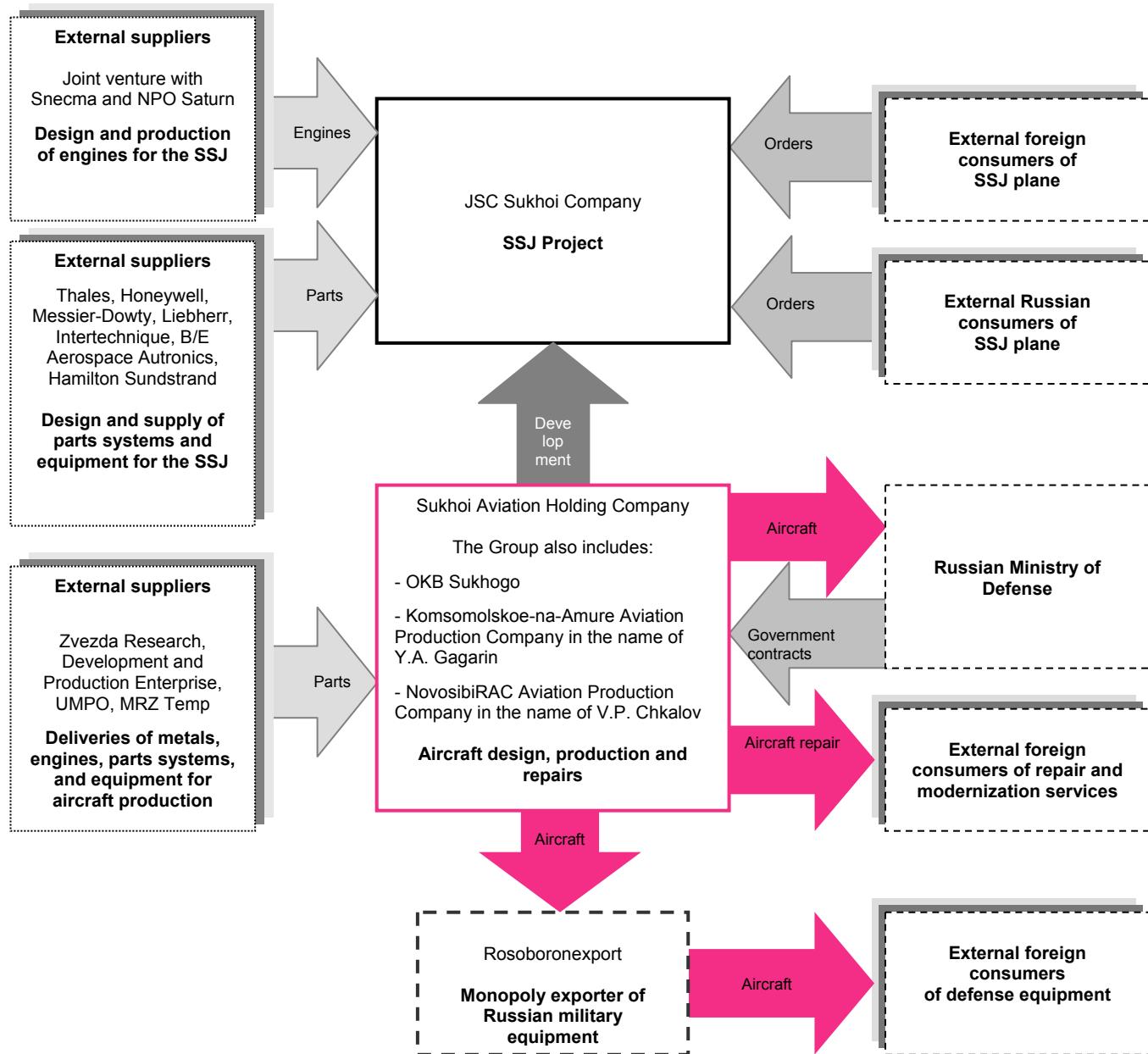
#### Irkut SPC Group financial results under IFRS, \$ mn

Indicator	2006	2007	Change
Revenue	832	1 022.0	22.8%
EBITDA	114	Operating Profit: 81.0	-28.9%
Net Profit	43	38.0	-11.6%
Assets	1 473	1 874.0	27.2%
Financial Debt	655	995.0	51.9%
Shareholders' Equity	108	450.0	316.7%
Financial Debt/Assets	44.5%	53.1%	8.6 p.p.
Financial Debt/EBITDA	5.7	Financial Debt/Operating Profit: 12.3	+6.5
EBITDA Margin	13.7%	Operating Profit Margin: 7.9%	-5.8 p.p.

## Sukhoi Company (Sukhoi Group) (2<sup>nd</sup> tier)

Design and construction of the Russian regional airplane Sukhoi Superjet 100 (SSJ). The company had 1H07 revenue of \$0.3 mn. The guarantor on the issue is the Sukhoi Group, the designer and producer of the Su family of aircraft. The company had 2005 revenue of \$561 mn.

**Ratings:** None.



Sukhoi Company designs and builds the Russian regional plane Sukhoi Superjet 100 (SSJ) with 75 and 95 passenger seats. This model is to replace the outdated Tu-134 model.

As of the end of 2007 the company had received orders for more than 100 planes, the first of which is planned to be delivered to the customer (Aeroflot) at the end of 2008. Altogether in 2008 the company plans to build 60 airplanes and maintain production at 60–70 airplanes annually in the future. One of the particularities of the SSJ project is that it involves close cooperation with external suppliers and designers, including foreign ones: the SSJ's new engine was created by VolgAero, a joint venture between Snecma Corporation and NPO Saturn, the avionics were made by Thales, the supporting power unit was made by Honeywell, and the airplane's chassis by Messier-Dowty, etc. Altogether about \$1.5 bn was invested into the project. The sources of financing for the project are state funds offered with the aim of fulfilling the federal program "Development of Russian civilian aircraft construction in 2002–2010 and for the period through 2015".

The project also uses Sukhoi Group's own and borrowed funds. The majority of costs come from buying new equipment for organizing aircraft production at plants in Komsomolsk-on-Amur and Novosibirsk.

**Implementation of the SSJ project:** The project plan called for starting flying tests of the SSJ100 by the end of 2007. These plans were not fulfilled, however. The new date for the beginning of flight tests, according to various sources, is the end of winter or beginning of spring 2008. According to the media, one of the reasons for the delay was that flight tests for the SaM-146 engine were delayed by two months, from October 2007 to December 2007. NPO Saturn's management thinks that the guilty party in the delay is the subcontractor organization Flight-Research Institute in the name of Gromov. Tests of the plane's frame were also not finished as of the end of 2007.

President Vladimir Putin signed a decree in January of 2008 allowing the Italian company Alenia Aeronautica to participate in JSC Sukhoi Company's charter capital in an amount of 25% + 1 share. According to information from Sukhoi Company, the transaction should be completed by the middle of summer 2008. Alenia will invest about \$200 mn in the Sukhoi SuperJet 100 project by 2009.

Under this cooperation Alenia will finish off planes in accordance with requests made by foreign buyers, will re-equip cabins for business aviation, will produce a series of parts for the fuselage, sell the SSJ in Europe, the United States, Africa and Australia, and also service the planes that it has sold.

Aviation Holding Company Sukhoi, the head entity of Sukhoi Group, serves as the guarantor for the GSS issue. The Group is made up of the following companies:

- Sukhoi Design Bureau: a design bureau (main projects at this time include creating a fifth-generation military aircraft system, designing and upgrading the Su-24MK, Su-30MK, Su-33, Su-34, Su-35, and Su-39 military planes, as well as the cargo-passenger plane Su-80GP, and the sport-pilot Su-29 and Su-31M planes);
- Komsomolsk-on-Amur Aviation Production Company in the name of Y.A. Gagarin produces and repairs aircraft (Su-27, Su-30MKK, Su-30MK2, Su-35, and the amphibious airplanes Be-103 and Sa-20P "Osa"), and is preparing production capacity for manufacturing airplanes under the SSJ project;
- Novosibirsk Aviation Production Company in the name of V.P. Chkalov — produces and repairs aircraft (Su-24M, Su-34, An-38), and is preparing production capacity for issuing airplanes under the SSJ project;
- JSC Sukhoi Company – is implementing the SSJ project.

Furthermore, the Sukhoi Group owns 38% of Beriev Aircraft Company (a design bureau which is the leader in the field of amphibious-airplane design) and 11.6% of the shares in Irkut SPC (production of Su-30MK fighter jets).

All 100% of Sukhoi Group's shares were transferred to United Aircraft-Building Corporation's charter capital in 2006. United Aircraft-Building Corporation is Russia's largest aircraft-building holding, and is 75% owned by the state. Until then Sukhoi Group was 100% controlled by the state.

More than 1500 employees work in Sukhoi Company, while there are more than 27,000 employees altogether in the Sukhoi Group.

#### Risks:

- Significant dependence of Sukhoi Group's business on customers (including foreign ones) combined with strong competition on the world market for military aircraft;
- **Sukhoi Group lacks consolidated financials for 2007 and IFRS financials;**
- **Shift in the plan for fulfilling the SSJ project.**

#### Sukhoi Group financial indicators under IFRS, \$ mn

Indicator	2006	Change
Revenues	1.0	-38.8%
Operating Profit	-0.1	-104.3%
Net Profit	0.0	-400.0%
Assets	311.2	675.0
Financial Debt	251.1	576.0
Shareholders' Equity	0.0	243.8%
Financial Debt/Assets	80.7%	85.3%
Financial Debt/Operating Profit	-	-
Operating Profit Margin	-	0.5%

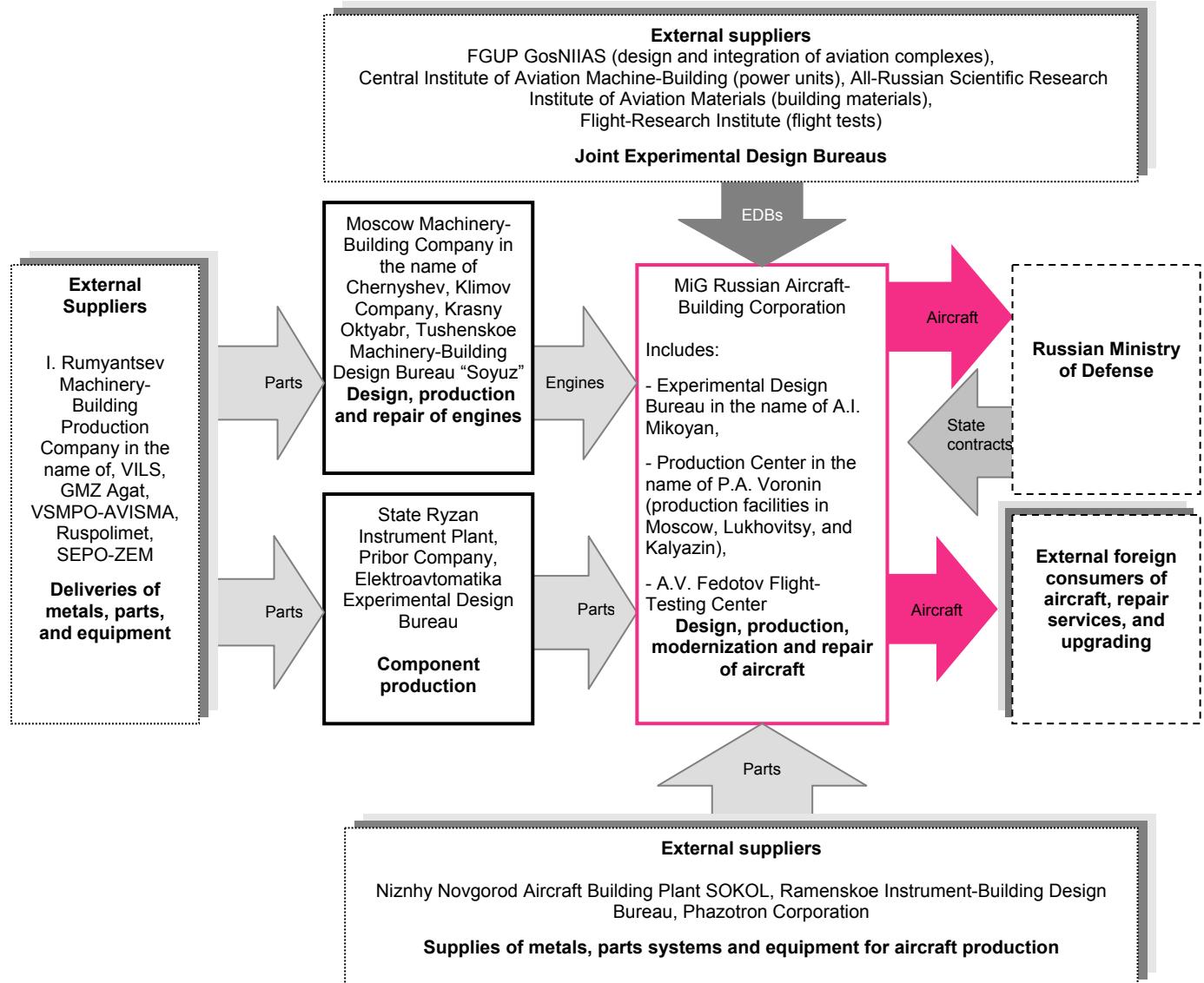
#### Sukhoi Group consolidated financials under RAS, \$ mn

Indicator	2005
Revenues	561.0
EBITDA	45.0
Net Profit	0.2
Assets	1 992.0
Financial Debt	264.0
Shareholders' Equity	1 116.0
Financial Debt/Assets	13.3%
Financial Debt/EBITDA	5.9x
EBITDA Margin	8.0%

## RAC MiG Group (2<sup>nd</sup> tier)

Design, testing, and production of the MiG family of aircraft (mainly the MiG-29 and its modifications). The company had 2006 revenue of \$720 mn.

Ratings: None



Russian Aircraft-building Corporation (RAC) MiG, is a vertically-integrated holding that includes all of the necessary subdivisions for developing, testing, and producing aircraft of the MiG family (in particularly the MiG-29 and its modifications).

RAC MiG Group includes:

- Mikoyan Design Bureau;
- Production Center of P.A. Voronin with three production facilities (in Moscow, Lukhovitsy and Kalyazin);
- A.V. Fedotov Flight-Test Center;
- Engine-building sub-holding (Chernyshev Moscow Machine-Building Enterprise, Plant Klimov Company, Krasny Oktyabr, Tushenkoe Machinery-Building Design Bureau "Soyuz");
- Sub-holding for parts production (State Ryazan Instrument Plant, Pribor Company, Elektroavtomatika Experimental Design Bureau).

The main companies of RAS MiG Group have completed going public and have joined United Aircraft-building Corporation. Alexey Fedorov, the Chairman of the Board of Irkut SPC, as well as Chairman of the Management Board of UAC, will head RAC MiG Group. RAC MiG Group was 100% owned by the state (before entering UAC). The Group employs about 14,000 people.

RAC MiG Group's order portfolio exceeded \$2 bn as of the beginning of 2006, while more than 80% of these deliveries will be made in 2006–2008.

The Group has the right to sell aircraft directly to foreign consumers, thereby avoiding Rosoboronexport.

#### Risks:

- Significant dependence of MiG Group's business on customers (including foreign ones) combined with strong competition on the world market for defence aviation technology;
- Rather poor state of the Group's financial reporting:
  - Lack of consolidated financials for the Group, including under IFRS
  - Lack of a re-valuation of the company's fixed assets in its financial reporting since 1992
- High level of deterioration of its production equipment (up to 90% for various production facilities);
- MiG Group's revenue mainly comes from export sales (thus there may be currency and political risks);
- The main fleet of the Russian Air Force consists of planes from the Su family, and the likelihood of an order being placed by the Russian Ministry of Defence is not very high;
- Low informational transparency of the company's business (the majority of information about the Group is a state secret);
- After RAC MiG Group enters UAC then its aircraft engine-building subholding will be separated from the Group.

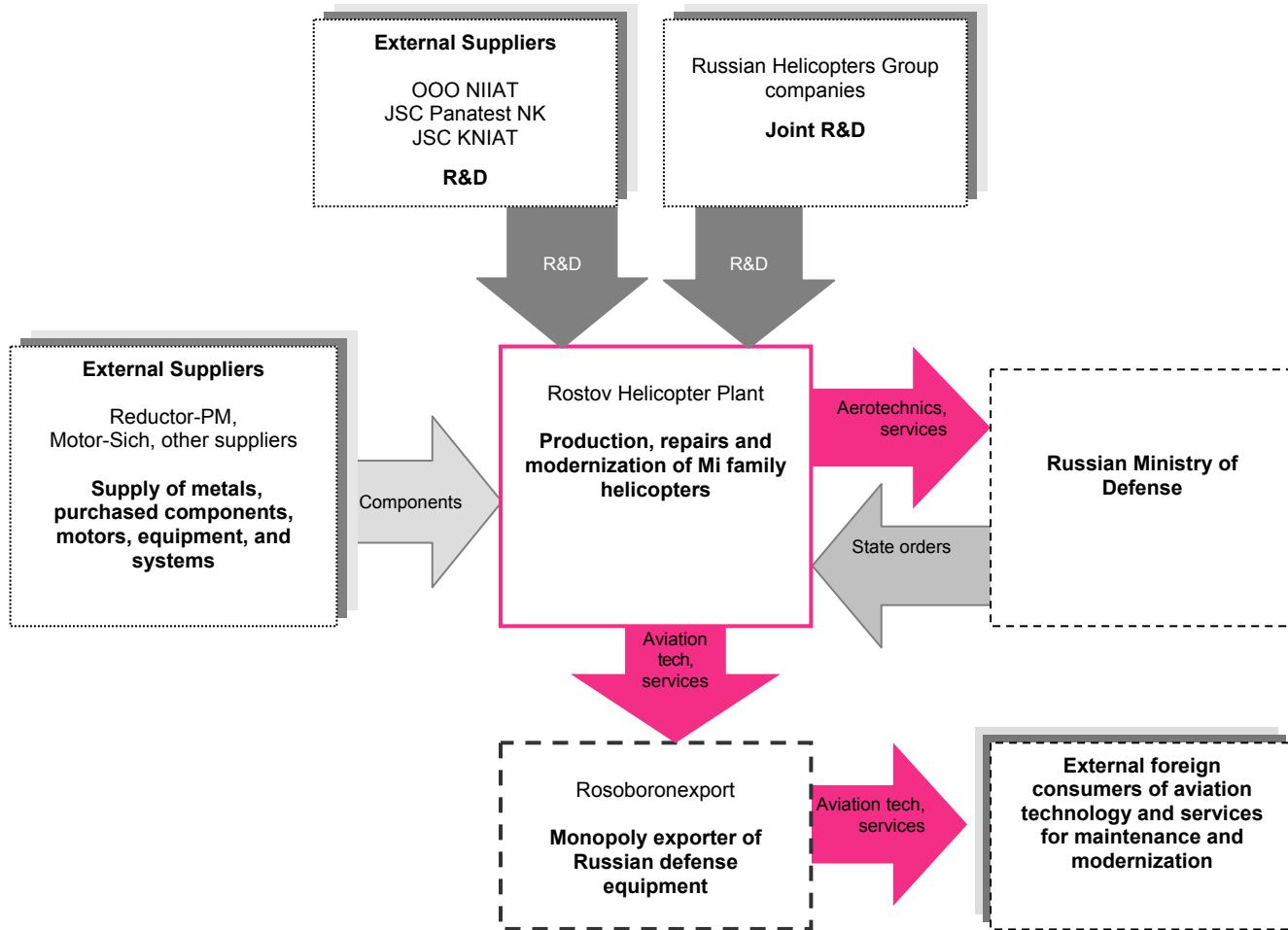
#### RAS MiG financial results under RAS, \$ mn

Indicator	2005	2006	Change
Financials	RAS	Forecasted RAS	
Revenue	245.8	719.5	192.7%
EBITDA	39.8	148.4	272.9%
Net Profit	4.5	74.9	1564.4%
Assets	1 246.3	2 335.4	87.4%
Financial Debt	733.6	871.9	18.9%
Shareholders' Equity	-140.1	-70.5	-49.7%
Financial Debt/Assets	58.9%	37.3%	21.5 p.p.
Financial Debt/EBITDA	18.4x	5.9x	-12.5x
EBITDA Margin	16.2%	20.6%	4.4 p.p.

## Rostvertol Group (2<sup>nd</sup> tier)

Production and servicing of the “Mi” family of helicopters: Mi-26 and 26T, Mi-24 (Mi-35 for exports), and Mi-28H. Revenue in 2007 equaled \$283 mn, and \$93 mn for 1H08.

Ratings: AK&M: A/Stable



Rostov Helicopter Plant (JSC Rostvertol) produces and services heavy transportation, military-transportation and strike helicopters of the Mi family: Mi-26 and 26T, Mi-24 (in its export variation Mi-35), and the Mi-28H.

Rostvertol is the only producer of the Mi-24/Mi-35 military helicopters and heavy transportation helicopter Mi-26T, which gives the company a monopoly at fulfilling state orders for the Russian Ministry of Defence and export contracts. Rostvertol also launched serial production of the fourth generation Mi-28H in October of 2007. This model will become the main general military helicopter for the Russian Air Force. The first helicopters from the new series will begin use in the beginning of 2008.

The main Russian participants on the market for Mi family helicopters include Kazan Helicopter Plant (which produces the Mi-8 military-transportation helicopter and its newer modification, the Mi-17), Ulan-Ude Aviation Plant (Mi-8/17 and the S-25UB attack aircraft), Moscow Helicopter Plant in the name of Mil (design bureau) and Rostvertol (Mi-26/26T, Mi-24/35, Mi-28H).

All assets and financial flows are concentrated in one legal entity — JSC Rostvertol. This company's shares are traded on the RTS.

Rostvertol is the main company which serves the helicopter fleet of Russian defense agencies.

Rostvertol was the winner of the contest held by the Russian Ministry of Economic Development and Trade in 2006 for “Best Russian Exporter” in the “Aircraft-Building” category.

The main sales markets for Rostvertol's products are Russia and the CIS countries, as well as more than 20 other countries, including Greece and states in Eastern Europe, Latin America and South-East Asia.

Rostvertol is part of the Russian Helicopters Group (but does not belong to it legally), the 100% owner of which is United Industrial Corporation Oboronprom holding (a subsidiary of Rosoboronexport, which in turn is part of the global Russian group Rostechnologies, established in November of 2007).

Russian Helicopters Group owns and/or manages the following companies in the sector:

- Rostvertol;
- Moscow Helicopter Plant in the name of M.L. Mil;
- Kamov;
- Ulan-Ude Aviation Plant;
- Kazan Helicopter Plant;
- Moscow Machine-Building Plant "Vpereyed";
- Stupinskoe Machine-Building Production Company;
- Helicopter Service Company.

In the future the helicopter holding will include Kumertauskoe Aviation Production Company and Arsenyevskaya Aviation Company "Progress".

Oboronprom United Industrial Company Holding is a multi-profiled industrial-investment group that was founded in 2002. The main segments of the holding's business are helicopter engineering (management company Helicopters of Russia), engine-building (United Engine-Building Corporation is being created at present), creation of air defence systems (subholding Defensive Systems), leasing (Oboronpromleasing), and other machine-building assets.

The shareholders of Oboronprom United Industrial Company are the Russian Federation (51%), Rosoboronexport (31.1%), the Republic of Tatarstan (15.1%), and Rostvertol (2.8%). The Holding had revenue in 2006 of RUR22.9 bn (\$844 mn).

#### Risks:

- No data about the real owners of Rostvertol; the state's stake in Rostvertol is minimal (less than 4%);
- There is no data about Rostvertol's orders for 2008 and the following years;
- Relatively small size (Rostvertol had revenue in 2007 of \$283 mn).

#### Rosvertol financial results under RAS, \$ mn

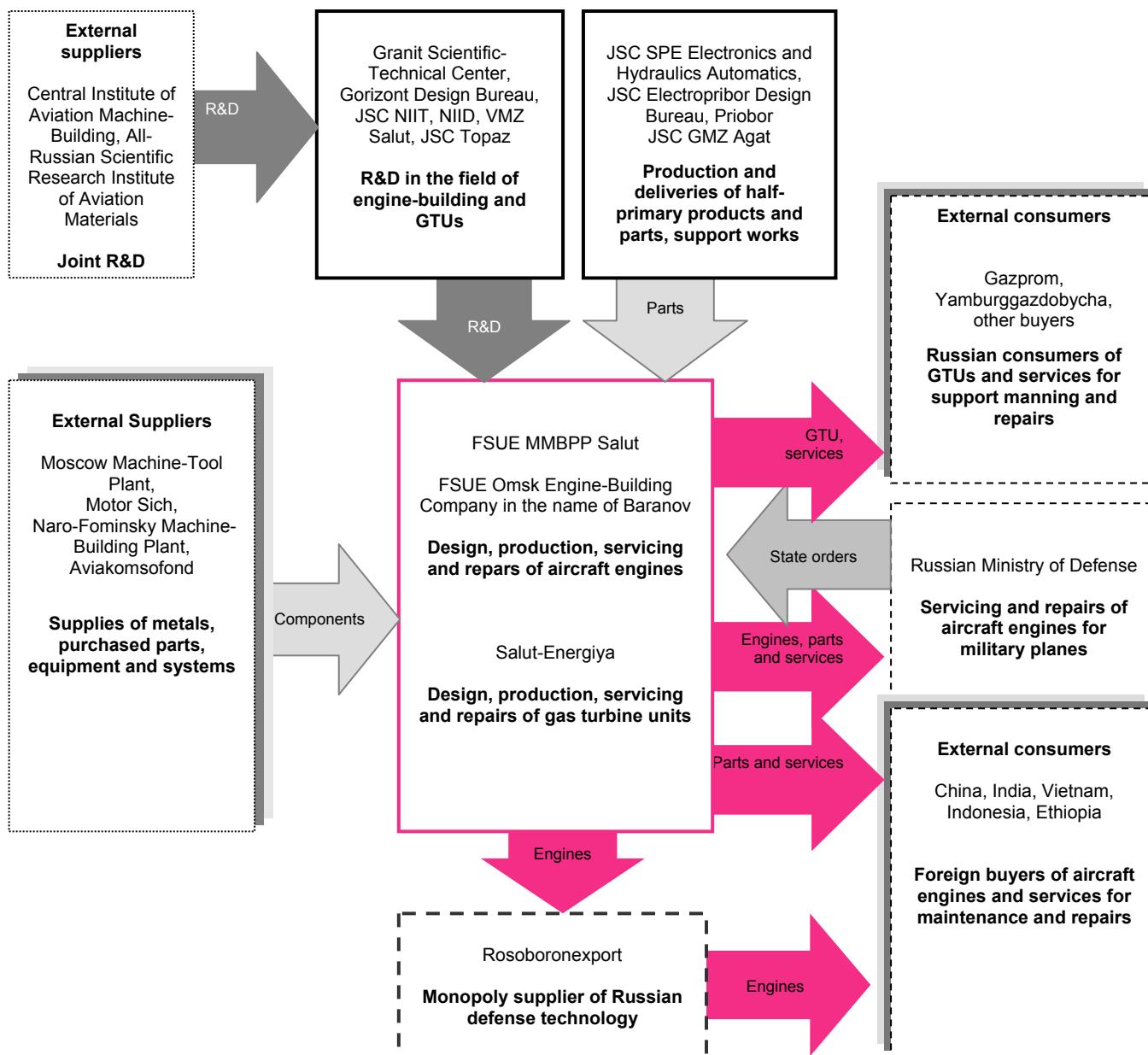
Indicator	2006	2007	Change	1H2008
Revenues	226.4	283.2	25.1%	93.0
Gross Profit	21.9	27.1	23.7%	6.3
Net Profit	11.5	13.2	15.0%	2.6
Assets	260.9	355.3	36.2%	422.7
Financial Debt	80.2	126.5	57.7%	125.2
Shareholders' Equity	105.4	163.9	55.5%	172.4
Financial Debt/Assets	30.7%	35.6%	4.9 p.p	29.6%
Financial Debt/Gross Profit	3.7	4.7	+1	9.9
Gross Profit Margin	9.7%	9.6%	-0.1 p.p	6.8%

## Aircraft Engine Producers

### Salut Group (2<sup>nd</sup> tier)

Design, production and servicing of the AI-31F aircraft engine and its modifications for the Su family of planes; design and production of power installations. The company had 2006 revenue of \$316 mn.

Ratings: None



Business segments of the Salut Group:

- Design, production, maintenance and repair of AI-31F aircraft engines and their modifications for Su family airplanes;
- Repair of AL-21F aircraft engines for Su-24 planes and R-15B-300 engines for MiG-25 planes;
- Production of parts for the D-436T1 engine and its modifications for the Tu-334-100, Tu-134M, and Be-200 airplanes;
- Production of parts for D27 engines for An-70 planes;
- Design and production of electric power units.

About 30% of the Group's 2006 revenue came from sales and servicing of GTUs.

Salut Group consists of the following companies:

- Federal Unitary Enterprise Moscow Machine Building Production Plant Salut (FSUE MMBPP Salut) (the head company of the Group which does R&D, tests, and production of engines);
- Federal Unitary Enterprise Omsk Engine-Building Company in the name of Petr Baranov (production, repairs, and servicing of engines);
- JSC Scientific Production Enterprise of Electronics and Hydraulics Automatics (parts production);
- JSC Electropribor Design Bureau (parts production);
- JSC Gavrilov-Yamsky Machine-Building Plant Agat (JSC GMZ Agat) (parts production);
- Pribor State Company (parts production);
- NIID (R&D);
- Voskresny Machine-Building Plant Salut (R&D);
- Granit Scientific-Technical Center (R&D);
- Gorizont Design Bureau (R&D);
- JSC NIIT (R&D);
- JSC Topaz (R&D);
- JSC Salut-Energiya (GTU production).

The Salut Group is 100% owned by the state.

Important facts about Salut Group:

- One of four aircraft engine holdings is being formed on the base of Salut Group;
- Salut Group is one of the participants of the tender for production of a 5<sup>th</sup> generation aircraft engine;
- According to the Group's information, its equipment fleet has been 80% renovated.

## Risks

- Salut Group main revenue is generated by export sales (thus has currency and political risks);
- The Group has disagreements with NPO Saturn Group over who owns the rights to the Al-31F engine;
- If Salut Group loses the tender for building a 5<sup>th</sup> generation aircraft engine in 2009 it will have a serious influence on the company's future business prospects;
- The amount of the Group's revenue from supplies of aircraft engine and services for the Russian Ministry of Defence is not very large;
- Dependence on counterparties: the company has no alternative suppliers for some components;
- FSUE MMBPP Salut does not publish financial results. The Group has no consolidated financials, including IFRS financials;
- Lack of information about the company's order book for 2008 and the following years.

Salut Group does not publically provide its financials. The only available information about the company's financial results:

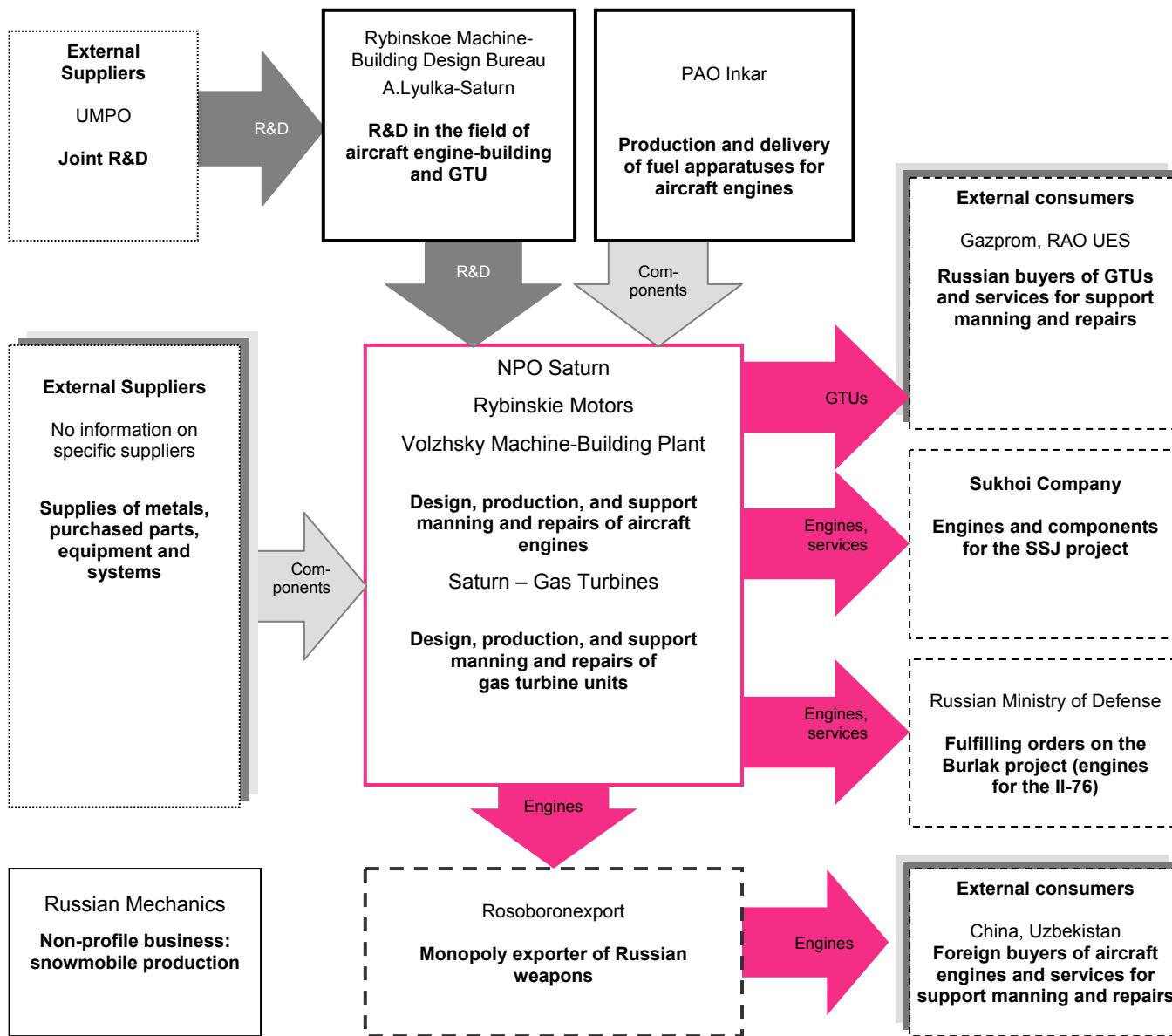
### Dynamics of Salut Group's revenue by segment, \$ mn

Indicator	2005	2006
Engine repairs and supplies of spare parts	40.1	45.5
Export of new engines	230.5	271.1

## NPO Saturn Group (2<sup>nd</sup> tier)

Design of the SaM-146 aircraft engine for the Sukhoi SuperJet-100; design and production of the D-30KP aircraft engine for Il-76 planes, and the Al-55 series of aircraft engines; production of power installations and gas compressor units with a capacity ranging from 4 to 25 MW, R&D for a fifth generation aircraft engine. The company had 2007 revenue of \$406 mn, while 1H08 revenue equaled \$116 mn.

Ratings: None.



### Main business segments of NPO Saturn:

Aircraft engines division:

- Design and production of the SaM-146 engine together with the French company Snecma Moteurs (SAFRAN Groupe) for the Sukhoi SuperJet-100;
- Design and production of the D-30KP engine (Burlak project) for making Il-76 planes according to International Civil Aviation Organization requirements for noise and emissions of hazardous substances. The program calls for modernization of 200 planes, for which about 1000 engines will be needed;
- Design of Al-55 series engines for a new generation of training planes (civil and military);
- R&D at creating an aviation engine for fifth generation military airplanes.

Gas turbines division:

- Production of power units. According to the Group's information, it will need 22 power units for modernizing Russian CHPPs and GRESs;
- Design and production of gas compressor units with a capacity of 4 to 25 MW. A contract has been signed between Gazprom and NPO Saturn on joint operations. This contract calls for NPO Saturn to supply 600 gas compressor units to Gazprom over the next 15 years;

NPO Saturn's order portfolio in 2007 equaled \$400 mn.

Main owners of NPO Saturn Group: company management (50%), state (37%).

Implementation of the SaM-146 project is done with the support of the governments of Russia and France: The French side is represented by Snecma, which has provided financing of €129 mn. The Russian government has provided \$148 mn (RUR3.789 bn) from 2003 to 2008. As of April 1, 2007 state investments into the project equaled \$59 mn (RUR1.5 bn), while in 2007–2008 an additional \$20 mn (RUR500 mn) will be provided. Investments made by NPO Saturn into the project equaled almost \$117 mn at the beginning of April (RUR3 bn).

**Implementation of the SSJ project:** According to the company's plan, NPO Saturn was to start working on test flights of the SSJ100 by the end of 2007, but the company did not manage to fulfill these plans. The new date for the beginning of flight tests, according to various sources, is the end of winter or beginning of spring 2008. According to the media one of the reasons for the delay was that flying tests of the SaM-146 engine were delayed by two months, from October 2007 to December 2007. NPO Saturn's management thinks that the guilty party in the delay is the subcontractor organization Flight-Research Institute in the name of Gromov. Tests of the plane frame were also not finished as of the end of 2007.

**Formation of an aircraft engine-building holding:** It is expected that one of four aircraft engine-building holdings will be built on the base of NPO Saturn Group together with Ufimskoe Engine-Building Production Company (UMPO) and Perm Engine Company. Formation of the holding has been delayed since the state owns 37% of NPO Saturn and only about 12% of UMPO. Yury Lastochkin, the CEO and main owner of NPO Saturn, has stated on numerous occasions that he does not want to give up his controlling stake in the company to the state.

#### Main risks:

- Demand for engines of the SaM-146 project depends directly on demand for the Sukhoi Superjet-100 Russian regional plane;
- Delay in implementing the SSJ project;
- At present NPO Saturn is reducing its volume of repairs of aircraft engines and is investing considerable amounts of funds into R&D. The returns on such investments will be received in 2008–2009, when the SaM-146 and Burlak projects will be implemented;
- According to the media, NPO Saturn Group's management has its own view on the question of forming an aircraft-building holding;
- NPO Saturn's financial condition did not improve over the first 6 months of 2008:
  - Stable increase in debt over the last year and-a-half, high leverage as of 01.10.08;
  - Decrease in revenues in 1H08;
  - Reduction in EBITDA margin.
- Lack of consolidated financials for the Group, including under IFRS.

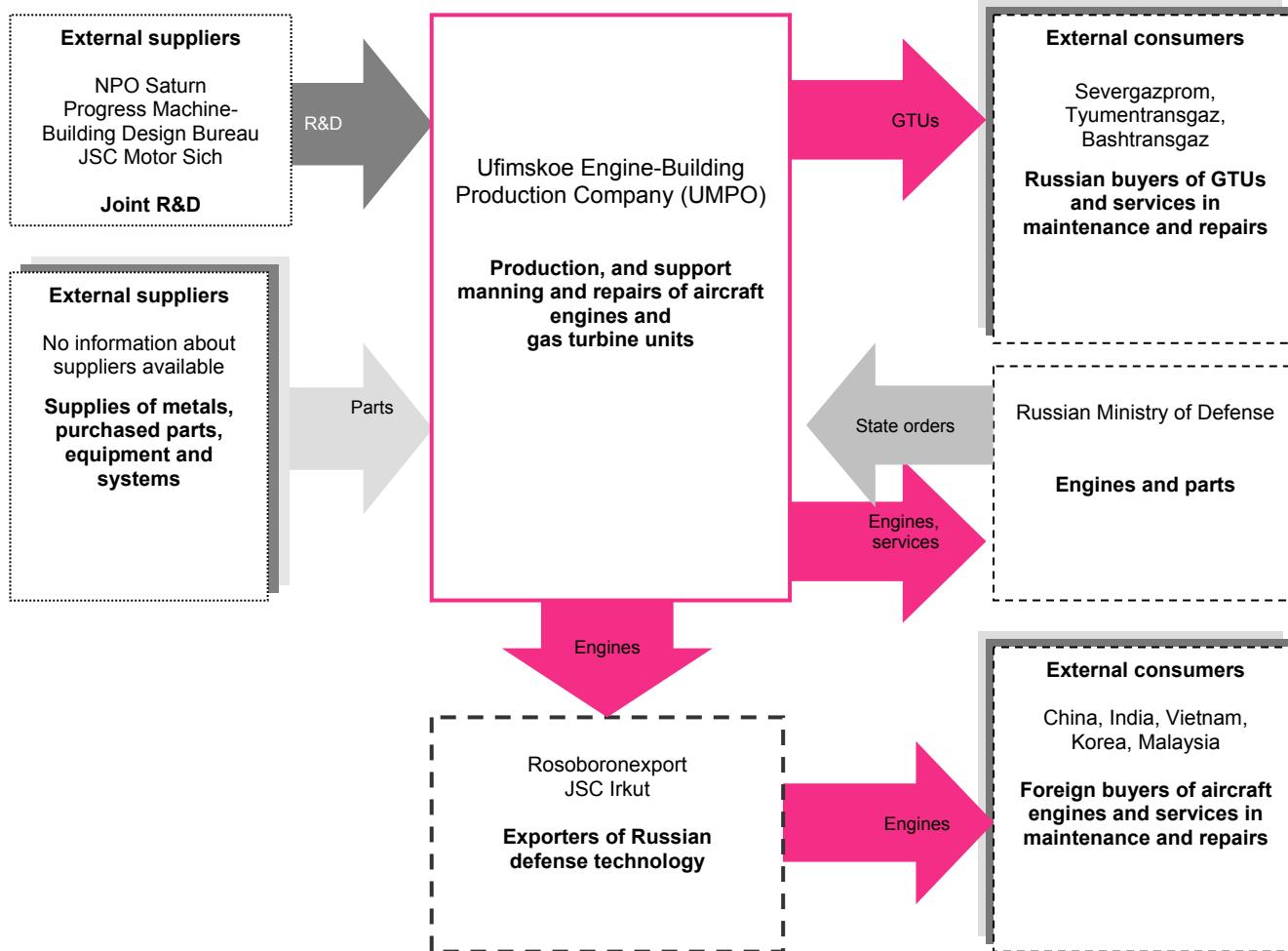
#### NPO Saturn financial results under RAS, \$ mn

Indicator	2006	2007	Change	1H08
Revenues	293.3	405.9	38.4%	116.0
EBITDA	30.6	Gross Profit: 4.8	-84.4%	Gross Profit: 10.3
Net Profit	-6.8	77.5	-	16.2
Assets	824.9	1 198.1	45.2%	1 365.9
Financial Debt	263.8	474.8	80.0%	596.7
Shareholders' Equity	325.9	382.1	17.3%	400.5
Financial Debt/Assets	32.0%	39.6%	7.7 p.p.	43.7%
Financial Debt/EBITDA	8.6x	Debt/Gross Profit: 99.4	-	Financial Debt/Gross Profit: 28.9
EBITDA Margin	10.4%	Gross Profit Margin: 1.2%	-	Gross Profit Margin: 8.9%

## Ufimskoe Engine-Building Production Company (UMPO) (2<sup>nd</sup> tier)

Production of AL-31 and P-195 engines for aircraft of the Su family; production of the D-436 engine for the Tu-334 and Be-200; production of parts for helicopters of the Ka and Mi families; servicing of aircraft engines; production of gas turbine and gas compressor units with a capacity of 16 MW and electric power stations for 20 MW. The company had 2007 revenue of \$620 mn, and 1H08 revenue of \$207 mn.

**Ratings:** None.



### Main business segments of UMPO:

- Production of AL-31F and AL-31FP aircraft engines for Su27, Su-30, and Su-35 planes;
- Production of R-95-SH and R-195 aircraft engines for the Su-25 family of planes;
- Production of D-436T1 aircraft engines for Tu-334 planes;
- Production of D-436TP engines for Be-200 amphibious planes;
- Production of parts for Ka-27, Ka28, Ka32 ad Mi26 helicopters;
- Post-sale servicing and repairs of aircraft engine equipment, upgrading of earlier-produced equipment;
- Production of gas turbine units on the base of the AL-31F engine: gas compressor units with a capacity of 16 MW and block-module power stations with 20 MW capacity;
- Production of other goods (engines for cars, harvesters, snowmobiles, etc.)

According to preliminary data Ufimskoe Engine-Building Production Company had 2007 revenue of \$555 mn (RUR14.189 bn).

At present UMPO is headed by Alexander Artyukhov, while Yury Pustovgarov, the deputy prime minister of the Republic of Bashkirie and minister of industry, investment and innovation policy is the chairman of the BoD.

UMPO's owners as of December, 2007:

21.0% – JSC Ufimskie Motors Management Company;  
 20.0% – NPO Saturn;  
 10.0% – JSC Ufimsky Machine-Building Plant;  
 9.5% – Roinco Enterprises Ltd;  
 12.0% – State.

UMPO's production capacity is located on three production facilities in the Kalininsky region of the city of Ufa and in the Blagoveshensky Region of the Republic of Bashkortostan.

UMPO employs more than 19,000 people.

JSC UMPO works closely with NPO Saturn. The two companies' joint projects include work on creating a 5<sup>th</sup> generation aircraft engine and producing AL-55 engines.

#### Risks:

- According to the mass-media, the state corporation Oboronprom thinks that NPO Saturn's purchase of 19.98% of the shares in UMPO was illegal;
- UMPO Group is closely affiliated with NPO Saturn Group, the management of which, according to the mass-media, has its own view of how the aviation holding should be formed.
- UMPO makes almost no investments into R&D, while its main revenue comes from production of goods designed by NPO Saturn;
- Net profit and margins did not improve in 2007;
- Stable increase in the company's financial debt over the last year and-a-half, high leverage as of 01.07.2008.

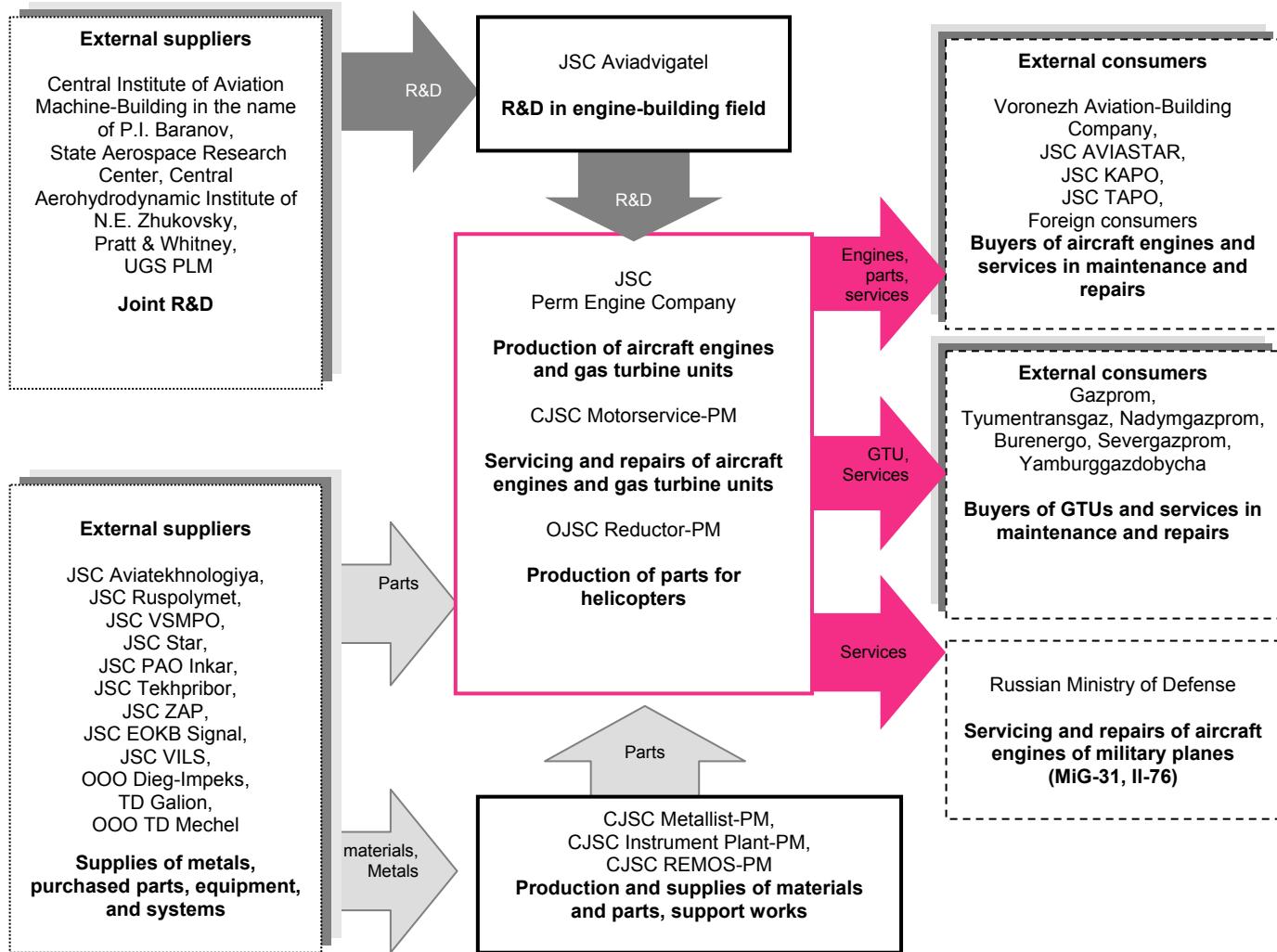
#### UMPO financial results under RAS, \$ mn

Indicator	2006	2007	Change	1H08
Revenues	552.6	619.5	12.1%	207.2
Gross Profit	77.5	4.5	-94.2%	-29.1
Net Profit	54.8	16.7	-69.6%	-35.6
Assets	906.7	1 340.5	47.8%	1 518.5
Financial Debt	319.6	616.1	92.8%	720.3
Shareholders' Equity	443.6	479.6	8.1%	468.4
Financial Debt/Assets	35.2%	46.0%	10.7 p.p.	47.4%
Financial Debt/Gross Profit	4.1	136.9	-	-
Gross Profit Margin	14.0%	0.7%	-13.3 p.p.	-

## Perm Engine Company (PMZ) (3<sup>rd</sup> tier)

Production of PS-90A engines for Tu-204, Il-96, Tu-214 and Il-76 aircraft as well as gas-turbine units with a capacity of 2.5 to 25 MW. The company had 2007 revenue of \$336 mn, while 1H08 revenue equaled \$194 mn.

Ratings: None.



OJSC Perm Engine Company is part of the Perm Motors Group — a vertically-integrated holding which implements the full cycle of design, testing, and serial production of aircraft engines and gas turbine units (GTUs). The PM Group also fulfills maintenance and repairs of aircraft engines and GTUs.

### Perm Motors Group includes:

- CJSC Perm Motors Group Management Company;
- OJSC Perm Motor Plant (engine and GTUs production);
- OJSC Aviadvigatel (design bureau);
- OJSC Reductor-PM (production of helicopter parts);
- CJSC Motoservice-PM (repairs and maintenance of aircraft engines);
- CJSC Metallist-PM (production of materials and spare parts, metal pouring, metal processing);
- CJSC Instrument Plant-PM (production and repairs of specialized instruments);
- CJSC REMOS-PM (repairs and alignment of machine-building equipment);
- OJSC Energetik-PM;
- CJSC Zheleznodorozhnik-PM (transport company).

### Business segments of Perm Motors Group:

- - Production of PS-90A aircraft engines and their modifications;
- - Repairs of PS-90A aircraft engines and their modifications, D-30, TB2-117AG;
- - Production and repairs of gas turbine units with a capacity of 2.5 to 25 MW;
- - Production of spare parts for aircraft engines, GTUs, and helicopters;
- - Design of new aircraft engines and GTUs.

Perm Engine Company is the central company in the Group, and the only Russian producer of 4<sup>th</sup> generation aircraft engines PS-90A and their modifications. These engines are used in the Tu-204-100, Tu-204-300, Il-96-300, Tu-214, Il-76MF, and Il-76TD-90 civil airplanes. The Group delivers engines for:

- Voronezh Aviation-Building Company (Il-96-300 aircraft);
- Ulyanovsk OJSC AVIASTAR (Tu-204 aircraft);
- Kazan OJSC KAPO (Tu-214 aircraft);
- Tashkent OJSC TAPO (Il-76MF aircraft).

OJSC Perm Engine Company produces GTUs with a capacity of 2.5 to 25 MW, and controls from 16 to 50 percent of the market depending on the capacity of the units.

The aircraft engine production and repair segment brought OJSC Perm Engine Company 48.9% of its revenue in 2006, while the GTU production segment brought 17.7% of total revenue. OJSC PMZ prepared 24 new engines in 2006 of the PS-90A family; altogether in 2006 180 PS-90A engines and their modifications were used in 49 planes.

Perm Engine Company's owners: Vneshtorgbank became the Group's owner in 2005; and AFK Sistema became the owner in the fall of 2006. As of December 7, 2007 United Industrial Corporation Oboronprom holding completed negotiations for acquiring PM Group from AFK Sistema. Perm Motors Group will enter one of the four engine building holdings which are being formed at present.

### Risks:

- The business of Perm Motors Group depends to a significant degree on having orders from airlines for Russian-made airplanes (Il-96-300, Tu-204, Tu-214, Il-76MF) on the back of greater competition from Russian aviation builders with world producers (Boeing and Airbus);
- Dependence on counterparties: the company has no alternative suppliers for some parts;
- Lack of consolidated financials for the Group, including IFRS financials;
- **High leverage as of 01.07.2008;**
- Airplanes of the Tu-204 and Tu-214 series can employ both motors made by the Perm Motors Group and power units made by large foreign competitors (Rolls-Royce);

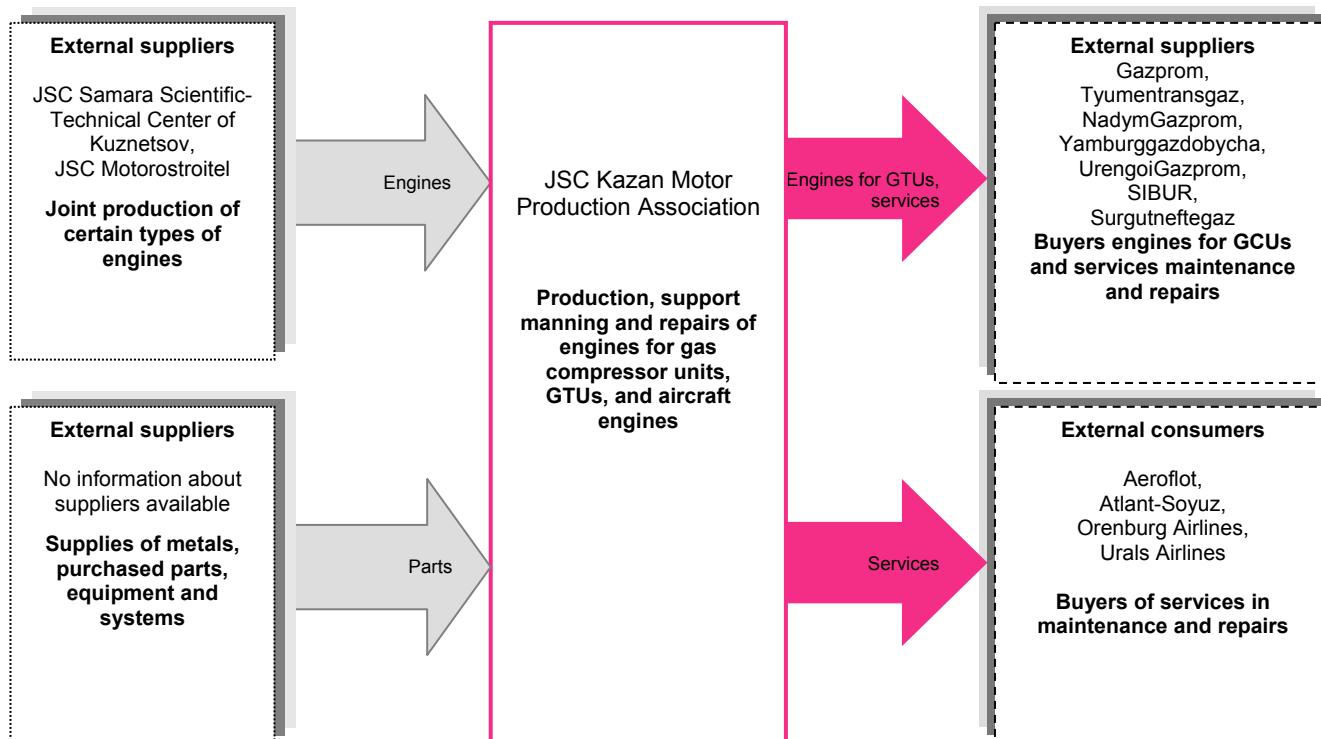
### Perm Engine Company financial results under RAS, \$ mn

Indicator	2006	2007	Change	1H2008
Revenues	273.4	335.9	22.8%	194.5
Gross Profit	11.6	15.7	35.0%	8.2
Net Profit	3.0	2.4	-19.1%	0.1
Assets	265.4	394.2	48.5%	511.8
Financial Debt	107.6	120.5	12.0%	166.0
Shareholders' Equity	49.3	54.2	10.0%	57.5
Financial Debt/Assets	40.5%	30.6%	-10 p.p.	32.4%
Financial Debt/Gross Profit	9.3x	7.7	-1.5	10.2
Gross Profit Margin	4.2%	4.7%	0.4 p.p.	4.2%

## OJSC Kazan Motor Production Association (KMPO) (3<sup>rd</sup> tier)

Production of engines for gas compressor units and the units themselves (more than 70% of revenue), Al-22 aircraft engines for Tu-324 and Yk-48 airplanes; NK-93 engines for the Tu-204 and Tu-214 models; NK-93 for the Tu-204 and Tu-214 aircraft; and NK-86 engines for the Il-86. The company had 2007 revenue of \$179 mn, while 1H08 revenue equaled \$96 mn.

Ratings: None.



### Main business segments of OJSC KMPO:

- Production of engines for gas compressor units and the gas compressor units themselves;
- Production of Al-22 aircraft engines for Tu-324 and Yk-48 airplanes;
- Production of NK-93 aircraft engines for Tu-204 and Tu-214 airplanes;
- Production of HK-8-2Y aircraft engines for Tu-154B airplanes;
- Production of HK-86 aircraft engines for Il-86 airplanes;
- Production of aircraft engines for small planes;
- Production of goods for civil use.

Sales of engines for gas compressor units generate more than 70% of the company's revenue.

OJSC KMPO has three production facilities located in cities of the Republic of Tatarstan, such as Kazan (the largest production facility), Zelenodolsk, and Buinsk.

OJSC KMPO is capable of fulfilling the whole cycle of works for producing and repairing gas turbine aircraft engines, engines for gas compressor stations, turbogenerators of electric power plants, hydromechanical shifters, and agricultural equipment. The plant includes 13 production facilities (including a pouring plant, forge-and-press, metal processing and assembly-testing facilities).

OJSC KMPO's ownership structure includes:

- 44.0% - OJSC Svyazinvestneftekhim, controlled by the government of Tatarstan (Tatarstan also owns a "golden share");
- 14.0% - CJSC Invest-Group;
- 14.0% - CJSC Regional Financial Company;
- 12.6% - OOO Holding Company YuTK.

More than 30% of the gas transportation flows in Russia are made using engines produced by KMPO (more than 700 gas compressor units around Russia and its neighboring countries). In particular, 45% of the engines used by Gazprom are produced by KMPO.

It is expected that OJSC will enter the aircraft engine-building holding being formed on the base of NPO Saturn and OJSC UMPO.

#### Risks:

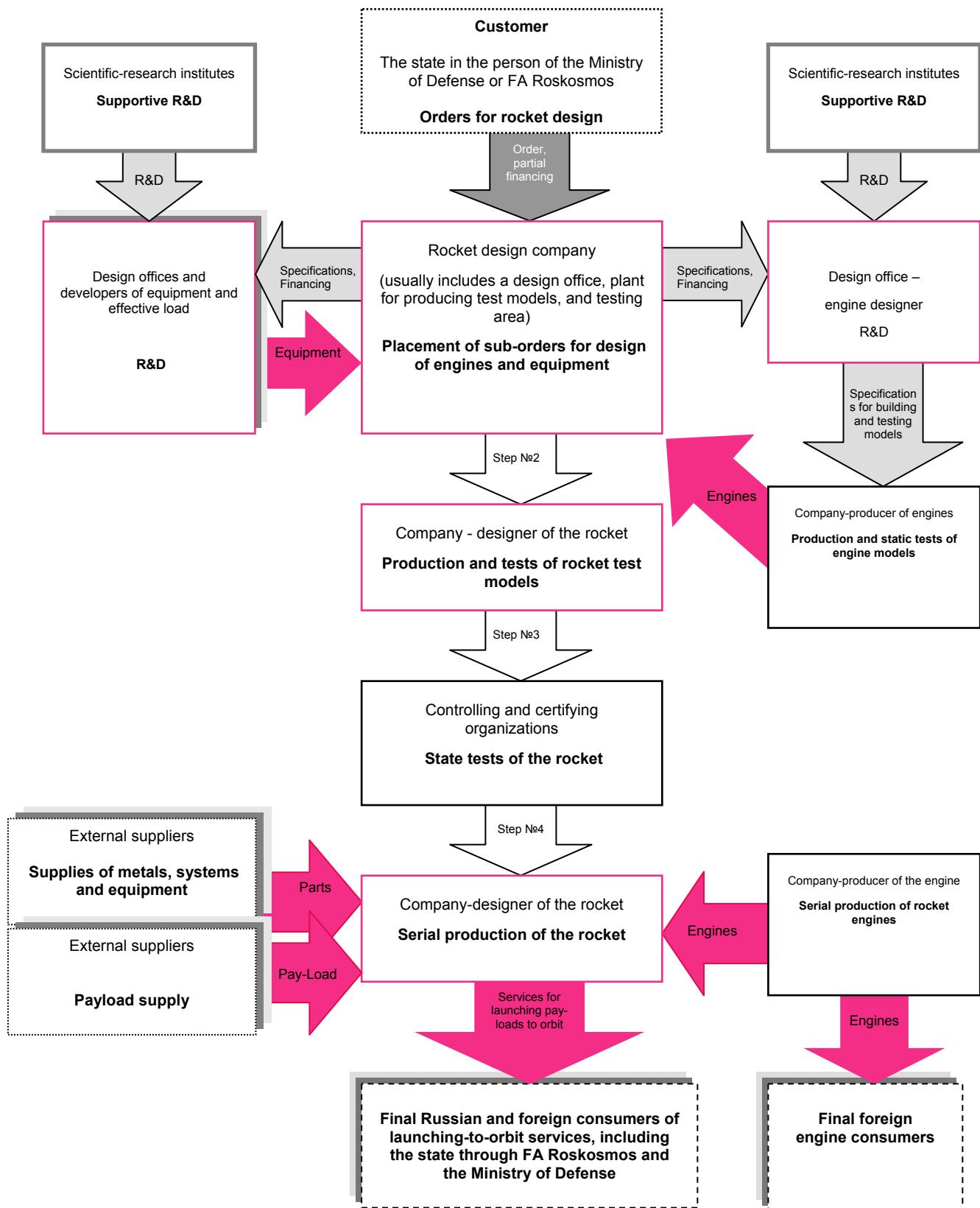
- Dependence of KMPO's business on its largest client — Gazprom;
- Weak prospects for development of the aircraft engine production segment;
- High level of competition with other producers of gas transportation equipment (Perm Motors, NPO Saturn, Motorostroitel, UMPO, Samara Scientific-Technical Complex in the name of N.D. Kuznetsov, FSUE MMBPP Salut, NPO Iskra, Special Machine-Building Design Bureau);
- Relatively small business size (assets as of 01.10.07 of \$171 mn, 9M07 revenue of \$96 mn).

#### KMPO financial results under RAS, \$ mn

Indicator	2006	2007	Change	1H08
Revenues	153.8	178.8	16.2%	82.8
EBITDA	19.9	Gross Profit: 26.2	31.6%	Gross Profit: 0.8
Net Profit	6.2	9.2	48.3%	6.5
Assets	134.1	212.8	58.7%	250.6
Financial Debt	21.4	51.3	139.9%	74.6
Shareholders' Equity	91.4	104.2	14.0%	114.8
Financial Debt/Assets	15.9%	24.1%	8.2%	29.8%
Financial Debt/EBITDA	1.1x	Financial Debt/Gross Profit: 2.0	88.6%	Financial Debt/Gross Profit: 49.6
EBITDA Margin	12.9%	Gross Profit Margin: 14.6%	1.7%	Gross Profit Margin: 0.9%

## Rocket engine producers

### Business processes of rocket engine producers



## Main features of the rocket engine production sector

Just like an airplane, a rocket consists of three main parts: the frame with fuel containers and necessary equipment, engines, and payload (manned spacecraft, freighters, modules for the ISS, satellites for various purposes, etc.).

Rocket production is a science-intensive sector. Besides the designers and producers of main rocket parts there are also a large number of design offices, scientific-research institutes, and companies which design and manufacture parts for space technology.

The leading Russian companies in the sphere of rocket design for civilian use are FSUE State Scientific-Production Rocket-Cosmic Center CSDB (Central Specialized Design Bureau) Progress (which specializes in the Soyuz and Soyuz-2 rockets production), FSUE Khrunichev State Research and Production Space Center (Proton rockets production), and S.P. Korolov Rocket and Space Center Energiya (manned spacecraft, Energiya rockets with Buran piloted spacecraft, interplanetary station, etc.).

The largest Russian rocket engine producers are Proton – Perm Motors, Motorostroitel, and NPO Energomash. The latter has an almost monopoly position in Russia for production of engines for the primary stage of carrier rockets. Proton – Perm Motors produces RD-275 engines which are used in the first stage of the main Russian heavy-class carrier rocket – Proton. Motorostroitel builds RD-107 and RD-108 engines, which are used in the primary and secondary stages of the main middle-class Russian carrier rocket – Soyuz. NPO Energomash is actually the designer of these rockets, however, during the Soviet years it transferred the technological documentation for production of these engine types to other companies. Starting from 2007–2008 Proton and Soyuz carrier rockets will be gradually replaced by Angara rockets, which are more effective. The engines for Angara rockets will be made by Energomash.

The rocket engine business has its own specific traits. In particular, the financial results of rocket engine companies are quite dependent on having orders from rocket producers. Demand for new rockets in turn is determined by the number of bids made by state or commercial structures for launching spacecraft into orbit. Thus the success of rocket engine producers is closely linked to the Russian Federation's policy in the field of developing circumterrestrial space, as well as on the analogous programs of other countries where local rocket producers use Russian engines.

Other particularities of the rocket engine industry include the “aging” of the sector's employees, the large average weight of R&D in total costs, high sensitivity to metals and alloys prices, and unevenness in revenues (the majority of revenue comes from the final payment of the contract).

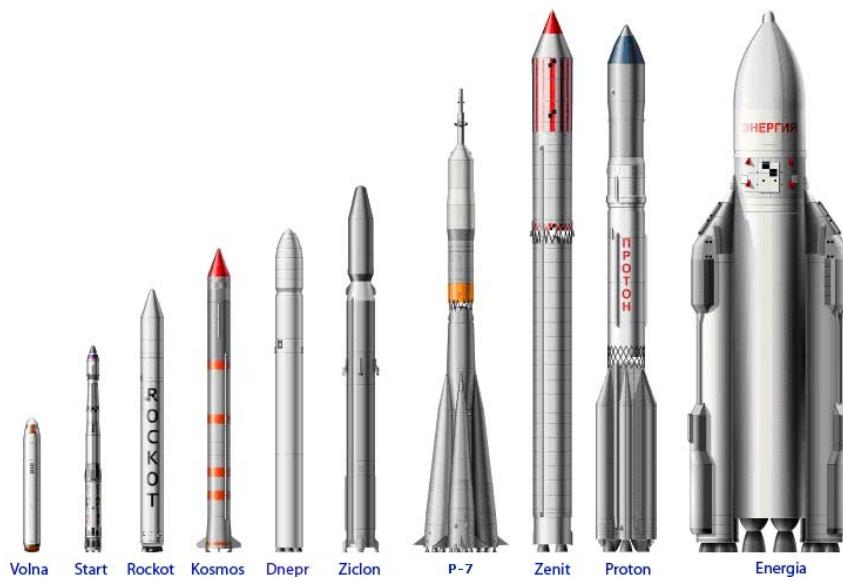
Compared to aircraft engine building, the products made by rocket engine manufacturers have a narrow specialization: as a rule rocket engines are meant to be used in only one type of carrier rocket, while aircraft engines can be installed in various plane models.

## For info:

Space rockets subdivide into 3 classes, which are light, middle and heavy. These classes do not compete with each other and are used for different purposes.

**Light class rockets** are used for launching of satellites with max weight of 2-4 tonnes into low and middle circular circumterrestrial orbits:

- Kosmos is a two- or three-stage rocket which was developed by GKB Yuzhnoye in the name of MK Yangelya and produced by PO Polet. The rocket weighs up to 109 tonnes.
- Cyclon is a two- or three-stage rocket which was developed by GKB Yuzhnoye in the name of MK Yangelya. This rocket is used for launching satellites into low and middle circular and elliptical circumterrestrial orbits. The rocket weighs up to 191 tonnes.
- Rockot is a three-stage rocket which was developed by GNKPC in the name of Khrunichev based on the ballistic missile RS-18. The rocket weighs up to 107 tonnes. This rocket is used for launching satellites with max weight up to 2 tonnes.
- Dnepr is a three-stage rocket which was developed by GKB Yuzhnoye in the name of MK Yangelya on the base of ballistic missile SS-18. The rocket weighs 207 tonnes. This rocket is used for launching satellites with max weight up to 4 tonnes.



**Middle class rockets** are used for launching of satellites and manned spacecrafts into low, middle and high circular and elliptical circumterrestrial orbits:

- Zenit is two- three-stage rocket which is used for launching satellites and unmanned spacecrafts with max weight up to 7.5 tonnes into low, middle circular and elliptical circumterrestrial orbits as well as sun-synchronous orbits. The launching mass of the rocket is up to 470 tonnes. The rocket is produced by GP PO Yuzhniy Machinostroitelniy Zavod in the name of A.M. Makarov and was developed by GKB Yuzhnoye in the name of M.K.Yangelya.
- Rockets of the R-7 family, including Soyuz-type rockets, have three or four stages, and weigh up to 313 tonnes. These rockets were developed by GNP RKC CSKB-Progress and RKK Energia and were produced by GNP RKC CSKB-Progress. These rockets are capable of launching into orbit satellites as well as Soyus and Progress manned spacecraft with max weight up to 7.5 tonnes.

## Heavy class rockets:

- Proton-M rocket has four stages and a launching mass of 700 tonnes. The Proton-M rocket is used for launching spacecraft with max weight up to 15 tonnes into various circumterrestrial orbits including spacecraft with max weight up to 7.5 tonnes into geostationary orbit as well as into fly-away trajectories. The rocket is produced by GP PO Yuzhniy Machinostroitelniy Zavod in the name of A.M. Makarov and was developed by GNKPC in the name of Khrunichev.
- The Energia rocket has three stages and a launching mass of 2390 tonnes. It can launch spacecraft with max weight up to 100 tonnes into orbit with any azimuth. The Energia rocket is produced by RKK Energia.

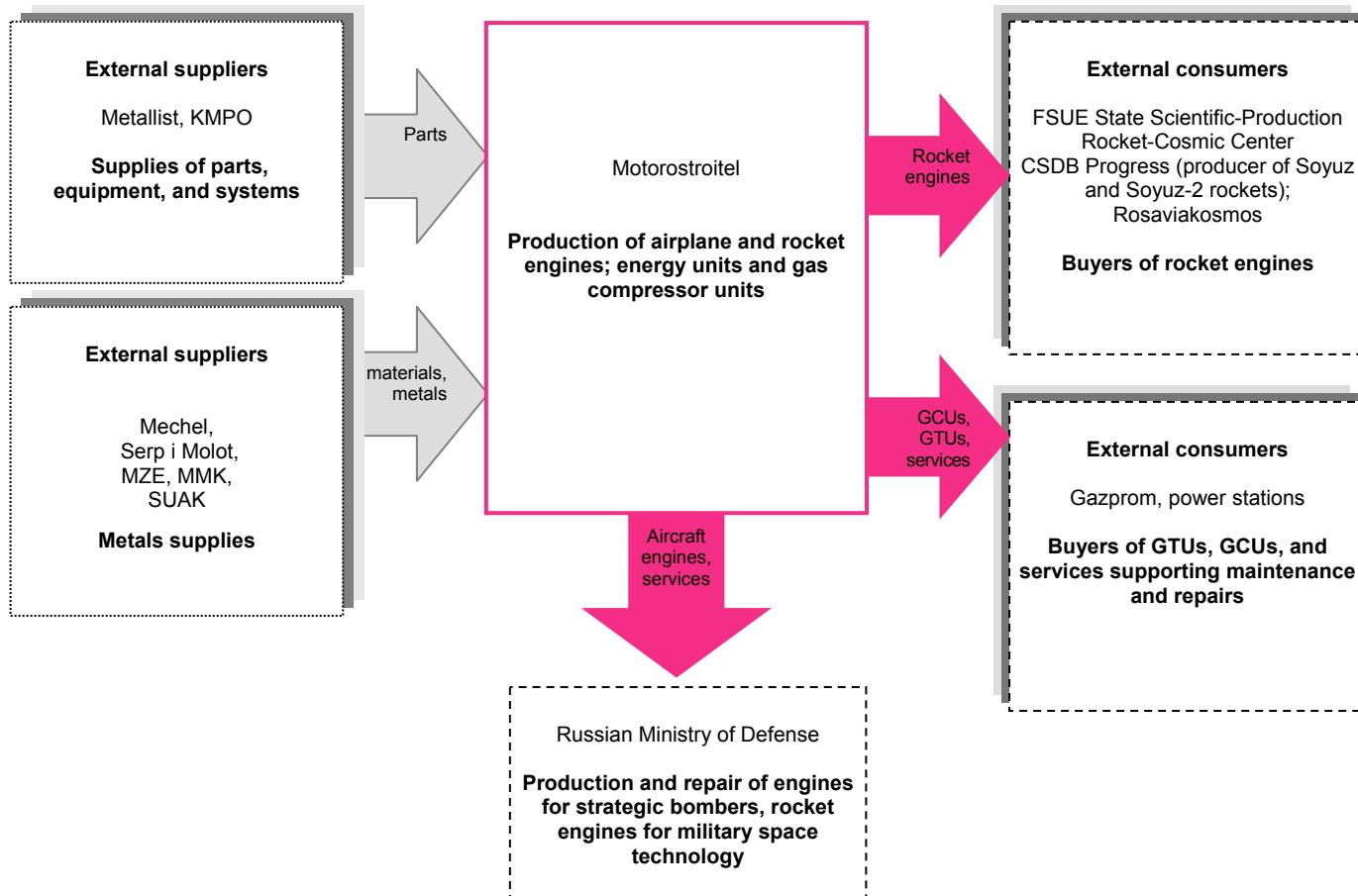
**A total of 10 modifications of Soyuz rockets, 6 Proton-M rockets and 2 Dnepr rockets were launched in 2007.**

## Rocket engine producers

### Motorostroitel (3<sup>rd</sup> tier)

The company's main business is production of rocket engines for Soyuz and Soyuz-2 rockets made by FSUE CSDB Progress. The company also performs engine repairs for Russian Air Force strategic aviation (Tu-95; Tu-22M3; Tu-160); it produces and provides technical servicing of gas turbine engines; and produces and repairs power stations with 10 and 25 MW capacity. The company had 2007 revenue of \$121 mn.

**Ratings:** None



#### Motostroitel's 2006 revenues came from the following sources:

- 41.5%: Production of rocket engines for rockets of the Soyuz and Progress families;
- 28.6%: Production and technical servicing of power and gas compressor units;
- 20.2%: Production and repair of engines for strategic aviation;
- 9.7%: Other business types.

According to Motorostroitel, all manned and unmanned cargo spaceships, as well as 60% of all satellites launched within the Russian national space program were brought into orbit using engines made by Motorostroitel.

Motorostroitel's main clients are:

- The Federal Unity Enterprise State Scientific-Production Rocket-Cosmic Center CSDB Progress (rocket engines);
- Gazprom (equipment for gas compressor units);
- Russian Ministry of Defense (production and repairs of engines for strategic aviation, rocket engines for military space technology);
- Power generating companies.

Motorostroitel has a monopoly at producing engines for Soyuz and Progress series rockets, as well as engines for some types of airplanes (the Tu-160, Tu-95MS, and Tu-22M3 strategic bombardiers). The company is in the list of strategic Russian companies.

The issuer's whole business is focused in one legal entity — Motorostroitel, in which the state owns 50.7% of authorized capital.

Motorostroitel will enter the state engine-building holding created together with Samara Scientific-Technical Complex in the name of N.D. Kuznetsov, Special Design Bureau for Machine-Building, NPO Saturn, UMPO, and Perm Motor Plant.

#### Risks:

- Motorostroitel is a niche company that produces a unique product (power units for rockets and military planes);
- Strong dependence on clients — the majority of the company's production is bought by 4 consumers — FSUE CSDB Progress, The Russian Ministry of Defense, Gazprom, and power sector companies;
- The company's financial status is determined by the Russian budget and the state policy in the field of defense spending and the state space program;
- Motorostroitel's business depends on prices for nickel, the main material used by the company in finished products in terms of price, and specifically nickel-containing heat-proof and stainless steels. Prices for these nickel products increased by 85% in 2005–2006;
- Deterioration of the plant's fixed assets equals 61%;
- According to Rosstat, Motorostroitel held 1<sup>st</sup> place in the Samara Oblast in terms of unpaid salaries as of 01.01.08 (RUR59 mn).

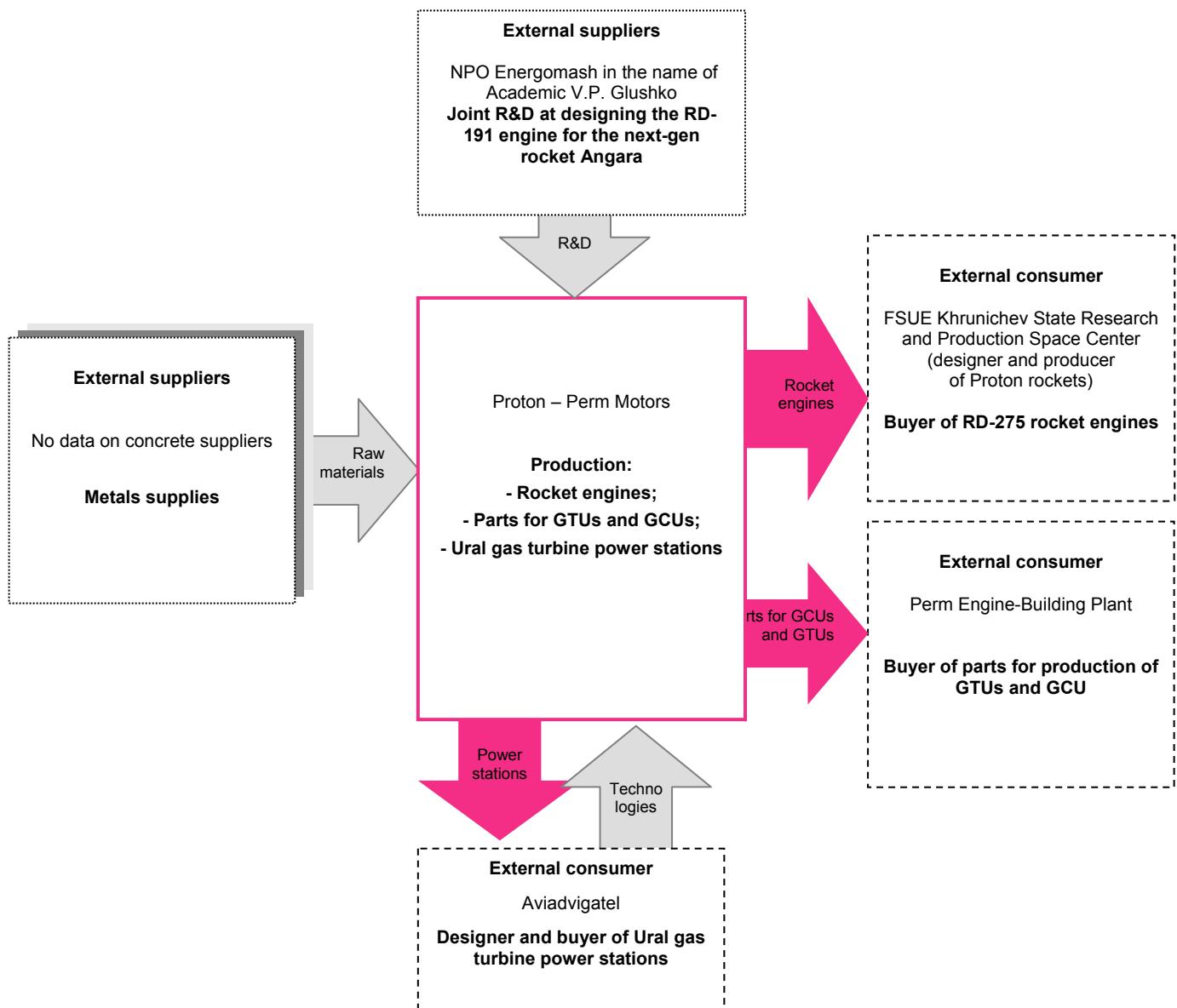
#### Motorostroitel financial indicators under RAS, \$ mn

Indicator	2006	2007	Change
Revenues	111.3	121.7	9.3%
Gross Profit	20.3	11.0	-46.0%
Net Profit	0.3	-1.3	-530.5%
Assets	199.3	230.6	15.7%
Financial Debt	80.0	99.8	24.8%
Shareholders' Equity	44.7	45.8	2.5%
Financial Debt/Assets	40.2%	43.3%	3.2 p.p.
Financial Debt/Gross Profit	3.9x	9.1	+5.1
Gross Profit Margin	18.3%	9.0%	-9.2 p.p.

## Proton – Perm Motors (3<sup>rd</sup> tier)

Production of RD-275 engines for Proton class rockets, which are the main means for transporting heavy satellites to their geostationary orbit and for transporting modules for ISS (MKS). This production accounts for up to 80% of the company's revenue. The company had 2007 revenue of \$114 mn, while 1H08 revenue equaled \$79 mn.

Ratings: None



Proton – Perm Motors (further Proton-PM) is a monopoly producer of RD-275 engines for heavy class Proton-K and Proton-M rockets, the main means of launching heavy telecommunications satellites to their geostationary orbit and delivering modules to the ISS. This product is the company's main revenue provider at up to 80% of yearly revenue.

Demand for Proton-PM products (RD-275 engines) is formed by the Russian Space Program and the program for commercial launches through the state company FSUE Khrunichev State Research and Production Space Center (the only buyer of RD-275 engines).

**Information:** FSUE Khrunichev State Research and Production Space Center is a state entity that works on design, production, and launches (commercial and state) of Proton carrier rockets, and which has been the main developer of the new Angara carrier rockets since the beginning of the 1990s. Exploitation of Proton rockets will continue until 2015 (according to other data until 2009), after which FSUE Khrunichev State Research and Production Space Center will completely replace them with Angara family carrier rockets with Stage 1 RD-191 engines.

Proton-PM produces RD-191 engines together with their designer — NPO Energomash in the name of Academic V.P. Glushko.

State orders for rocket launches are fulfilled by FSUE Khrunichev State Research and Production Space Center together with FA Roscosmos and the Russian Ministry of Defense, while commercial launches are organized by two subsidiary companies of Khrunichev State Research and Production Space Center: International Launch Services and Eurocots.

Proton-PM's sales of RD-275 engines are stable, and are determined by orders made by FSUE Khrunichev State Research and Production Space Center, which in turn places orders based on the federal program of cosmic launches, which is made several years in advance, and on the commercial launch schedule formed by International Launch Services 1–2 years in advance.

Proton-PM produced 8 engine sets a year (6 units in each set) until 2007. The company's order portfolio increased to 10 sets in 2007, and to 12 sets in 2008.

In the future competition in the field of heavy rocket launches will become stronger due to the appearance of new producers on the market and the creation of new carrier rocket modifications (in Europe: Ariane-6; in Japan: H2A204; in China: CZ-5/504). Nevertheless, over the next few years the main market players will continue to be Russia (Proton/Angara-5 rockets), the USA (Atlas-5/Delta-4) and the European Space Agency (Ariane-5 rocket).

87% of Proton-PM shares belong to the state through FSUE Khrunichev State Research and Production Space Center — the main consumer of Proton-PM products. The second large shareholder is the American company Pratt&Whitney.

Proton-PM has a closed technological cycle from pouring of steel and aluminum to the complete series of tests on finished goods.

Proton-PM has been included in the list of strategic companies of Russia since 2004 and is part of FA Roscosmos.

Proton rockets cover 30–40% of world demand for heavy-class rocket launches.

### Risks:

- Low diversification of the company's product line (80% of revenue comes from one product: RD-275 engines);
- The only consumer of the company's goods is FSUE Khrunichev State Research and Production Space Center, in other words the stability of Proton-PM's business depends on demand for its services from this client. The volume of demand from FSUE Khrunichev State Research and Production Space Center depends in turn on Russia's space policy and having orders for commercial launches;
- Strengthening of competition in the sphere of launches of heavy rockets over the next 3–5 years;
- High competition in the field of production of gas turbine units (such products are made by the main aircraft engine-building companies in Russia and the CIS: NPO Iskra, NPO Saturn, Motorostroitel, Salut, Motor Sich (Ukraine) and others);
- Relatively small business size (assets as of 01.10.07 equaled \$141 mn, 9M07 revenue equaled \$80 mn);
- Unequal distribution of revenue over the course of the year.

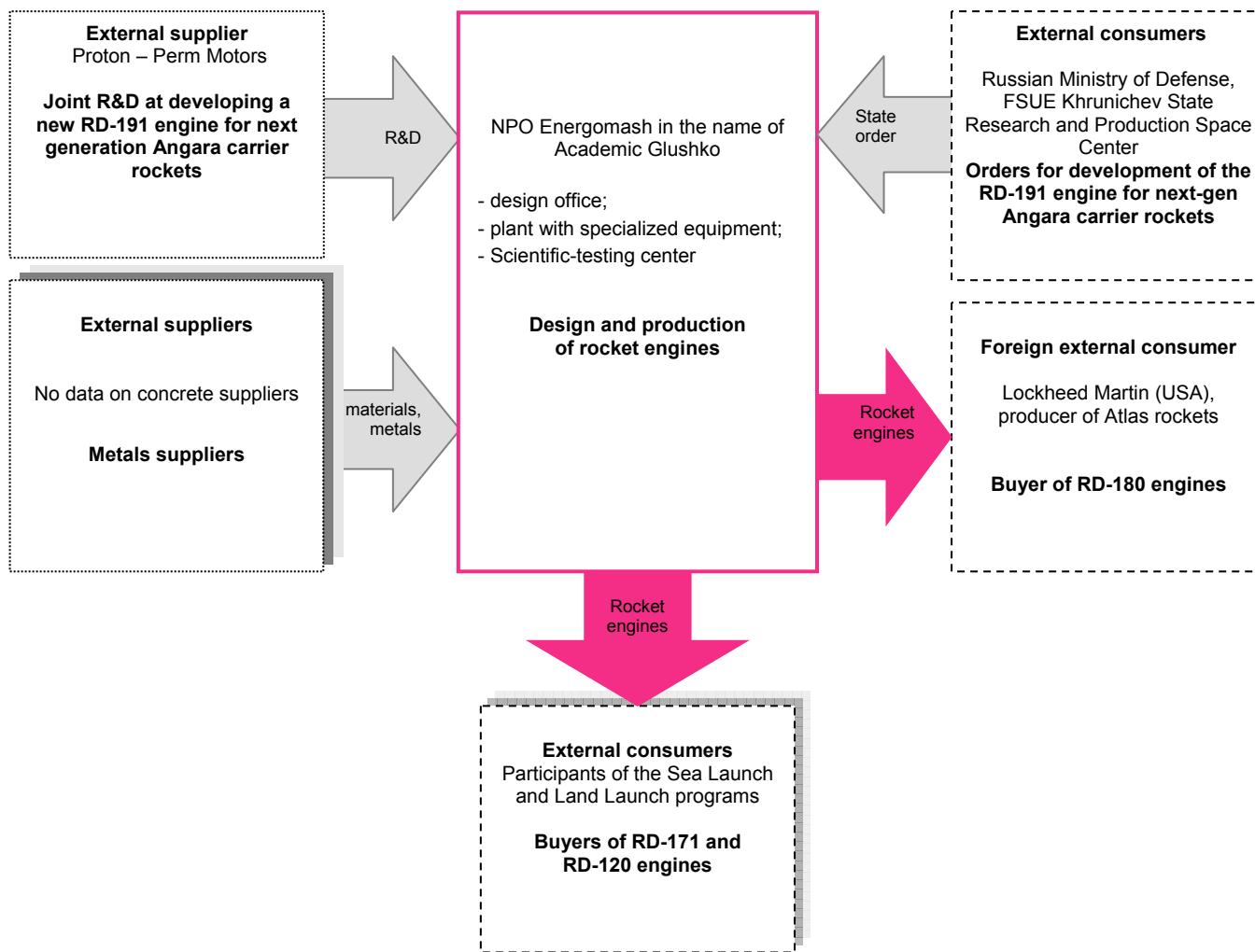
### Proton – Perm Motors financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H2008
Revenues	82.4	114.3	38.7%	71.8
Gross Profit	9.8	12.6	29.0%	4.7
Net Profit	2.4	4.9	103.8%	0.4
Assets	110.8	155.4	40.3%	191.8
Financial Debt	75.8	55.3	-27.0%	102.8
Shareholders' Equity	22.6	27.4	21.0%	29.6
Financial Debt/Assets	68.4%	35.6%	-32.8 p.p.	53.6%
Financial Debt/Gross Profit	7.7x	4.4	-3.3	11.0
Gross Profit Margin	11.9%	11.1%	-0.8 p.p.	6.5%

## NPO Energomash in the name of Academic V.P. Glushko (3<sup>rd</sup> tier)

Design and production of liquid-fuel rocket engines for Soyuz, Molniya, Kosmos, Proton, and Zenit carrier rockets; design of the future RD-191 liquid-fuel rocket engine for the Angara family of carrier rockets. The company had 2007 revenue of \$106 mn.

Ratings: None



NPO Energomash in the name of Academic V.P. Glushko (Energomash) is one of the world leaders for design and production of liquid rocket engines (LRE) and is the only Russian company in the sector with the full technological cycle from R&D to production of finished products.

Altogether NPO Energomash has designed more than 50 types of liquid rocket engines. These engines were used in the launch of the first satellite and the launch of the first human flight into space.

At present liquid engines produced by NPO Energomash are used in Soyuz, Molniya, Progress, Kosmos, Proton, and Zenit carrier rockets.

Energomash is factually a monopolist on the domestic market for LRE design, as well as the only designer and producer of engines sold for export. Energomash engines are used in about 40% of all world commercial rocket launches.

Energomash has received orders for about 100 rocket engines to be built by 2015. The company's structure of order contracts as of the beginning of 2008 consisted of 35% state military defense contracts (work on the RD-191 engine for the new Russian Angara rocket), with the rest coming from two international projects on the base of the RD-180 engine. The company also has a design project on the base of the RD-171 engine for two other programs — the Sea Launch and the Land Launch, which are intended to use Zenit rockets.

Energomash's main current business segments are:

- Design of the RD-191 engine for Angara carrier rockets for the Russian Ministry of Defense in accordance with the specifications provided by FSUE Khrunichev State Research and Production Space Center. The Angara project is very promising thanks to the module approach to assembling acceleration stages, which makes it possible to lower the cost of launching the payload into space. NPO Energomash already has received orders for 10 RD-191 engines per year through 2011. After that production of RD-191 engines may increase to up to 70 engines per year.
- Production of RD-180 engines for Atlas carrier rockets. A contract has been signed with Lockheed Martin for delivery of 101 RD-180 engines for a total cost of about \$1 bn by 2015. Work done on this program is one of the most important export segments of Energomash's business.

The RD-191 engine for the Angara project will undergo development testing in February of 2008, while the company will also make its final development testing this year, after which it will begin serial production of the engine.

Energomash is part of the Federal Agency Roskosmos. The program for development of Russian space exploration, which has been planned for the next 10 years, calls for using state financing of about \$20 bn. About 40 space shuttles are planned to be launched by 2010.

80% of NPO Energomash shares belong to the state.

Energomash is practically a monopoly producer in Russia of engines for first stage carrier rockets. Another two companies have similar production capacity in Russia:

- Proton-Perm Motors produces RD-275 engines which are used in the first stage of the main heavy-class carrier rocket in the Russian Federation: Proton;
- Motorostroitel produces RD-107 and RD-108 engines which are used in the first and second stages of the main middle-class Russian carrier rocket: Soyuz.

NPO Energomash is actually the designer of these models, however, the technologies used to manufacture these rockets were given to other companies during the Soviet period. Starting in 2007–2008 Proton and Soyuz rockets will be gradually replaced by more effective Angara rockets, the engines for which will be produced by Energomash.

### Risks:

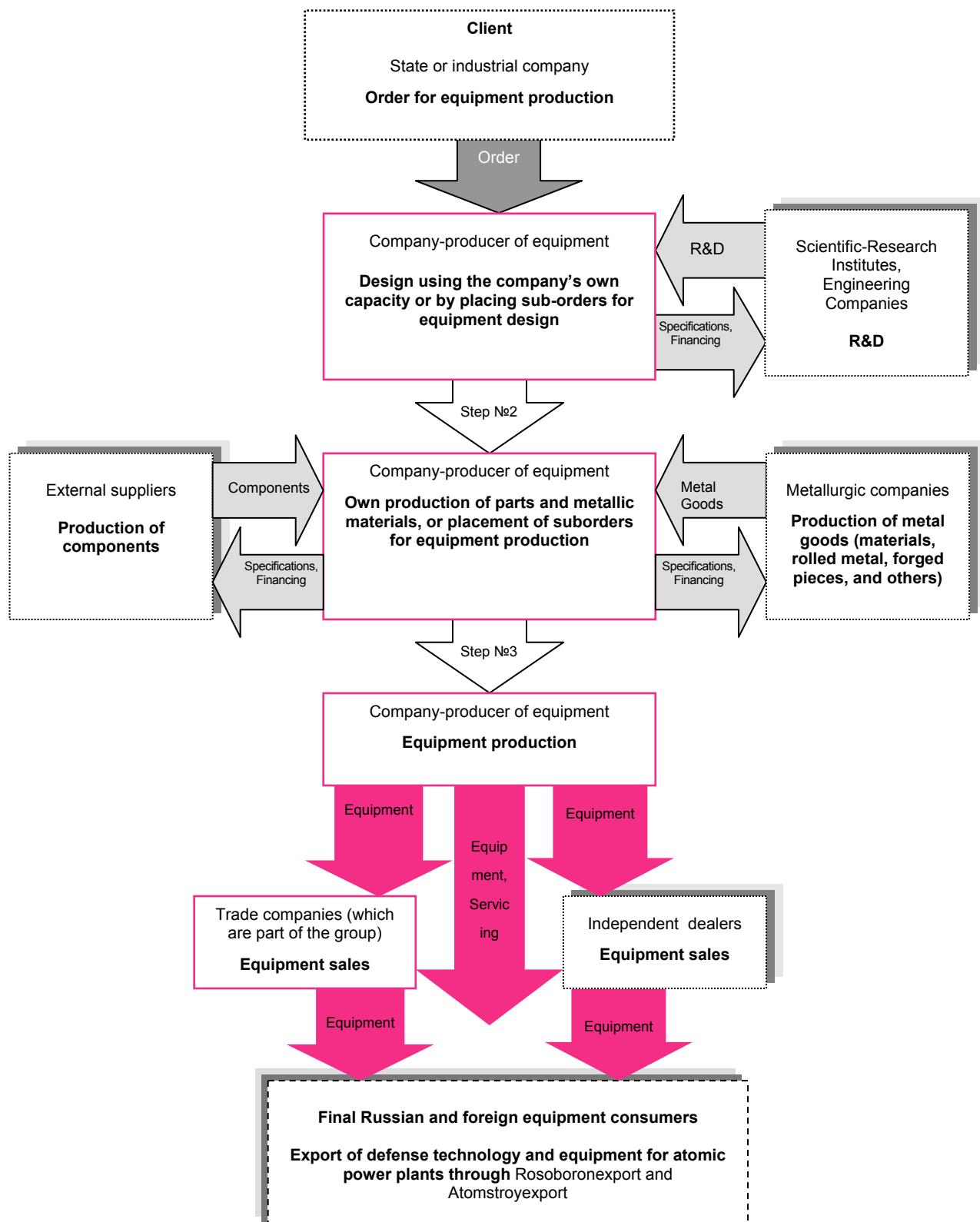
- Weak diversification of the company's product line (main revenue comes from sales of two types of rocket engines);
- NPO Energomash's business stability depends on:
  - Russia's policy in the field of space exploration and the number of orders for commercial launches;
  - Having orders for rocket launches from the company's main client — Lockheed Martin.
- At present NPO Energomash's main revenue comes from export supplies, which leads to currency, customs and political risks;
- Growth in competition on the market for launching heavy-class rockets over the next 3–5 years;
- Unequal inflow of revenue over the course of the year;
- Relatively small business size (assets as of 01.01.07 equaled \$185 mn, while 2006 revenue equaled \$80 mn).

### NPO Energomash in the name of Academic V.P. Glushko financials under RAS, \$ mn

Indicator	2006	2007	Change
Revenue	79.1	106.1	34.2%
EBITDA	-0.3	Gross Profit: -26.8	-
Net Profit	0.4	1.2	193.5%
Assets	184.9	310.8	68.1%
Financial Debt	92.9	140.8	51.5%
Shareholders' Equity	44.9	49.6	10.5%
Financial Debt/Assets	50.2%	45.3%	-4.9 p.p.
Financial Debt/Gross Profit	-	-	-
Gross Profit Margin	-	-	-

## Subsector: Equipment producers

### Business processes of equipment producers



## Main features of the equipment production subsector

Russian equipment producers as a rule possess the full technological cycle: design, production, sales, and service support. The first and last of these stages have the highest margins, thus companies are gradually transferring to a new quality level: offering engineering services (pre-design, design, and post-design character, as well as services for exploitation, management and sales of production). Furthermore, equipment plants also produce various parts, components, and instruments.

Sector risks which are characteristic of all issuers of the equipment production subsector:

- High deterioration of production facilities, usage of old technologies, and a lack of qualified specialists leads to a drop in production quality, loss of positions on external markets, and greater imports from Western and Asian countries;
- Ruble appreciation lowers the competitiveness of Russian products on external markets;
- The high share of metal products and electricity in production costs makes producers dependent on world metal prices and domestic electricity tariffs;
- The state has plans to create state holdings in the military-industrial complex and atomic energy:
  - Possible conflicts when redistributing ownership rights;
  - The question of the efficiency of state management of companies arises.

Practice has shown that bond issuers from the equipment production sector dominate on the domestic market (OMZ is the only Russian producer of water-moderated water-cooled reactors, while Motovilikhinskie Zavody Group produces unique military equipment, Cryogenmash Group is a leader in production of cryogen equipment, etc.), although pressure on the part of importers is increasing.

Thanks to the investment boom in Russia and the strong unfulfilled demand for technical refitting, almost all equipment producers have been demonstrating positive changes in their financial results; the average EBITDA margin for bond issuers in the sector is 12%.

The above-mentioned factors are stimulating equipment production companies to invest new funds into development of their fixed assets, to take part in M&A deals, and to actively borrow resources. Many bond issuers have already made IPOs, or are planning to put their shares on the stock market.

### Subsector: production of equipment and instruments for the mining industry

Development in this subsector is connected to natural resource sectors such as the oil and gas and mineral sectors. The oil and gas sector, which has the key place in the Russian economy, is the main buyer of equipment. Growth in extraction of hydrocarbon raw materials has consistently fallen over the last several years (at present extraction growth rates equal 2% per year). This is due to the depletion of existing deposits, the difficulty of extracting remaining reserves, and a lack of modern equipment (for example, deterioration of the Russian drilling rig fleet equals about 80%). Considering these factors, as well as stably high oil prices, extraction companies plan to significantly increase their investments into technological refitting. Thus demand is increasing for oil and gas equipment used for extraction and transportation of oil products.

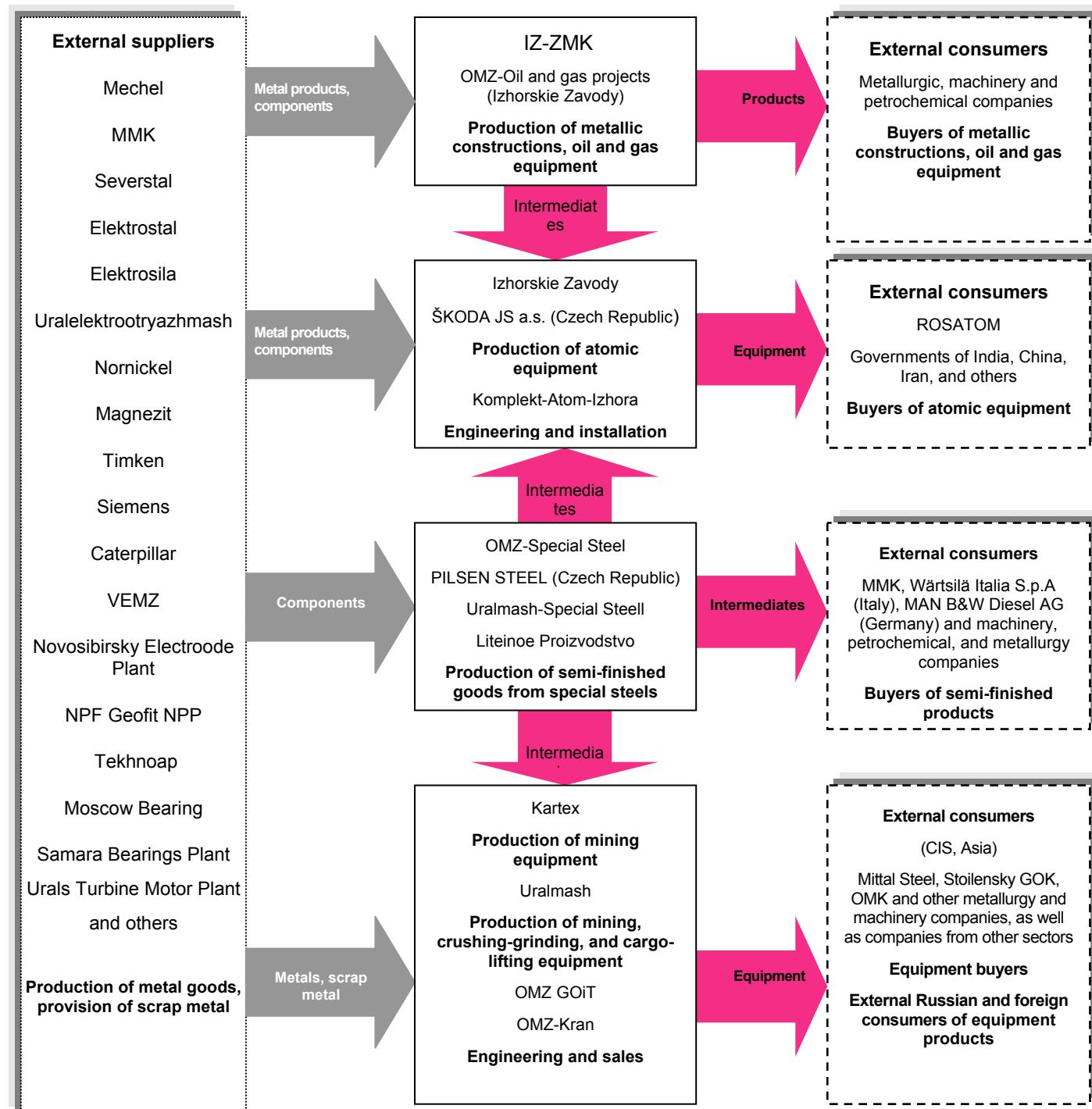
The implementation of several large projects for construction of oil and gas pipelines will provide support to oil and gas equipment producers in the future. These projects in turn will require that new deposits be introduced into exploitation.

The production process and financial results of producers of mining equipment and instruments are developing in line with the overall tendencies in the subsector, and these companies have similar sector risks.

## United Machinery Plants Group (OMZ Group) (2<sup>nd</sup> tier)

The Group is a many-segmented holding which produces special steels and atomic, mining, metallurgic, and petrochemical equipment. The company had 2007 revenue of \$826 mn.

Ratings: S&P: CCC+/ Developing, National Rating Agency: BBB



### Business segments of OMZ Group (from hereon OMZ):

**1) Production of special steels** (OMZ-Special Steel, PILSEN STEEL (Czech Republic), Uralmash-Special Steel, OMZ-Foundry): Metallurgic semi-manufactured goods (intermediates) made from steel with special properties, forged pieces, and foundry goods.

OMZ is the world leader in production of forged shafts for wind power plants, and is the world's second-largest supplier of large crankshafts for 4-tact diesel engines. OMZ is also the only Russian producer of solid-forged semi-finished products for rotors of steam turbines and turbo generators with a capacity up to 1200 MW.

OMZ's controlled the following share of the domestic market for half-finished metallurgic products as of the end of 2006: for rotor shafts — 60%, semi-finished products for atomic energy plants — 41%, stamp blocks — 60%, foundry goods for energy machine-building — 62%, foundry goods for mining machine-building — 32%.

About half of the metal goods produced by the Group are consumed by the Group's own subsidiaries and are used in production of machinery and atomic equipment.

This segment generated **53% of OMZ's revenue** for 1H07; 3/5 of the sales in this segment in 2006 came on export supplies.

**2) Production of mining equipment** (Uralmash, Izhorskie Zavody, Kartex, OMZ GOiT): drilling machines, walking (drag-line excavators) and caterpillar open-mine excavators, crushing-grinding equipment, etc.

According to company data, OMZ controls 70–90% of the market for heavy open-mine excavators and drag-line excavators, and more than 50% of the market for crushing-grinding equipment.

This segment generated **21% of OMZ's revenue** for 1H07; about 1/10 of the production in this segment was delivered as export for 2006 in money terms;

**3) Production of atomic equipment** (Izhorskie Zavody, ŠKODA JS (Czech Republic), Komplekt-Atom-Izhora): 1<sup>st</sup> circuit for power plants with water-moderated water-cooled reactors with a capacity of 440 MW and 1000 MW, containers for used nuclear fuel, energy units for submarines, etc.

OMZ is the only producer of atomic reactors in Russia, and is a leader in production of power plants with water-moderated water-cooled reactors and its components in Eastern Europe and the CIS countries, and is present on markets in South-East Asia (China, India) and the Near East.

This business segment generated **16% of revenue** in 1H07, while exports made up 1/3 of revenue in the segment in 2006.

The prospects of the given business segment of the Group are connected to implementation of the state program for development of atomic power plants, in accordance with which 10 new atomic power plants are planned to be built by 2015, while construction of another 10 will be started as well. OMZ Group intends to invest \$100 mn into its own technical re-equipment by 2012 (of which \$40 mn will be invested in 2008).

**4) Production of petrochemical, metallurgic, lifting-transportation, and hydro-turbine equipment, as well as equipment for the cement industry** (Uralmash, Izhorskie Zavody, OMZ-Kran).

OMZ established a joint venture under parity with Metallinvest Group in the second half of 2007 — Uralmash Machinery Corporation. The company's market cap is estimated by its founders at \$225 mn, while its share of the Russian market of metallurgic equipment is 40%. Uralmash MC's management announced in 2007 that it was holding negotiations on making a joint venture with SIEMENS, thereby allowing Uralmash both to expand its sales market and get access to new technologies.

**5) Providing engineering, servicing, and industrial services** IZ-ZMK, OMZ-Oil and Gas Projects (Izhorskie Zavody). OMZ actively develops design and production of equipment for oil refineries. At the end of 2007 OMZ announced that it may sign contracts with a series of Russian companies for designing oil and gas objects in Russia for a total cost of \$3.5 bn, of which OMZ plans to independently produce equipment for \$1.4 bn, while the company will give the rest for outsourcing.

Export makes up 50% of the Group's revenue. The company's most important business partners are Europe (28% of revenue in 1H07), Asia (15%), CIS countries, and others.

The company's production capacity is located in Russia and Czech Republic.

According to company data, the dominant stake in OMZ belongs to a group of Russian investors whose interests are represented by Gazprombank.

According to the media, negotiations have been held with Rosatom about OMZ entering the atomic holding, however OMZ's owners have not been able to agree with the state on the merger conditions.

OMZ's investment program for 2007–2008 exceeds \$300 mn.

The Group prepares its financial reporting under IFRS.

OMZ shares are traded on the RTS and MICEX, while OMZ ADRs are traded on the stock exchanges in London, Berlin, Stuttgart, Munich, and on the off-exchange market in the USA.

#### Risks:

- Dependence of OMZ's atomic energy equipment production segment on the state program for development of atomic energy and on the delay in implementing this program;
- Weak financial dynamics for the 12 months from 01.07.06 to 01.07.07: decrease in EBITDA, equity capital, and EBITDA margin;
- Rosatom can not agree with OMZ's owners on the conditions for OMZ to enter the state corporation;
- Strong competition on the domestic market on the part of foreign producers in the segments of mining equipment and machinery;
- Frequent changes in the Group's managers (a total of 3 different CEO's were appointed in 2007);
- As of the end of 2007 more than 50% of the territory of Izhorskie Zavody was being used by other organizations, which limits OMZ's possibilities for increasing production capacity at the site.

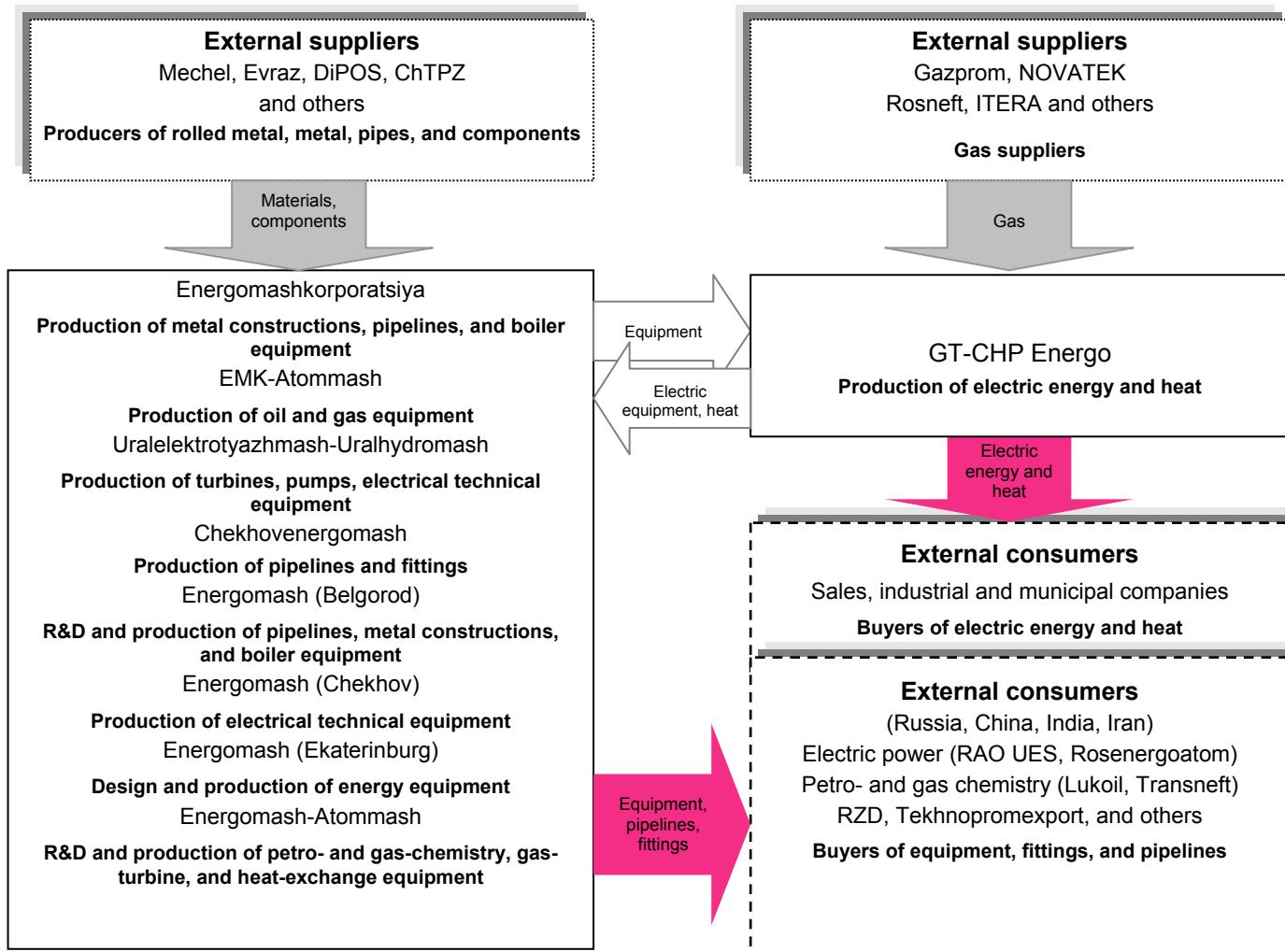
#### OMZ Group's financial indicators under IFRS, \$ mn

Indicator	2006	2007	Change
Revenue	667.0	829.4	24.4%
EBITDA	81.9	Gross Profit: 71.4	-12.8%
Net Profit	-11.5	33.1	+387.6%
Assets	912.9	1 377.0	50.8%
Financial Debt	159.0	350.0	120.1%
Shareholders' Equity	205.3	498.8	142.9%
Financial Debt/Assets	17.4%	25.4%	8.0 p.p.
Financial Debt/EBITDA	1.9x	Financial Debt/Gross Profit: 4.9	+2.9
EBITDA Margin	12.3%	Gross Profit Margin: 8.6%	-3.7 p.p.

## Energomash Group (GT-CHP Energo)

Energomash Group (GT-CHP Energo) is one of the leading machine-building holdings in Russia that specializes in production of electric power, petro- and gas-chemistry equipment, and metallurgic equipment. GT-CHP Energo had 2007 revenue of \$39 mn and 1H08 revenue of \$22 mn.

Ratings of GT-CHP Energo: Expert RA (B+); National Ratings Agency (BBB-)



Alexander Stepanov is the largest co-owner in Energomash Group.

The Group's holding company is Energomash (UK) Limited (Great Britain), which consolidates all assets of the Group. The Group's production capacity is made up of eight production companies located for the most part in the European part of Russia.

### Main business segments:

- Production of electric energy equipment (up to 50% of the Group's revenue in 2006);
- Electric technical and boiler equipment, turbines, generators;
- Power transformers;
- High-voltage apparatuses.
- Production of metallurgy goods (about 40%):
  - Apparatuses;
  - Pipelines;
  - Construction metal goods.
- Production of petro- and gas chemistry equipment (5%);
- Electricity production (3%).

According to Group data, Energomash is the leader in Russia on the markets for forced-draft machines, high-voltage (100 kW) technical equipment, and pipelines. The priority segment of the company's business is production of gas turbines with a capacity of 9–50 MW for the GT-CHP Energo project. Potentially promising production segments for the Group include boilers-utilizers, turbogenerators, magnetic bearings, metal constructions, heat-exchange and capacitive equipment.

The main buyers of the Group's production are the energy, petrochemistry, metallurgy, construction, and transport sectors. The company's clients include RAO UES of Russia, Gazprom, Lukoil, Rosenergoatom, Technopromexport, and Altaivagonzavod. Part of the company's production is exported to India, Iran, and China.

The Group plans to offer consumers a new product from its machine-building division — gas-insulated complete dispatch devices. The Group will also build a plant for production of carboxylic threads, and expand its forging production.

### GT-CHP Energo project

GT-CHP Energo is Energomash Group's largest investment project. The aim of the project is to build small power stations in energy-deficient regions of Russia. The project's prospects are linked to the lack of generating capacity in Russia and the significant share of power consumers who are not covered by centralized electricity and heat supplies.

### Risks:

- Executing the GT-CHP Energo project and making investments into expanding the company's machine-building capacity have led to somewhat of an increase in financial debt, however leverage can be reduced by making the forecasted private share placement;
- An increase in fuel prices as well as difficulties at connecting to Gazprom's gas transport system may have a negative effect on the GT-CHP Energo project.

### Energomash Group financial results under audited, consolidated, IFRS accounting for 2005 and 2006, \$ mn

Indicator	2005	2006	Change
Revenue	325.5	416.0	28%
EBITDA*	37.4	93.3	150%
Net profit	-37.4	3.6	-
Assets	1143.0	1660.0	45%
Financial debt	849.6	1132.3	33%
Shareholders' Equity	83.0	130.0	57%
Financial debt/Assets	74.3%	68.2%	-6.1 p.p.
EBITDA margin	11.5%	22.4%	10.9 p.p.

\* KIT Finance estimates

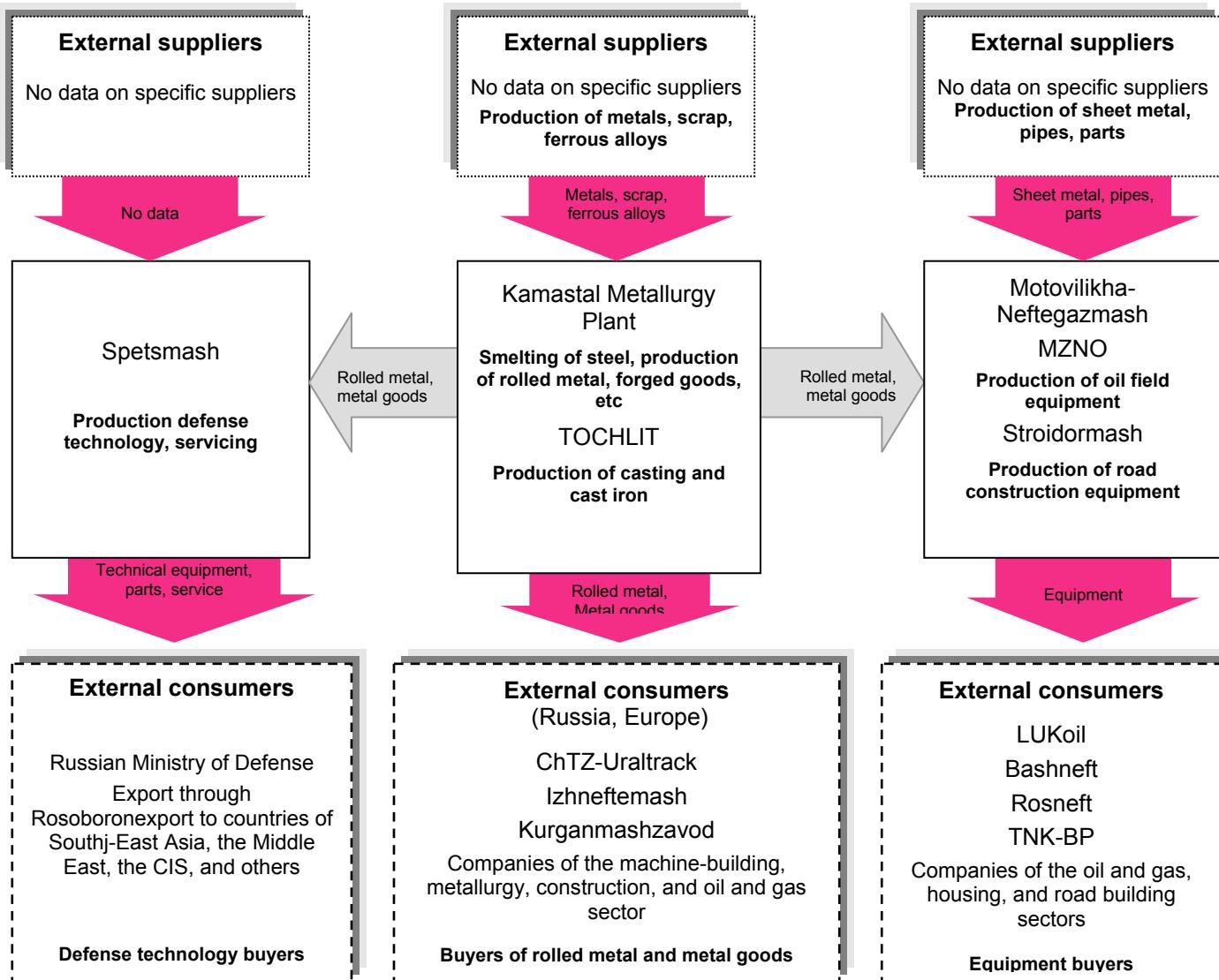
### GT-CHP Energo's financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H08
Revenue	15.0	39.0	160.5%	21.7
Gross Profit	0.4	0.8	112.4%	0.4
Net Profit	0.5	3.7	620.6%	-0.1
Assets	1 059.9	1 248.4	17.8%	1 274.2
Financial Debt	700.7	734.4	4.8%	668.2
Shareholders' Equity	266.7	357.4	34.0%	381.8
Financial Debt/Assets	66.1%	58.8%	-7.3%	52.4%
Financial Debt/Gross Profit	1901	938.3	-	799.2
Gross Profit Margin	2.5%	2.0%	-0.5%	1.9%

## Motovilikhinskie Zavody Group (3<sup>rd</sup> tier)

Motovilikhinskie Zavody Group is a large, multi-profile holding which produces metallurgic and machine-building goods, as well as weapons (such as the Uragan and Smerch Multiple Rockets Launching System, which have no analogues in the world). The company had 2007 revenue of \$445 mn.

**Ratings:** National Rating Agency: BBB+; AK&M: A / Stable



According to the media, more than 51% of the shares in Motovilikhinskie Zavody belong to the Rus Investment Group, while 25% belong to the Rosoboronexport, and 10% to the GNKP Splav. The Group is one of the competitors for entering the armored tank holding to be created on the base of NPK Uralvagonzavod. That said, according to media reports the Group's owners do not agree with the merger conditions.

### Main business segments of Motovilikhinskie Zavody Group (from hereon MZ):

- Smelting of steel and rolled metal: rolled metal, forged goods, stamping, pouring (38% of revenue for the first half of 2007);
- Production of oil field equipment (12%);
- Production of road construction equipment: mobile cranes, excavators-levelers, complex road building machines (5%);
- Repairs and servicing of special technical equipment (26%);
- Other business (17%)

MZ also produces military defense equipment: the "Uragan" and "Smerch" MRLS, the "Hyacinth" 152-mm artillery system, the "Tulip" 240-mm mobile mortar, and others. The company does not disclose its financial results from this business segment.

OAO Motovilikhinskie Zavody is the parent company and balance holder of the Group's fixed assets. MZ's production facilities are located in the city of Perm.

### Main business segments of the Group:

- **Metallurgy** (Kamastal Metallurgy Plant, TOCHLIT) Kamastal is the Group's leading company, and is a niche player specializing in smelting of complex types of steel in small volumes (production capacity of 300,000 tonnes of steel per year, production in 2006 of more than 200,000 tonnes). The plant produces flat products (50% of total production), long products (14%), forged goods (25%), and also drop forging, slabs, and others. A total of 15% of production (forged goods) is exported.
- **Servicing** (Spetsmash) The plant provides servicing of equipment and produces military technology. The prospects of this business segment are linked to participation in state military spending and signing export contracts. For example, in 2007, according to media reports, the total value of MZ's contracts for delivering its "Smerch" systems to India by 2010 was estimated at \$750 mn.
- **Oil field equipment** (Motovilikh-Neftegazmash, Motovilikhinsky Plant of Oil Field Equipment). Production of pumping rods (323,000 in 2006), drilling pipes (2,700 tonnes) and others. Pumping rods and drilling pipes provide more than 50% of revenue from this segment. The market for pumping rods in CIS countries is divided between MZ and Ochersky Mashzavod, which are in close competition. MZ has leading positions in CIS countries and on the market for drilling pipes with a share of more than 50%.
- **Road construction equipment** (Stroidormash Plant) this division shows high growth rates, and MZ intends to increase its share of revenue in the Group's total revenue in the future.

Furthermore, the Group has support, sales, engineering, and infrastructure subdivisions.

Investments in 2007 equaled \$17 mn. The Group will invest more than \$30 mn into reconstruction and production modernization in 2008 (mainly into metallurgic production).

The company's financial figures demonstrate positive dynamics for the 1<sup>st</sup> half of 2007 y-o-y: revenue doubled, while net profit increased by 6 times.

Considering the high share of metal products in the company's revenue, the company's EBITDA margin (13.9%) can be considered to be satisfactory.

MZ's debt burden is at an acceptable level (Financial Debt/Assets = 45%, Financial Debt/EBITDA = 3.0x).

### Risks:

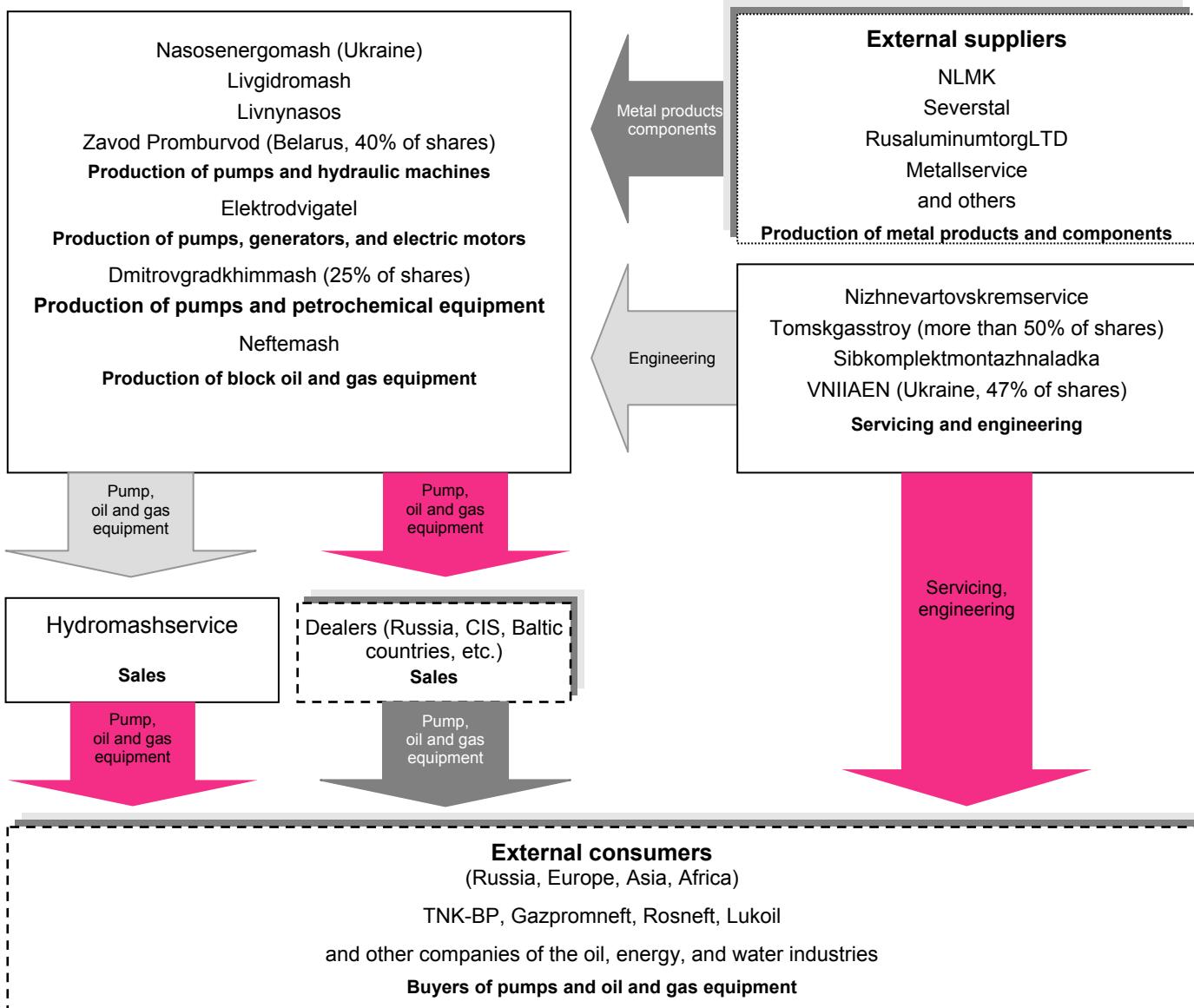
- Low information transparency (the company's owners are not disclosed, no consolidated data under IFRS is reported, information on military defense technology sales is held secret, and no data is provided on raw materials suppliers)
- Greater competition with foreign producers (metallurgy: China, CIS countries; machine-building: China, South Korea, others)

### Motovilikhinskie Zavody Group consolidated financial results under RAS, \$ mn

Indicator	2006	2007	Change
Revenue	260.0	445.3	71.3%
EBITDA	23.8	38.2	60.5%
Net Profit	0.9	18.0	1900.3%
Assets	342.7	426.9	24.6%
Financial Debt	145.1	173.5	19.5%
Shareholders' Equity	115.8	143.3	23.8%
Financial Debt/Assets	42%	40.6%	-1.7%
Financial Debt/EBITDA	6.1x	4.5	-155.6%
EBITDA Margin	9.2%	8.6%	-0.6%

## Hydromashservice (Hydraulic Machines and Systems Group) (3<sup>rd</sup> tier)

Hydraulic Machines and Systems Group is one of the leading producers of pumps and oil and gas equipment in Russia. **Hydromashservice had 2007 revenue of \$140 mn, with 1H08 revenue of \$60 mn.**



The main beneficiaries of the Hydraulic Machines and Systems Group (from hereon HMS) are its top managers German Tsoi, Artem Molchanov, Vladimir Lukyanenko, and Nikolai Yamburenko.

### Main products and services provided by HMS:

- Pump equipment (more than 70% of the Group's revenue in 2006) including:
- Unique H1B pumps for the Eastern Siberia – Pacific Ocean pipeline;
- Pumping equipment for thermal power plants and atomic power plants;
- Pumps of the ETsB type (lifting deep-well water and others).
- Petroleum engineering equipment (about 30% of total revenue);
- Engineering-construction services for the oil and gas sector.

The Group controls the entire technological production chain, including design, production, sales, and servicing. Hydraulic Machines Investment Industrial Group is the Group's holding company. The company has production facilities in Russia and the Ukraine.

Exports gave the company about 10% of its revenue in 2006 (deliveries were made to more than 20 countries).

### Main business segments of the Group:

**- Pumping equipment.** The company produces about 500 different types of pumps, which gives HMS the possibility to be present in all main segments of the pump equipment business, holding from a 10% to 30% market share in various segments (pumps for oil extraction and transmission, feed-pumps and condensate pumps, pumps for water supplies and drainage systems, etc.). Altogether there are about 200 pump producers in Russia (HMS' market share equals about 20%), while the majority of producers are small companies. This means that larger producers have the opportunity to expand their business by consolidating the sector.

**- Block oil and gas equipment.** Production (mostly through individual projects) of bunched pumping stations, equipment for sustaining seam pressure, measuring points for measuring well yield, and underground equipment for oil extraction, oil-pumping stations, etc. HMS dominates on the market for block equipment together with OZNA Group, and according to company estimates has 2<sup>nd</sup> place in segment with a market share of more than 30%.

**- Engineering-construction services for the oil and gas sector.** This is a new segment for the Group (formed at the end of 2006), which has strong potential thanks to the needs of Russian oil companies for increasing their extraction. The Group named this segment as being strategically important (in terms of volume this segment exceeds the markets for pump and oil and gas equipment) and intends to purchase new assets in the segment (the Group's plans include increasing its average weight of revenue from this segment in HMS' total revenue to 10–15%).

The Group's main sales markets are the oil (more than 50% of revenue), energy, and water industries. The Group's largest consumers are TNK-BP, Gazprom Neft, Rosneft and Lukoil.

The main raw materials used in the Group's production include rolled metal, cables, electric motors, steel, aluminum, and others. The company's supplier base is rather well diversified (each supplier's share is no more than 10% of the total volume of supplies to the Group).

The company had investments in 2006 of \$33 mn, while its plan for 2008 is for \$50 mn. The Group plans to sell about 20% of its shares through an IPO after 2009.

The Group's financial results (with the exception of net profit, which went unchanged) showed positive growth in 2006 y-o-y: revenue increased by 56%, EBITDA by 15%, and assets by 39%. That said the company's growth in costs is worrisome, as it led to a drop in EBITDA margin by 4.3 p.p. to 12.2%.

The company's leverage is at an acceptable level (Financial Debt/Assets = 37%, Financial Debt/EBITDA = 2.0x) and, according to company forecasts, will not increase in 2007–2009.

### Risks:

- Low information transparency (no consolidated financials for 2006 and later, complex legal structure of the Group)
- The engineering-construction services business for the oil and gas sector was formed only at the end of 2006

### HMS Group financials under consolidated IFRS reporting for 2005 and management accounting for 2006, \$ mn

Indicator	2005	2006	Change
Revenue	158.9	247.1	56%
EBITDA	26.3	30.2	15%
Net profit	16.7	16.7	0%
Assets	118.0	163.4*	39%
Financial Debt	24.6	59.7*	143%
Shareholders' Equity	64.0	70.1*	10%
Financial Debt/Assets	21%	37%*	16 p.p.
Financial Debt/EBITDA	0.9x	2.0x*	1.0x
EBITDA Margin	16.5%	12.2%*	-4.3 p.p.

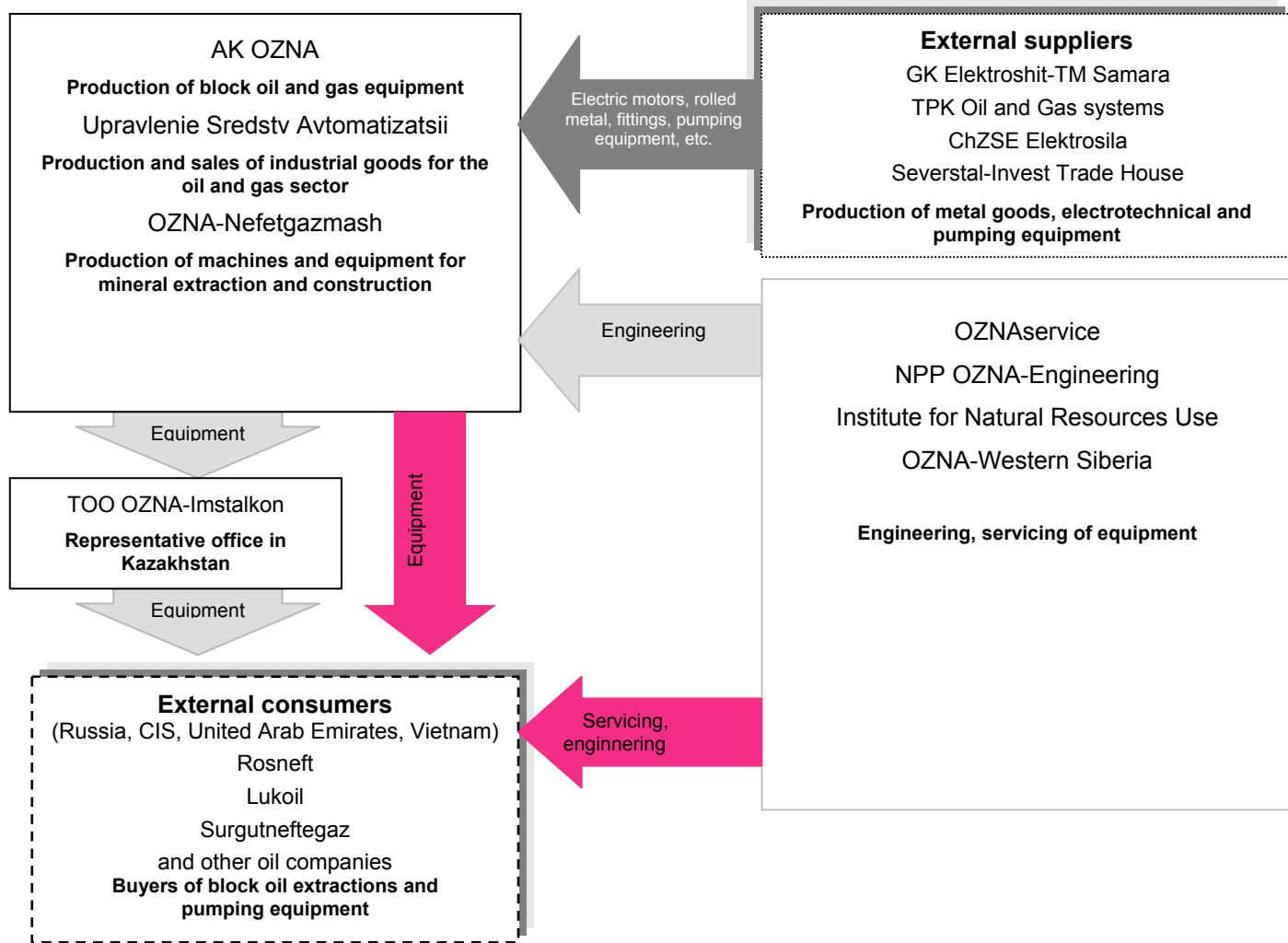
\*Company forecast, KIT Finance estimates

### Hydromachservice financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H08
Revenue	68.0	140.6	106.6%	60.3
Gross Profit	2.9	8.9	206.5%	3.6
Net Profit	0.7	1.5	101.8%	-2.2
Assets	54.4	169.1	210.8%	201.9
Financial Debt	37.9	101.2	167.0%	129.4
Shareholders' Equity	5.7	7.3	27.4%	5.6
Financial Debt/Assets	69.6%	59.8%	-9.8%	64.1%
Financial Debt/Gross Profit	13.0	11.3	-167.5%	17.8
Gross Profit Margin	4.3%	6.3%	2.1%	6.0%

## October Plant of Oil Automatics (OZNA Group) (3<sup>rd</sup> tier)

OZNA Group is one of the leading producers of block oil and gas equipment in Russia. The company had 2007 revenue of \$166 mn.



According to data from February 2008, the main owners of AK OZNA (hereon OZNA) are its top managers: Marat Akhmetshin, Marat Fattakhov, and Artur Khazigaleyev (27.56% stakes each).

OZNA's business includes the entire production cycle: design, production, sales, and servicing of oil and gas equipment.

### Main goods produced by OZNA Group:

- Block pumping equipment (according to company data, OZNA controlled 35% of the Russian market in 2006);
- Three-phase calibration units (44%);
- Oil measuring units.

The Group has strong positions in production of several goods (group calibration units, chemical feeding blocks, pressure filter blocks, etc.).

Exports made up more than 10% of the company's revenue in 2006 (United Arab Emirates, Vietnam, CIS countries).

According to the company, it is the Russian leader in production of block oil and gas equipment. This market is growing thanks to increased demand from oil companies.

**OZNA's structure:**

- **AK OZNA** is the head company of the Group and the main balance-holder of the Group's production assets. AK OZNA controls the Group's main production business. It is also the main center for revenue generation in the Group.

- **OZNA-Neftegazmash** (30.5% of the company's authorized capital belongs to OZNA): produces machines and equipment for mineral extraction, construction, etc.

- **Subsidiary companies** which work in the spheres of sales, equipment engineering and servicing, design, and renting out housing.

The company's production facilities are located in the Republic of Bashkortostan (supplies as of the middle of 2006 equaled 75%).

A service center was opened in Nefteyugansk (Khanti-Mansiisk Autonomous Region) in 2006 as part of the Group's plan for developing its servicing subdivision. The company also intends to organize similar centers in Western Siberia, the Volga region, and Kazakhstan.

The Group's clients include oil companies from Western Siberia and Kazakhstan. The company's largest clients are Rosneft, Russneft, LUKOIL, Surgutneftegaz, and oil companies from Kazakhstan.

A total of 65% of purchases over the first 9 months of 2006 were made for electric equipment, controlling-measuring equipment, pumping equipment, sealing fittings, electric motors, wiring goods, and cable products. The company's supplier base is well diversified, while imports are slight.

OZNA intends to strengthen its presence on the market by buying machine-building and service companies which serve the oil and gas sector. The company will adopt its long-term development strategy for the next 7 years in April of 2007.

OZNA Group's financial results under consolidated reporting for 2006 showed positive growth as compared to the year before: revenue increased by 74% y-o-y, EBITDA by 46%, and assets by 67%. EBITDA margin (15.2%) is on a rather high level for the machine-building industry, while OZNA's lower EBITDA margin in 2006 vs. 2005 is a factor of producing more material-intensive goods and of stronger price competition on the market.

The Group's leverage was modest in 2006 (Financial Debt/Assets = 33%, Financial Debt/EBITDA = 1.2x). The Group bought out its own bonds for a sum of \$12 mn in December of 2007 through a put option (61% of the issue), while it plans to issue bonds for \$60 mn in 2008 (the ways in which the funds raised will be used have not been made public for now).

**Risks:**

- Dependence on several consumers (Lukoil and Rosneft together made up almost half of all of the Group's contracts in 2007);
- High equipment deterioration (as of the end of 2006 more than 70% of the company's fixed assets were 20 years old or older);
- No consolidated financial reporting under international standards.

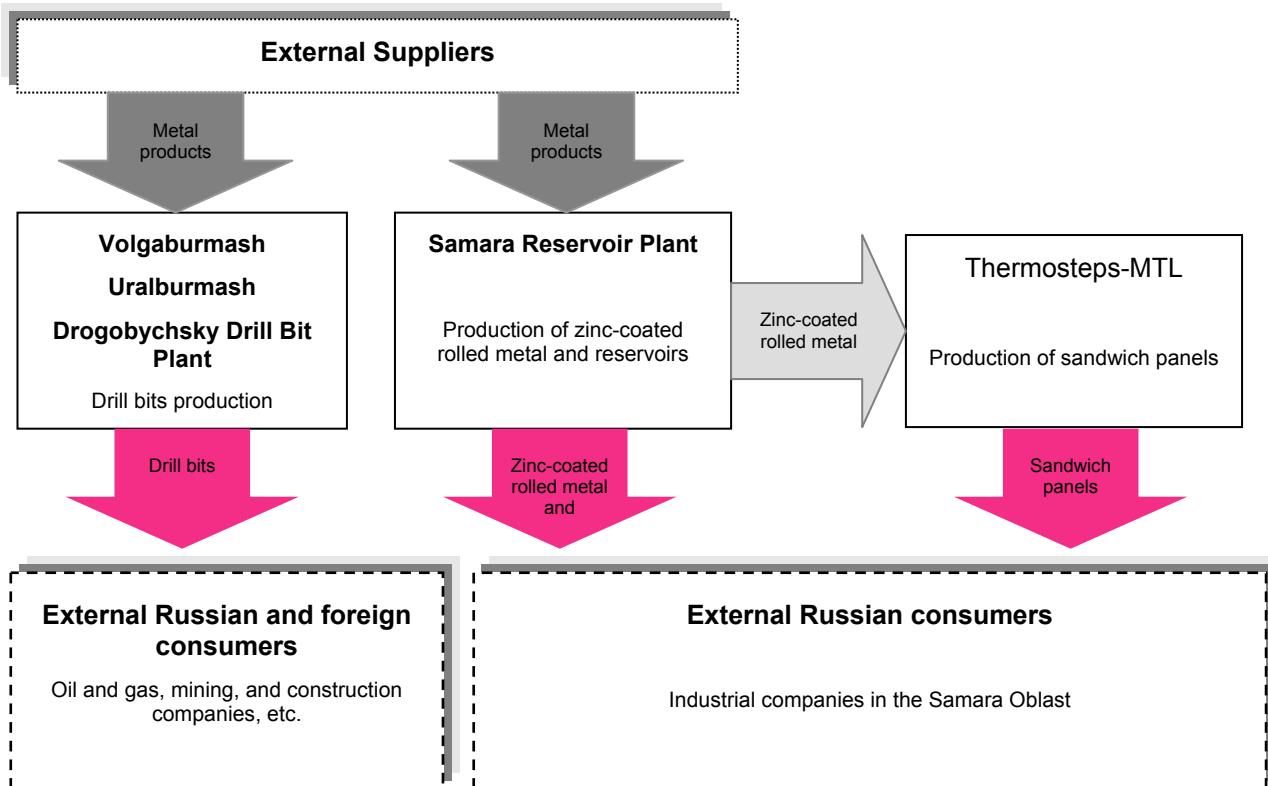
**OZNA Group's financial indicators under IFRS, \$ mn**

Indicator	2006	2007	Change
Revenue	103.3	166.2	60.8%
Operating Profit	15.6	32.5	109.1%
Net Profit	11.2	22.8	103.3%
Assets	72.5	106.0	46.1%
Financial Debt	19.8	35.3	78.7%
Shareholders' Equity	34.2	52.5	53.6%
Financial Debt/Assets	27.2%	33.3%	6.1%
Financial Debt/Operating Profit	1.3	1.1	-18.5%
Operating Profit Margin	15.0%	19.6%	4.5%

## Volgaburmash Group (3<sup>rd</sup> tier)

Volgaburmash Group is the Russian leader in production of drill bits (about 100,000 units in 2006, or a more than 80% market share) and is one of the five leading world producers with a market share of about 10%. The company had 2007 revenue of \$86 mn and 1H08 revenue of \$51 mn.

Ratings: National Rating Agency: BBB-



Business of the Group:

- Drill bit production (about 60% of revenue)
- Production of construction materials, zinc-coated rolled metal, and reservoirs.

The company makes exports to CIS countries, the USA, Asia, and other countries. The company's production facilities are concentrated in the Volga region, the Urals, and in Ukraine.

According to the media, the Group owner is Andrey Ishuk.

At present the Group is consolidating its assets on the base of VBM-Group. In the end the holding will consist of the following divisions:

**Drill-bit production.** This division has three plants (Volgaburmash, Uralburmash, and Drogobychsky Drill Bit Plant), which produce bits and equipment for the oil and gas, mining, and construction sectors. The Group also manages Sarapulsky Machine-Building Plant, which produces oil bits. This company has not yet been consolidated into the holding.

**Support production.** This division includes Samara Reservoir Plant and Thermosteps-MLT, which produce reservoirs for storing oil and petroleum products (according to company data these companies together hold second place in Russia with about a 15% market share), sandwich panels (according to company data, about 20% of the Russian market), zinc-coated rolled metal, and metallic constructions. The estimated capacity of metallic construction production (including reservoirs) is 30,000 tonnes per year, while zinc-coated rolled metal production capacity is more than 80,000 tonnes per year. Sandwich panel capacity equals about 2 mn sq m.

**Service and sales divisions:** VBM-Service and trade representative offices located nearby to clients.

The world drilling bit market is strongly concentrated (about 80% of sales are made by the four largest producers: Baker Hughes, Smith International, Reed Hycalog/Grand Predeco, and Security DBS/Halliburton), which makes it hard for new players to enter the market. Volgaburmash has a monopoly on the Russian market, as a result of which the Federal Anti-Monopoly Service made a series of requirements of the company last year which limit discrimination of consumers. The market's prospects depend on drilling dynamics, the volume of which has been increasing stably since 2004.

Foreign competitors are putting strong pressure on the Group's positions. Foreign producers are gradually increasing their market share and are thereby forcing Russian producers to invest more into the quality of their goods. The Group's investments into production over 2007–2008 will equal about \$80 mn. The Group's management does not exclude the likelihood of a series of mergers abroad.

The Group's main sales markets are the oil and gas, mining, and construction sectors. The Group's largest clients are Surgutneftegaz, Norilsk Nickel, and Lebedinsky GOK.

Metal products make up the largest share of the company's purchases. The average weight of import in the company's supplies is small.

Volgaburmash shares are traded on the RTS. The Group has stated its preparations for making an IPO in 2008–2009 (the Group's management expects the Group's capitalization to equal \$800 mn by the time of the public offering).

The Group does not provide consolidated financials to the public. The financial dynamics of the bond issuer — Volgaburmash — showed a positive trend y-o-y for the first 9 months of 2007: revenue increased by 25% and EBITDA by 180%.

EBITDA margin was at a high level for the machine-building sector in 2006 at 17.3%.

#### Risks:

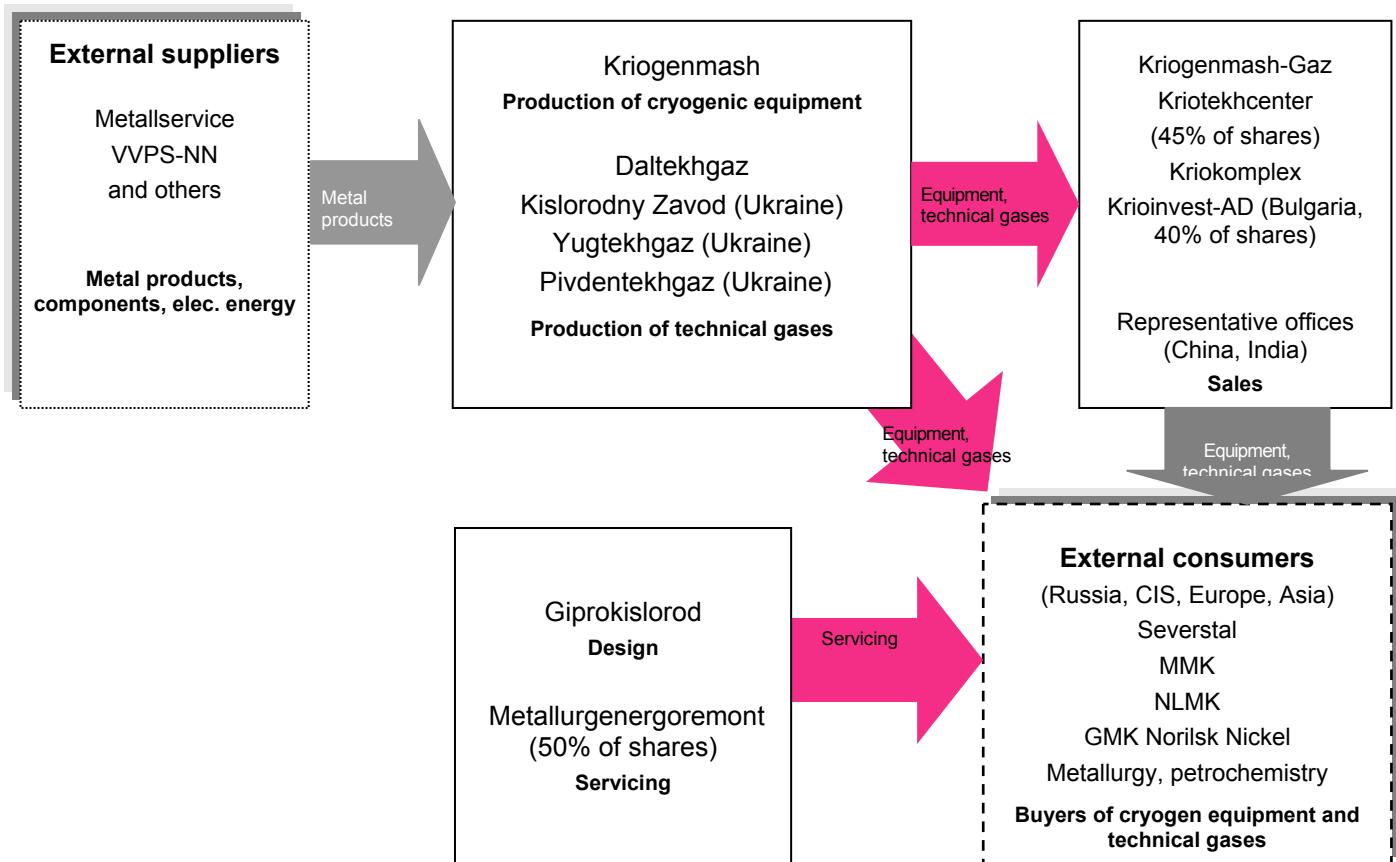
- Low information transparency (the Group's owners are not officially made public, the Group does not produce consolidated financial reporting or financial reporting under international standards);
- High leverage of the bond issuer in 2007: total debt equaled 75% of total assets and was almost 8 times higher than EBITDA.
- Greater competition on the part of foreign drill bit producers.

#### Volgaburmash's financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H2008
Revenue	65.7	86.4	31.5%	51.1
Gross Profit	11.4	21.9	92.2%	11.7
Net Profit	1.2	3.0	151.1%	2.5
Assets	152.7	222.3	45.6%	230.4
Financial Debt	107.9	167.2	55.0%	170.5
Shareholders' Equity	32.7	37.6	14.9%	42.7
Financial Debt/Assets	71%	75.2%	4.6 p.p.	74.0%
Financial Debt/Gross Profit	9.5x	7.6	-1.8	7.3
Gross Profit Margin	17.3%	25.4%	8.0 p.p.	22.9%

## Cryogenmash Group (3<sup>rd</sup> tier)

Cryogenmash Group is the Russian leader in production of air separation equipment (about a 50% market share) and produces technical gases. The company had 2007 revenue of \$123 mn.



The Group's final beneficiaries are not officially disclosed. According to the media the controlling company in the holding is Promsvyazcapital Group, owned by the Ananyev brothers (this is proven by the fact that Promsvyazcapital has representatives in Cryogenmash's Board of Directors).

### OAO Cryogenmash is:

- the head company, which consolidates the Group's assets;
- the main production company of the Group.

### Cryogenmash Group:

- Production and servicing of cryogenic equipment (97% of revenue in 2006);
- Air-separating installations (the main equipment used for receiving technical gases, about 80% of the Group's revenue in 2006);
- Systems for storage and transportation of technical gases and gasification (7%);
- Cryogenic and vacuum systems (7%).
- Production of technical gases (oxygen, nitrogen, argon, and others).

Exports make up about 40% of the company's revenue (CIS, Europe, China, India). The Group's production facilities are located in Russia and Ukraine.

Cryogenmash is the leading producer of cryogenic equipment on the territory of the former Soviet Union. According to company data production of technical gases in Russia is more than 90% based on Cryogenmash equipment. High market growth rates (30% in 2005) are determined by the introduction of new industrial production capacity in Russia (especially in metallurgy and petrochemistry) and strong deterioration of existing equipment. On the domestic market for technical gases there are both local companies and the largest world players (Air Liquide, Linde, and Air Products).

At present the market is in a consolidation phase (Cryogenmash Group is actively participating in this process by buying up production, servicing, and sales companies).

The most promising and high-margin segment on the Russian market is for organization of work under an on-site scheme, in other words producing gases right on the client's site (about 50% of world supplies, while at present this segment is practically non-existent in Russia). Cryogenmash Group launched 2 such projects in 2006 and plans to start production in 2008 (investments are estimated at \$50 mn).

The main consumers of the Group's products are metallurgy companies which use oxygen for smelting and processing steel (50% of deliveries), as well as petrochemical companies (up to 28% of revenue) and energy, machine-building, and food companies, etc.

A total of 50% of the Group's costs come for materials (sheet steel, structural shapes, rolled metal, etc.), components, and electricity. The Group's base of counterparties is rather well-diversified.

The Group invested about \$18 mn in 2006. The Group continued to take part in consolidation of the sector, and each year implements 1–2 new projects under an on-site scheme (production of gases at the client's facility), which should have a positive effect on the company's business development.

The Group prepares consolidated financials under IFRS.

Cryogenmash Group shares are traded on the RTS, however trading activity in these shares is close to zero (only two deals for a total sum of \$20,000 were made on these shares over the last 6 months).

#### Risks:

- Ruble appreciation may have a negative effect on the Group's financial results and competitiveness since export brings the Group about 40% of revenue;
- Small business size (revenue for 2006 equaled \$91 mn, while assets equaled \$230 mn);
- The Group's final beneficiaries are not disclosed.

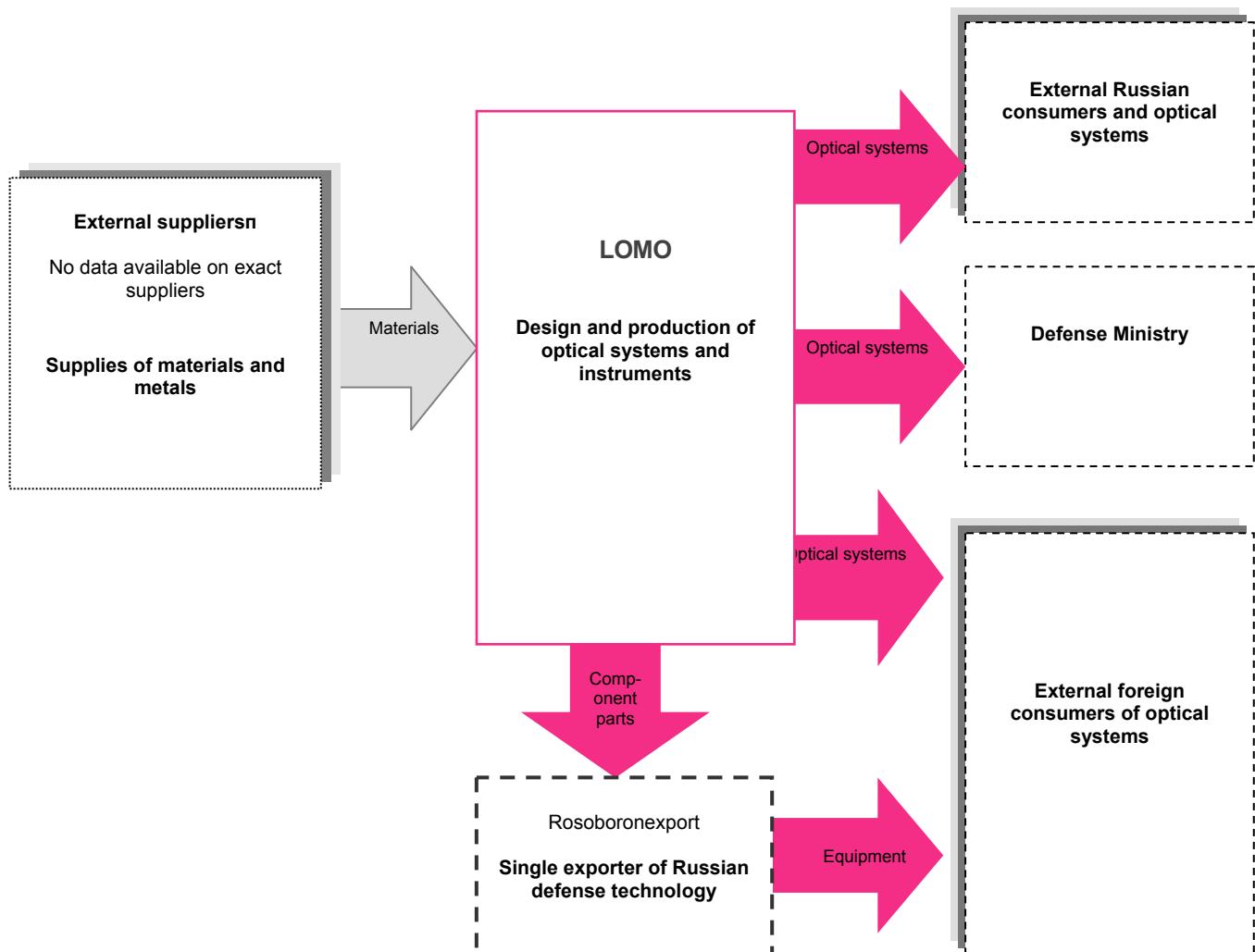
#### Cryogenmash Group financial indicators under consolidated IFRS, \$ mn

Indicator	2006	2007	Change
Revenue	90.0	123.5	37.3%
EBITDA	10.3	19.1	85.1%
Net Profit	N/A	N/A	-
Assets	122.7	177.6	44.7%
Net Debt	38.0	39.0	2.8%
Shareholders' Equity	21.4	30.2	41.2%
Net Debt/Assets	30.9%	22.0%	-9.0 p.p.
Net Debt /EBITDA	3.7	2.0	-1.6
EBITDA Margin	11.5%	15.5%	+4.0 p.p.

## LOMO (3<sup>rd</sup> tier)

LOMO specializes in production of military, space, and medical technology, optical-electronic and optical-digital instruments, systems for civil and special surveillance, and lighting and digital microscopy. The company had 2007 revenue of \$61 mn, while 1H08 revenue equaled \$36 mn.

Ratings: None



LOMO produces optical and optical-mechanic devices and systems. The company's product line includes more than 150 types of products.

Main business segments:

### - Production of military technology

LOMO is a Russian monopolist for production of target seeking heads for mobile anti-aircraft missiles and large-size optical-electronic systems and remote-controlled reconnaissance.

### - Production of optical-electronic and optical-digital instruments

LOMO is the only company in Russia which makes serial production of lasers, large-size astronomical telescope and complex light microscopes, as well as analytical light microscopes and flexible medical endoscopes.

### - Production of surveillance systems for civilian and special purposes, and light and digital microscopes.

LOMO's market share for civilian goods:

- Biological microscopes: 57%;
- Operational microscopes: 10%;
- Endoscopies: 14%;
- Polarizing microscopes: 52%.

About 50% of the company's revenue comes from exports to the USA, Canada, Germany, Austria, Israel, and other countries. Supplies are made directly and through Rosoboronexport for military technology.

The main civilian goods produced by LOMO for export are medical instruments (microscopes and endoscopes), lasers and night vision scopes.

About 3,000 workers are employed by LOMO.

LOMO is owned by a number of private individuals.

#### Main risks:

- **Losses in 2006 and for 2007;**
- **Growth in debt over the last 1.5 years, high leverage for 1H08;**
- Income comes for the most part from exports, thus the company faces currency, political, transportation, and customs risks;
- Un-uniform revenue from sales, intra-group reporting is not representative;
- LOMO's business depends to a large degree on having packets of orders;
- Small business size (assets on 01.10.07 of \$186 mn, 9M2007 revenue of \$33 mn).

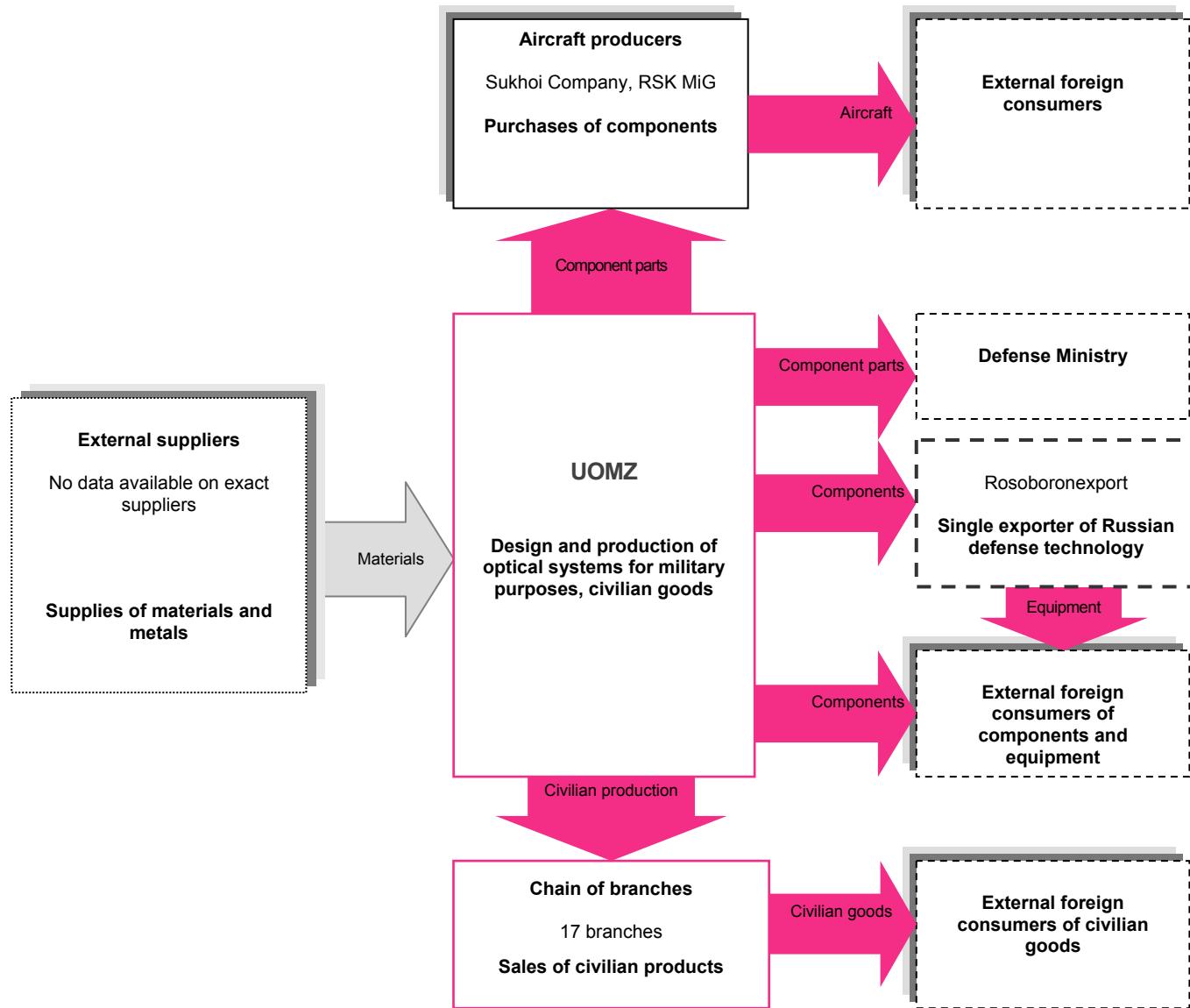
#### LOMO financial results under RAS, \$ mn

Indicator	2006	2007	Change	1H08
Revenue	64.6	61.3	-5.1%	36.2
Gross Profit	9.1	0.9	-90.1%	7.5
Net Profit	-9.4	-34.4	-	2.0
Assets	186.0	203.8	9.6%	232.1
Financial Debt	129.1	170.1	31.8%	187.1
Shareholders' Equity	36.1	8.6	-76.0%	14.5
Financial Debt/Assets	69.4%	83.5%	14.1 p.p.	80.6%
Financial Debt/Gross Profit	14.2x	189.0	-	12.4
Gross Profit Margin	14.0%	1.5%	-12.6 p.p.	20.8%

## Ural Optical and Mechanical Plant (3<sup>rd</sup> tier)

Ural Optical and Mechanical Plant (UOMZ) produces optical-electronic devices and is a monopolist in the field of design and production of optical-electrical complexes for military uses in the CIS states. The company had 2007 revenue of \$128 mn.

Ratings: None



Ural Optical and Mechanical Plant (UOMZ) federal unitary enterprise produces optical-electronic systems and complexes for military and civilian use, as well as various civilian goods.

At present UOMZ is the only company in the Russian Federation capable of fulfilling the whole cycle of design, production, and, servicing of optical-electronic complexes.

### UOMZ business segments:

- **Production and sales of military technology** (share of revenue in 2006 = 54%).

At present the plant supplies optical-locating systems for MiG-29, Su-22, Su-25, Su-27, Su-30, and Su-34 airplanes, as well as for Mi-8, Mi-24, Mi-28, Ka-27, Ka-50, Ka-52, and Ka-226 helicopters. The company is also developing principally new complexes to be used in next generation fighter jets.

The company is also the leading designer and producer of gyrostabilized and turret optical-electronic systems for various ships of the Russian Navy, as well as for modernized and new tank models.

- **Design and production of medical equipment** (market share of 12%).
- **Design and production of surveying equipment** (market share of 6%).
- **Design and production of lighting controls and systems for optical surveillance** (market share of 4%).

About 75% of the company's total revenue comes from export.

UOMZ is 100% owned by the state.

At present UOMZ features 120 project groups which employ more than 900 employees; the company is implementing more than 80 projects for designing test models of goods for both civilian and military use. The company's R&D expenditures increase each year by approximately 30%.

UOMZ has 17 sales branches for selling its civilian goods. The Group also has independent companies in Belarus and Switzerland.

The company received the rights in 2003 to independently sign contracts until 2009 for export of spare parts and support equipment, to make repairs, and provide servicing. A total of 23 companies in the Russian Federation have analogous authority, the main one of which is Rosoboronexport (75% of all supplies in 2007).

#### **UOMZ products are sold on world markets through the following channels:**

- Through Rosoboronexport;
- Through aircraft production companies (Sukhoi Company, RSK MiG) which equip optical-electronic systems meant for export abroad;
- As part of an independent export business.

In 2008 UOMZ will enter the Avionika Holding. This Holding already unites the 11 leading companies in Russia for production of cockpit radio-electronic equipment for civilian and military aircraft and spacecraft. The largest of these companies are Ramensk Instrument-Making Design Office, Avionika, Aeropribor-Voskhod, Pribor, Ramensk Instrument-Making Plant, and Techpribor (St. Petersburg). The new structure will include another 12 participants, the majority of which are federal unitary enterprises (among which there is Ural Optical Mechanical Plant).

#### **Main risks:**

- The company makes its revenue from export for the most part, thus there are currency, political, transport, and customs risks;
- UOMZ's business depends to a significant degree on having a packet of orders;
- Un-uniform revenue over the course of the year;
- Small business size (forecasted assets as of 01.01.08 = \$194 mn, 2007 revenue of \$152 mn)

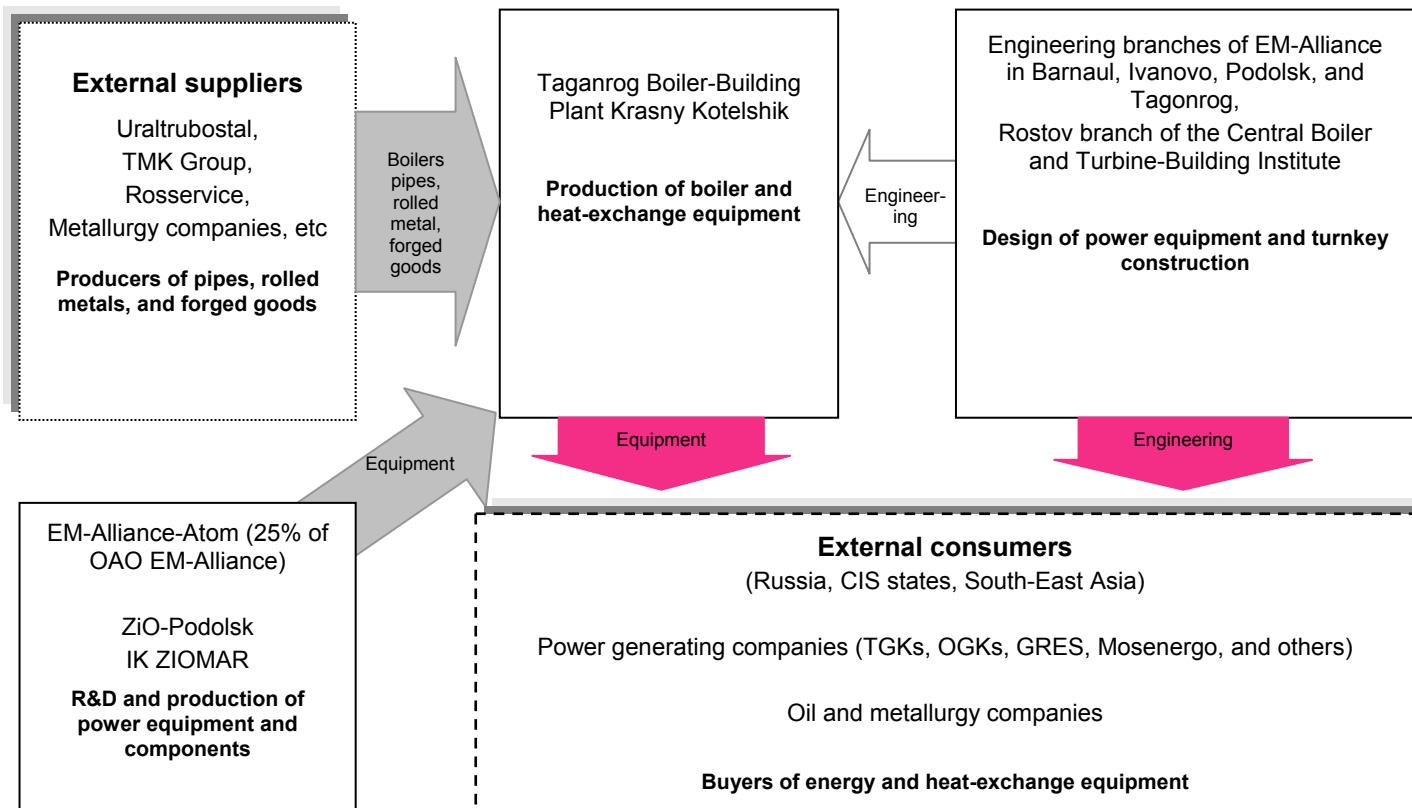
#### **UOMZ financial indicators under RAS, \$ mn**

Indicator	2006	2007	Change	1H08
Revenue	106.4	128.1	20.4%	59.3
EBITDA	14.4	20.5	42.7%	9.6
Net Profit	1.1	1.4	28.1%	0.7
Assets	170.4	228.2	33.9%	261.8
Financial Debt	62.6	108.5	73.4%	131.9
Shareholders' Equity	47.6	52.2	9.8%	56.4
Financial Debt/Assets	36.8%	47.5%	+10.8 p.p.	50.4%
Financial Debt/EBITDA	4.3x	5.3	+1,0	6.9
EBITDA Margin	13.6%	16.0%	+2.5 p.p.	16.2%

## EM-Alliance Group (EnergoMachine-Building Alliance)

EM-Alliance Group is the national leader in the sphere of production of energy boiler equipment (according to company data, it controlled 80% of the market in 2007). **EM-Alliance Group's revenue was \$130 mn in 2007.**

**Ratings:** None



The only owner of EM-Alliance is AUBURN INVESTMENTS LTD, the beneficiary of which is, according to the media, Evgeny Tugolkov, a deputy in the Russian Duma.

### Main products and services of EM-Alliance Group:

- Gas boilers of large, medium, and small capacity;
- Boilers-utilizers (which use heat from other industrial or energy plants) for gas-turbine units of small and medium capacity;
- Heat-exchange, water-treatment, boiler-supporting, and other equipment;
- Spare parts and units for power equipment;
- Construction of turnkey facilities;
- Service manning.

Production of boilers and components brings the company more than 60% of its revenue. The plant is the Russian leader in output of steam boilers for the utilities sector (according to company data EM-Alliance boiler equipment is installed at 60% of all Russian heat power plants, while EM-Alliance heat-exchange equipment is installed at 90% of all Russian heat power plants).

OAO EM-Alliance consolidates Taganrog Boiler-Building Plant Krasny Kotelshik (75% of all shares) and engineering companies in Barnaul, Taganrog, Ivanovo, and Podolsk.

In 2006 EM-Alliance transferred ZiO-Podolsk, the largest Russian company for production of boiler equipment for atomic energy, to EMAlliance-Atom, a joint venture with the state company Atomenergomash (which is part of the structure of Atomenergoprom). As of the beginning of 2008 OAO EM-Alliance controlled 50% + 1 share in the joint venture together with Renova Group. Managers of EM-Alliance Group have stated many times that they plan to sell the Group's share in the joint venture, and to use the funds raised from the sale for implementing the company's investment program.

The Group's main production asset is Krasny Kotelshik, which is located in the city of Taganrog in the Rostov Region. The plant performs the entire technical cycle (from making stock materials to production of units and parts, as well as assembly of goods) and is capable of producing boiler equipment with a total capacity up to 3 GW per year. A negative factor for the company is its low production capacity use (as of the end of 2006 production capacity equaled about 60%).

In 2008 Krasny Kotelshik will begin production of boilers-utilizers for large capacity power-generating units which will be in high demand as part of the program for Russian power sector reform (investments of about \$7 mn).

The share of raw materials, semi-finished products, and components in the company's total production costs as of the end of 3Q07 equaled approximately 60%. The company's base of counteragents is rather well-diversified, while import is quite low.

The plant's main clients include representatives of the power, oil, and metallurgy sectors. As of 9M07 exports made up 17% of the company's sales. In the future the company intends to strengthen its competitive positions in the CIS countries, South-East Asia, and Western Europe.

The plant actively cooperates with foreign machine-building companies such as Alstom, Foster Wheeler, Siemens and AE&E so as to eliminate its technological gap. For example, Krasny Kotelshik has been approved as an equipment supplier for orders made by AE&E and Siemens. In the fall of 2007 the company signed a contract for delivering boilers to Foster Wheeler made in partnership with the latter using circulating boiling level technology. This technology ensures a high rate of capacity use of boilers (up to 90%) and makes it possible to burn low-grade coal. At present the Group is implementing its first project together with Alstom for turnkey construction of a power-generating unit at CHPP-26 of Mosenergo at a cost of about \$450 mn.

The Group formed an engineering segment in 2007 as part of its development of design of power equipment and construction of turnkey CHPPs. This segment has received the priority role in the Group's strategy. According to company estimates the share of engineering services as a percentage of total revenue should reach 60% by 2011. The company will open branches in Moscow and Belgorod in 2008, while in 2008–2009 the company plans to spend up to \$350 mn to buy 4–5 European engineering companies.

An interesting project for the Group will be to build a power plant which works on domestic waste with output capacity of 60 MW nearby to Taganrog in 2008–2010. The company will have to invest about \$120 mn into the plant.

According to preliminary figures, as of the end of 2007 EM-Alliance's order portfolio was equal to \$839 mn (4 times higher than the year before). The company has set itself the task of increasing its total order portfolio to \$1.7 bn by the end of 2008.

The Group had planned to make an IPO of its atomic assets on the Russian market in the second half of 2008, estimating their total value at \$400–800 mn. That said, due to the unfavorable situation on the stock market the placement may be postponed.

Krasny Kotelshik shares are traded on the RTS.

Considering that the Group did not produce consolidated financial reporting for 2006, we estimated the Group's financial status based on the financial reporting of its main production asset, Krasny Kotelshik.

Overall the plant has demonstrated positive dynamics in its financials, while having low debt level (as of 01.10.07 the ratio of Financial Debt/Assets equaled 13%, while on 01.01.07 its ratio of Financial Debt/EBITDA equaled 3.2x). That said the Group's total debt burden may be significantly higher, since EM-Alliance's holding company's financial debt as of the end of 2006 equaled \$78 mn, which is 2.2 times higher than the production plant's borrowings.

Krasny Kotelshik's EBITDA margin in 2006 equaled 11.1%, which is somewhat higher than the average level for the machine-building sector.

According to company forecasts, Krasny Kotelshik's revenue will reach \$220 mn in 2008.

**Risks:**

- Lack of consolidated financials for the Group for 2006 and later;
- The high financial debt of one of the Group's companies, OAO EM-Alliance (\$78 mn) testifies to a higher total leverage for the Group as compared to just Krasny Kotelshik's debt.
- Weak use of Krasny Kotelshik's total production capacity (60% as of the end of 2006);
- Dependence of sales on utilities' sector company orders (more than 80% of revenue in 2006).

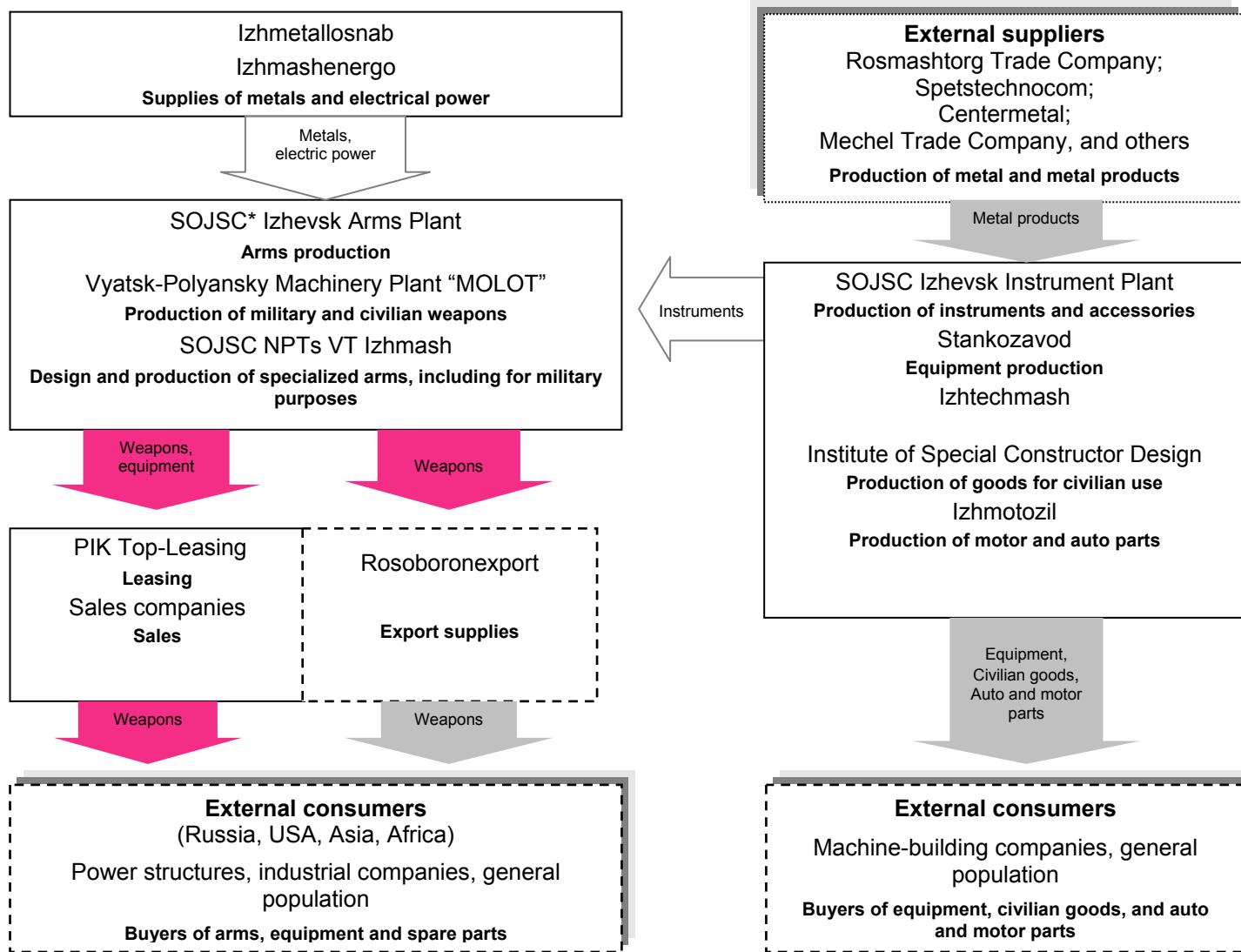
## EM-Alliance's financial indicators under management accounts, \$ mn

Indicator	2006	2007	Change
Revenue	100.5	130.0	29.3%
EBITDA	9.1	18.9	106.8%
Net Profit	-6.6	4.8	-172.4%
Assets	N/A	N/A	-
Financial Debt	N/A	N/A	-
Shareholders' Equity	N/A	N/A	-
Financial Debt/Assets	-	-	-
Financial Debt/EBITDA	-	-	-
EBITDA Margin	-	-	-

## Izhevsk Arms (Izhmash Group)

**Bond has been redeemed, no issues in circulation.**

Izhevsk Arms is one of the leading Russian and world arms producers (including the Kalashnikov automatic rifle and Dragunov sniper rifles). The company had 2006 revenue of \$112 mn.



\*Subsidiary open joint-stock company

The Russian state is the largest owner of Izhevsk Arms (owns more than 60% of shares).

### Main products of Izhmash Group:

- Military arms:
  - Kalashnikov and Nikonov automatic rifles;
  - Dragunov sniper rifles;
  - Grenades;
  - Pistols and machine-guns.
- Guided shells (Kitolov-2M, Krasnopol);
- Aircraft cannons (for MIG-29 and SU-27);
- Control-testing machines for guided weapons;
- Sport-hunting weapons;
- Grenades, mines, cartridges;
- Motorcycles;
- Mini cars;
- Lathes and tools.

Izhevsk Arms was formed on the base of OAO Izhmash, and is part of the Izhmash Group, which unites arms production companies and producers of several types of civilian goods. Izhevsk Arms includes production, support, purchasing, sales, leasing, and construction companies, as well as a series of non-profile assets.

The Group's main business segment is arms production, thus its financial reporting is held secret to a large extent.

Izhevsk Arms has leading positions in Russia for production of both civilian and military arms. According to company data, Izhevsk Arms had more than a 90% share of the Russian market for production of automatic arms for the national armed forces in 2007, and a greater than 95% market share for sniper arms.

The most well-known products made by Izhevsk Arms are the Kalashnikov sub-machine gun in various modifications, which is considered to be one of the most widespread weapons in the world (the weapon is used in the armies of more than 50 nations, with total numbers greater than 100 mn units). The Kalashnikov automatic rifle has no analogues in the world.

Izhmash supplies about 90% of all exports of hand-held arms from Russia. The company makes sales in Latin and North America, Asia, and Europe.

The company's largest contract, which it has been fulfilling since 2006, is for production of 500,000 Kalashnikov semi-automatic rifles (for a total cost of more than \$150 mn, the buyer is not made public).

The company closed a contract in 2006 for supplying 100,000 Kalashnikov weapons to Venezuela for \$54 mn. The company management announced in the middle of 2007 that it was preparing an agreement for selling grenades to Venezuela, as well as sniper and high-precision weapons.

A promising business segment for the company is sales of licenses abroad for producing Kalashnikov models (Venezuela, China, and Eastern Europe, while negotiations were held in the beginning of 2008 with India).

#### Izhevsk Arms consolidated management accounting financials under RAS for 2005 and 2006, \$ mn

Indicator	2005	2006	Change
Revenue	115.0	112.3	-2%
Gross Profit	26.7	33.7	26%
Net Profit	-8.7	1.5	-
Assets	314.4	342.0	9%
Financial Debt	96.8	133.5	38%
Equity Capital	101.5	107.1	6%
Financial Debt/Assets	30.8%	39.0%	8.2 p.p.
Financial Debt/Gross Profit	3.6x	4.0x	0.3x
Gross Profit Margin	23.2%	30.0%	6.8 p.p.

Izhevsk Arms showed positive dynamics in its financial results in 2006 as compared with 2005: gross profit increased by 26%, assets by 9%, and gross profit margin increased by 6.8 p.p. to 30%. The only exception from this tendency was revenue, which decreased by 2%.

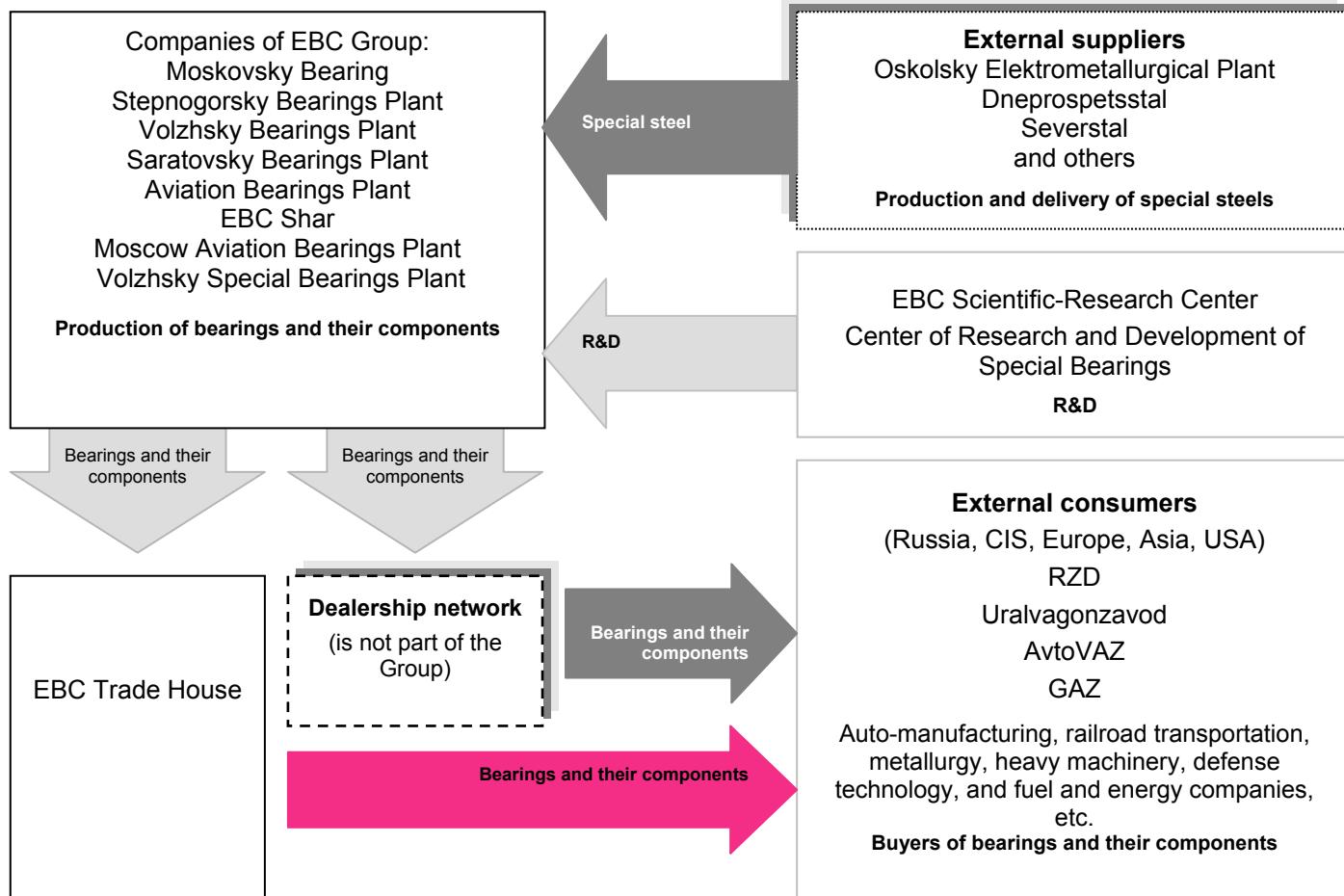
The Group's leverage increased in 2006, but is still on an acceptable level: the ratio of Financial Debt/Assets equals 30% (growth by 8.2 p.p.), while Financial Debt/Gross Profit was 4.0x (growth by 0.3x).

#### Risks:

- Low informational transparency of Izhevsk Arms and the Group (no audited and international financial reporting, information on arms production is kept secret, the structure of the company's revenue is not disclosed, and the Group has a complex legal structure);
- Loss of a significant share of potential profit from production of Kalashnikov automatic rifles due to illegal production (according to the company, about 90% of the Kalashnikov arms produced in the world are pirated versions);
- Un-uniformity in revenue (long terms for fulfilling large orders, while payments are made only after supplies are completed);
- Strong competition on external markets with China, India, and Europe.

## European Bearing Corporation Group (EBC Group) (3<sup>rd</sup> tier)

European Bearing Corporation Group (EBC Group) is the leader in bearings production by volume in the former USSR (26.5 mn units in 2006), controlling 30% of the CIS market. The Group controlled 40% of the Russian bearings market in 2007. **EBC Group had 2007 revenue of \$415 mn (preliminary data).**



The main beneficiaries of EBC Group (hereon EBC) are Oleg Savchenko and Alexander Moskalenko. Rumors surfaced at the end of February 2008 that entities belonging to Roman Abramovich had bought 50% of the Group. These rumors were officially denied, however.

EBC's main business is design, production, sales and servicing of bearings and their components. According to company data, the Group controlled about 98% of the Russian market in 2007 for precision bearings, 95% of the market for railroad bearings, and 19% of the market for metallurgic bearings.

EBC's production:

- Bearings of all constructive groups with an external diameter of from 20 to 2200 mm (more than 6000 types and sizes);
- Special equipment (marking, assembly, etc.);
- Bearing mount assemblies for automobiles;
- Various parts.

Export made up less than 10% of the company's revenue in 2006; the main deliveries were made to the CIS countries, the Baltic countries, Europe, the United States, and Asia.

EBC is currently restructuring the company. The final aim of this restructuring is to form a clear, transparent corporate structure:

- In 2005 the company separated a division for special production (Center for Research and Design, Aviation Bearings Plant, Moscow Aviation Bearings Plant, Volzhsky Special Bearings Plant). This division specializes in production of bearings for the defense, aerospace, and machine-tool sectors.
- In the future the company plans to form divisions for production of bearings for the automobile, railroad, and other sectors.

The Group's production facilities are located in Russia and Kazakhstan. The planned capacity of EBC's plants exceeds 50 mn bearings per year.

The key business segment which generated more than 50% of the Group's revenue in 2006 was production of goods for railroad transportation (axle bearings, roller bearings, ball bearings, and others). The main consumer of the company's goods is RZD, with which a long-term contract has signed for the period from 2005–2010 for a total cost of about \$650 mn, which means sales of about \$100 mn per year;

An important business segment for the company is production of automobile bearings. EBC goods are distributed to all conveyor plants in Russia. AvtoVAZ's share of bearings made by EBC equals about 70%, while at KamAZ 60% of all bearings are made by EBC, and at UAZ 100% of all bearings used are from EBC.

Sales and servicing of EBC products is done through the Trade House EBC trade-service network (with representative offices in Russia and the CIS countries) and a broad external dealership network. Deliveries to large companies are made directly by the Group without mediators.

The Group has a series of non-profile companies that provide servicing, automobile transportation, and repair-construction services, as well as instrument and equipment production, etc.

#### EBC Group financials under consolidated IFRS reporting for 2005– 2006, \$ mn

Indicator	2005	2006	Change
Revenue	245.0	302.0	23%
EBITDA	49.4	59.0	19%
Net Profit	21.0	28.0	33%
Assets	225.0	438.0	95%
Financial Debt	50.0	224.0	348%
Shareholders' Equity	125.0	164.0	31%
Financial Debt/Assets	22%	51%	29 п.п.
Financial Debt/EBITDA	1.0x	3.8x	2.8x
EBITDA Margin	20.2%	19.5%	-0.6 p.p.

EBC's financial results demonstrated positive growth in 2006 compared to the year before: revenue increased by 23%, EBITDA by 19%, and assets almost doubled. The company's EBITDA margin is at a high level for the machine-building sector at 19.5% (in 2006).

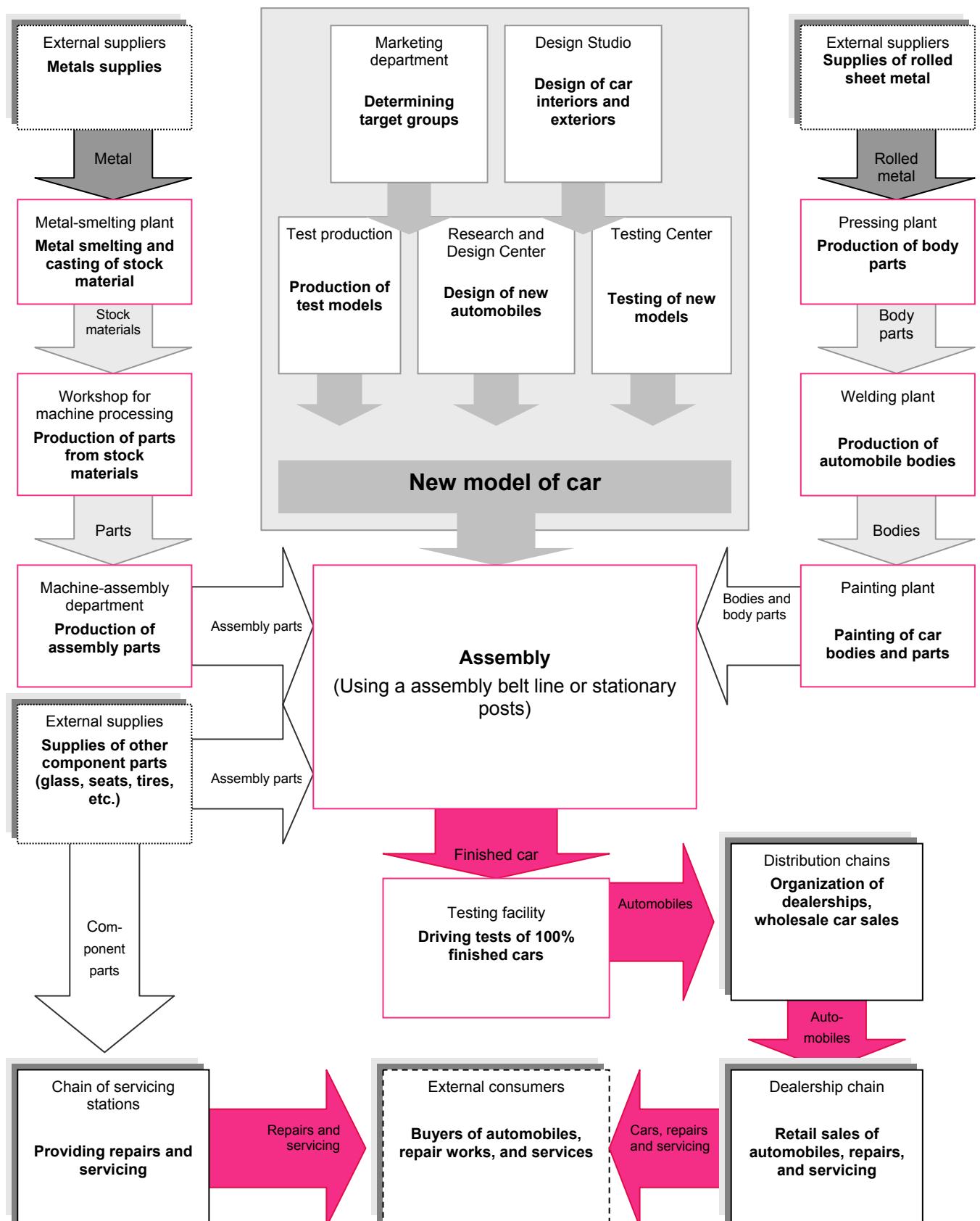
The company's financial debt increased by 4.5 times in 2006, which is a cause for concern, while the ratio of Financial Debt/Assets exceeded 50%. The company bought out its own bonds through a put option at the end of 2007 for a sum of about \$20 mn.

#### Risks:

- According to company data there was a decrease in 2006 in the total level of bearing production in Russia at the same time as there was an increase in production costs (for example, almost all of EBC's plants failed to fulfill their production plans in 2006);
- High leverage as of the end of 2006 (Financial Debt/EBITDA = 3.8x, Financial Debt/Assets = 51%);
- Growth in import and competition with producers from China, Eastern Europe, and the largest Western companies (before the introduction of anti-dumping excise duties at the end of 2007 against China the difference in prices between Chinese and Russian bearings equaled 45–72%);
- Dependence on one special steel supplier (more than 50% of the company's purchases of special steels at the end of 2006 came through Oskolsky Elektrometallurgic Plant);
- Complex legal scheme of EBC's assets (no parent structure that consolidates the Group's companies).

## Sub-sector: Car Manufacturers

### Business processes of car manufacturers



## Main features of the car manufacturing sub-sector

In general, the work of a car manufacturing plant can be viewed in the following way:

### 1. Design of a new automobile

The process begins with market research, which is meant to discover which car market niche the automobile should fill, and which buyers' needs the car should fulfill.

After identifying a target group of buyers the design subdivision then begins work. The design subdivision determines how the car will look and how it will be equipped. The scientific-technical center also begins working at this point. The scientific-technical center's task is to design the components of the vehicle: the chassis, engine, transmission, braking, lighting, and electronic systems, climate controls, etc.

Creating a complete concept for the design of the car as a whole and of each individual component can be done by the manufacturer itself (as it is done by AvtoVAZ, KAMAZ, and GAZ), or, in the example of the majority of the European leaders in the sector, by using the services of other parties. For example, BMW AG completely satisfies its needs for gear box manufacturing by making purchases from ZF, and places orders for complete design and assembly of certain models from Magna Steyr Group; KIA and Hyundai cooperate with the Italian design bureaus Pininfarina and Guigiaro Design for designing their vehicles; the Michelin Group designs tires with special characteristics specifically for Porsche, etc.

The first results of the design work are transferred for production testing in the form of technical specifications for producing preliminary models. These models then undergo many types of tests: in extremely cold and hot geographic zones, on various types of road coverings, in various weather conditions, and under varying regimes of use (in city traffic jams, in dusty regions, at top speeds, etc.). For example, the prototypes of the Mercedes C-class released in 2008 covered more than one million kilometers of test driving.

After "rough" tests are completed there is then a stage of "fine-tuning": the work of the chassis, gear box, and engine is optimized, sound-isolation and climate controls are regulated, etc. Finished pre-serial models undergo crash tests: front and side crashes, with various percentages of contact, off of deformed barriers and without, etc.

One interesting fact is that during the preliminary work process car manufacturers sometimes purposely distribute "spy" photographs of models in order to create interest in the new model among potential buyers.

Once the automobile passes the final preparation stage it is then released into serial production. As a rule, the first vehicles of the production line have "children's" diseases, which can be fixed relatively quickly. In the second-third year of a car model's lifetime, when the market is already losing interest in the model, it is then restyled: elements of the interior and body are redone, the engine line is changed, and the number of options available for the model is expanded. European plants generally develop entirely new models once every 5 to 6 years.

### 2. Production

The center of an automobile plant is the assembly facility, at which various parts are turned into a finished car. The given process may be organized either on a conveyor principle (the body is moved down a line, and gradually all parts are attached to it), or it may use stationary posts (the body stands motionless, and the parts that make the car are brought to the body). The first method is used in mass assembly, while the second is used when producing a small quantity of vehicles or when producing especially large transportation vehicles (buses, tractors, heavy trucks, special technical equipment).

Assembly production must be supplied with parts. Companies with a closed cycle make the main mass of parts themselves (as does, for example, AvtoVAZ). Only sheet metal is bought for the body: this metal is stamped in the pressing plant into pieces which are then transformed into a finished product in the welding plant. After the body's geometry is checked the body then goes to the painting plant, after which it is sent to the assembly line (conveyor).

Another "branch" of such technology is production of parts and components. Metal purchased in bars is melted and poured into forms. The machine processing plant gives rough stock materials their final form, thereby making "primary" parts. The latter enter the machine-assembly department, where "complex" parts are made from the primary parts. These complex parts are mounted directly onto the automobile (the engine, gear box, chassis, etc.).

As a rule, 100% of the cars that leave the conveyor undergo short driving tests. After that they are ready to be sold.

Car manufacturers buy certain parts from external counterparties; these parts are usually glass, rubber goods (including tires), electric equipment, and fabrics.

The "closed" production scheme, where both assembly parts and the cars themselves are built at one facility, is considered to be inflexible and poorly efficient. Modern plants in essence combine powerful scientific-technical centers together with assembly facilities, which make orders for making the majority of parts to external designers and suppliers.

The largest foreign car manufacturing companies, such as BMW, Ford, Renault, Toyota, and VW, etc., are all currently building or using production facilities in the Russian Federation. These facilities assemble pre-made automobiles shipped in from abroad (so-called car assembly kits). There are two types of assembly:

- SKD (semi knocked down), also called “screwdriver” production, which works with large parts and units. For example, in this assembly method the body of the car does not need additional processing;
- CKD (complete knocked down), also called “industrial” assembly. In this case the production cycle includes welding and painting.

Assembly parts are sometimes supplied from local partners to the production facilities of foreign companies.

This production method (import of car kits for localized assembly) makes it possible to lower the cost of the finished product since customs duties are significantly lower this way than they are for importing new cars into Russia.

### **3. Sales**

Sales may be organized under a three-level system: cars are sent from the production plant to distributors, from distributors to dealers, and then dealers work with the final consumer.

Traditionally distributors are affiliated with the assembly company, but can also serve as separate legal entities. Usually each distributor serves a certain region. The distributor organizes the work of the sales network in this region, and is responsible for wholesale sales of cars and spare parts, as well as for providing marketing support to the brand.

Distributors distribute cars between dealers. The latter are also sometimes part of the same Group as the production facility, but sometimes they keep independence. Dealers are responsible for retail sales of cars and parts, and providing servicing and repairs.

#### **All Russian car manufacturers face the same sector risks:**

1. Competition between domestic Russian producers and imports is growing at present, and in all segments (light and cargo automobiles, tractors, buses, and special equipment). Actively growing local companies organized by foreign groups are also adding fuel to the fire.
2. Metal makes up a significant share of automobile production costs, in other words there is direct dependence of a car manufacturer's business margin on prices for raw materials.
3. Aging of technological capacity at Russian companies.

#### **Russian car market growth in 2007**

More than 2.7 mn light cars were sold in Russia in 2007, for a total of more than \$50 bn. The Russian car market grew by 67% in 2007 compared to 2006.

Sales of new cars increased by 37% to 2.4 mn units, which brought the Russian car market into third place in Europe after Germany and Great Britain.

Foreign used cars and “grey” imports made up 14% of the market in 2007, or about 380,000 cars (+46% on 2006 in terms of quantity).

Russia is becoming an attractive region for foreign producers: Russia is Toyota's largest market in Europe, while for Mitsubishi, Russia is the second largest market in the world after Japan.

#### **Share of the Russian car market in 2007**

LADA is the leader on the Russian car market in quantitative terms (29% of the market for new car sales), however, foreign brands' positions are strengthening: sales of new foreign cars assembled in Russia increased by 60% in 2007, while import volumes increased by 64% y-o-y.

GM (10.9% of the new car market) and Ford (10.7%) retained their market leadership among foreign manufacturers. After these two US companies come Renault-Nissan (9.3%), Kia-Hyundai (9.1%) and Toyota (6.6%).

The most successful foreign brands in 2007, exceeding the 150,000 car mark, were Chevrolet and Ford.

Official dealers of Chinese passenger cars increased sales by 2.5 times in Russia in 2007 to 57,000 cars, which equaled 2.4% of total car sales in Russia.

## Map of car manufacturing facilities in the Russian Federation as of February 2008

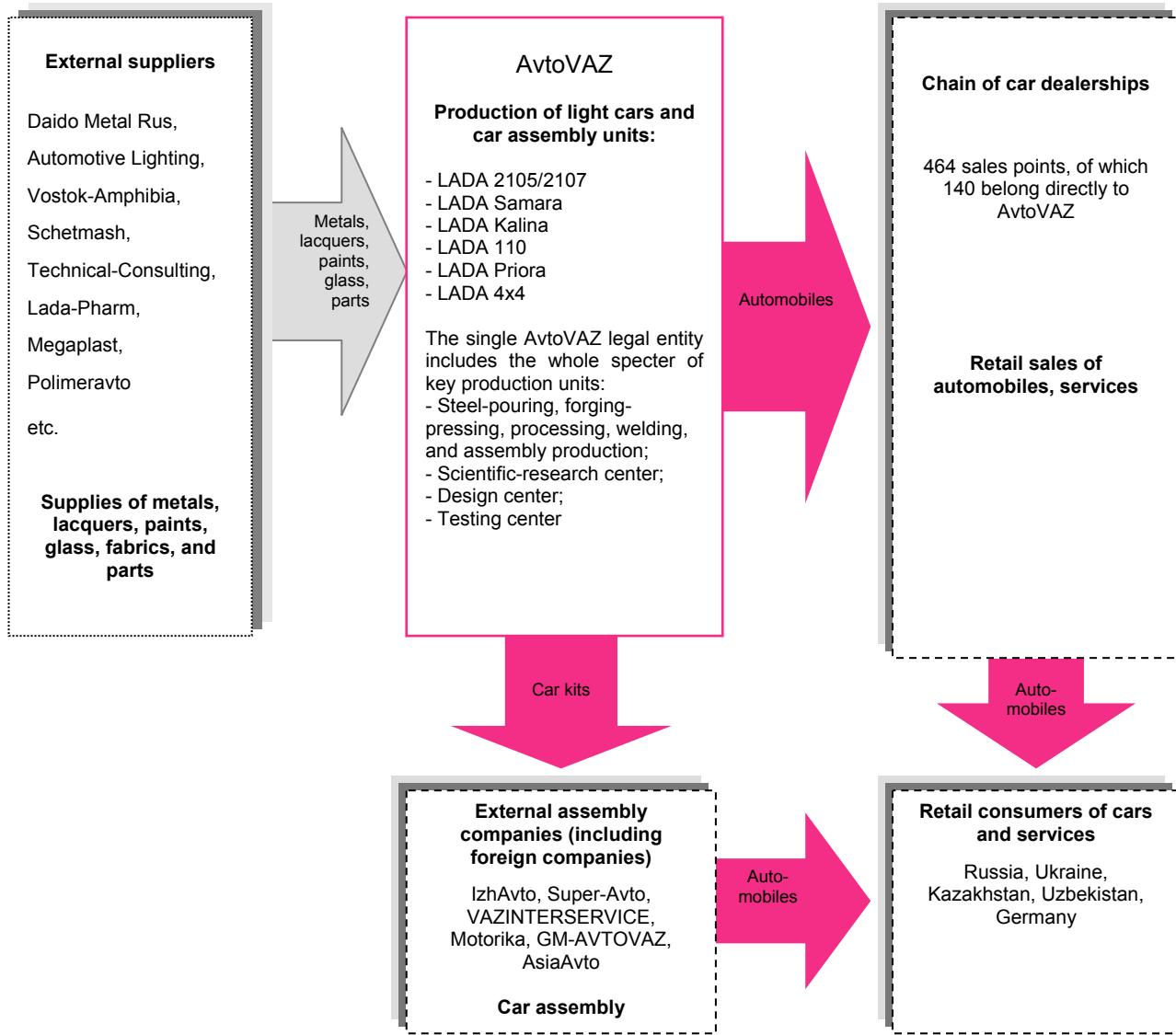


## Car Manufacturers

### AvtoVAZ Group (1<sup>st</sup> tier)

Design and production of light cars. AvtoVAZ produced 791,000 cars and 112,000 car assembly units in 2007, which equals 29% of the Russian market of new automobiles by quantity. The company had 2007 revenue of \$7.34 bn.

Ratings: PA AK&M: A/Stable; National Rating Agency: BBB+



AvtoVAZ is the largest Russian designer and producer of passenger cars.

At present AvtoVAZ produces 14 vehicle models belonging to six main families:

- LADA 2105/2107 (208,000 cars sold in 2007; -1.2% compared with 2006);
- LADA Samara (sedan, 3- and 5-door hatchback) (188,000 cars; -1.5%)
- LADA 110 (LADA 110 sedan, LADA 110 hatchback, LADA 110 universal, LADA 112 Coupe) (122,000 cars, +4%);
- LADA Kalina (sedan and hatchback) (78,000 cars; +50%);
- LADA Priora (sedan) (58,000 cars; +4%);
- LADA 4x4 (3- and 5-door SUV) (29,000 units; +9%).

Altogether in 2007 AvtoVAZ sold 684,000 cars in Russia, or 4.5% more than in 2006. Furthermore, 107,000 cars were exported and 112,000 car assembly kits were delivered to assembly companies in Russia and abroad.

AvtoVAZ Group has more than 110,000 employees.

AvtoVAZ has two main production workshops: an "old" and a "new unit". The former has production equipment that was built in the 1970s, and is used for producing the most mass models: the rear-wheel drive LADA 2105 and 2107, and the front-wheel drive LADA Samara, LADA 110 and LADA Priora. The three-door, 4-wheel drive LADA 4x4 (the old "Niva") is also made here.

The LADA Kalina is being assembled in the new Eisenmann production facility. This facility's capacity exceeds production needs at present; total capacity equals 220,000 vehicles, while in 2007 only 78,000 vehicles were produced at the facility.

AvtoVAZ has one more production facility as well — the testing-industrial production unit, where at present the five-door LADA 4x4 and the three-door LADA 110 hatchback are assembled.

Unlike European analogues, AvtoVAZ is a completely closed-type manufacturer with its own steel-pouring, forging-pressing, processing, welding and assembly units. Furthermore, all sub-units are located together at one facility.

The plant's servicing and sales chain in Russia consists of 400 dealers and distributors, and has 464 sales outlets altogether. AvtoVAZ participates in the capital of 140 of the companies in the chain.

Sergey Viktorovich Chemezov is the chairman of AvtoVAZ's board of directors. Mr. Chemezov is the CEO of Rosoboronexport federal unitary company.

**Renault bought a blocking stake in the plant on February 29, 2008 for \$1 bn. The company's current shareholders are Renault, Troika Dialog, and Rostechnologies.**

It is planned that AvtoVAZ will receive investments, technologies, and qualified specialists from Renault. The latter intends to include its own representatives in AvtoVAZ's management: Hugh Desmarchelier will be in charge of production planning, while Christian Muller will be responsible for purchasing. Yann Vincent, Renault's senior vice-president for quality, will become AvtoVAZ's Chief Operating Officer. Three candidates will be delegated from Renault to AvtoVAZ's Board of Directors.

It is not out of the question that with the help of its foreign partners AvtoVAZ will be able to re-fit its old production facilities, which will increase the company's production capacity from the current 900,000 cars per year to 1.5 mn automobiles. According to the managers of the French group, AvtoVAZ's priority development aim will be to strengthen the LADA brand.

**For info:** AvtoVAZ together with Moscow University "Stankin" won a contest organized by the Russian government for an investment project worth RUR230 mn in 2007. This project calls for producing robots which can lift from 15 to 350 kgs by 2009. These robots will be built by AvtoVAZ engineers and will be produced at AvtoVAZ's Production Unit for Technological Equipment. A total of up to 1,000 robots per year will be produced.

AvtoVAZ provides financial reporting under IFRS.

**Risks:**

- The decrease in AvtoVAZ's market share from 44% in 2004 to 29% in 2007 will likely continue in the future;
- Production of all parts at one facility together with assembly production will slow down the implementation of new products;
- Production lines for mass models (Priora, Samara, 2107, and 4x4 models) feature old equipment which have been used for more than 20–30 years;
- AvtoVAZ has a difficult situation with its latest design — the class B Kalina model:
  - According to the company's management a mistake was made when planning the volume of demand for the model; at the present time production capacity is only 50% of total capacity;
  - The total amount of investments into launching the project exceeded by 1.5 times the original sum written into the company's budget.

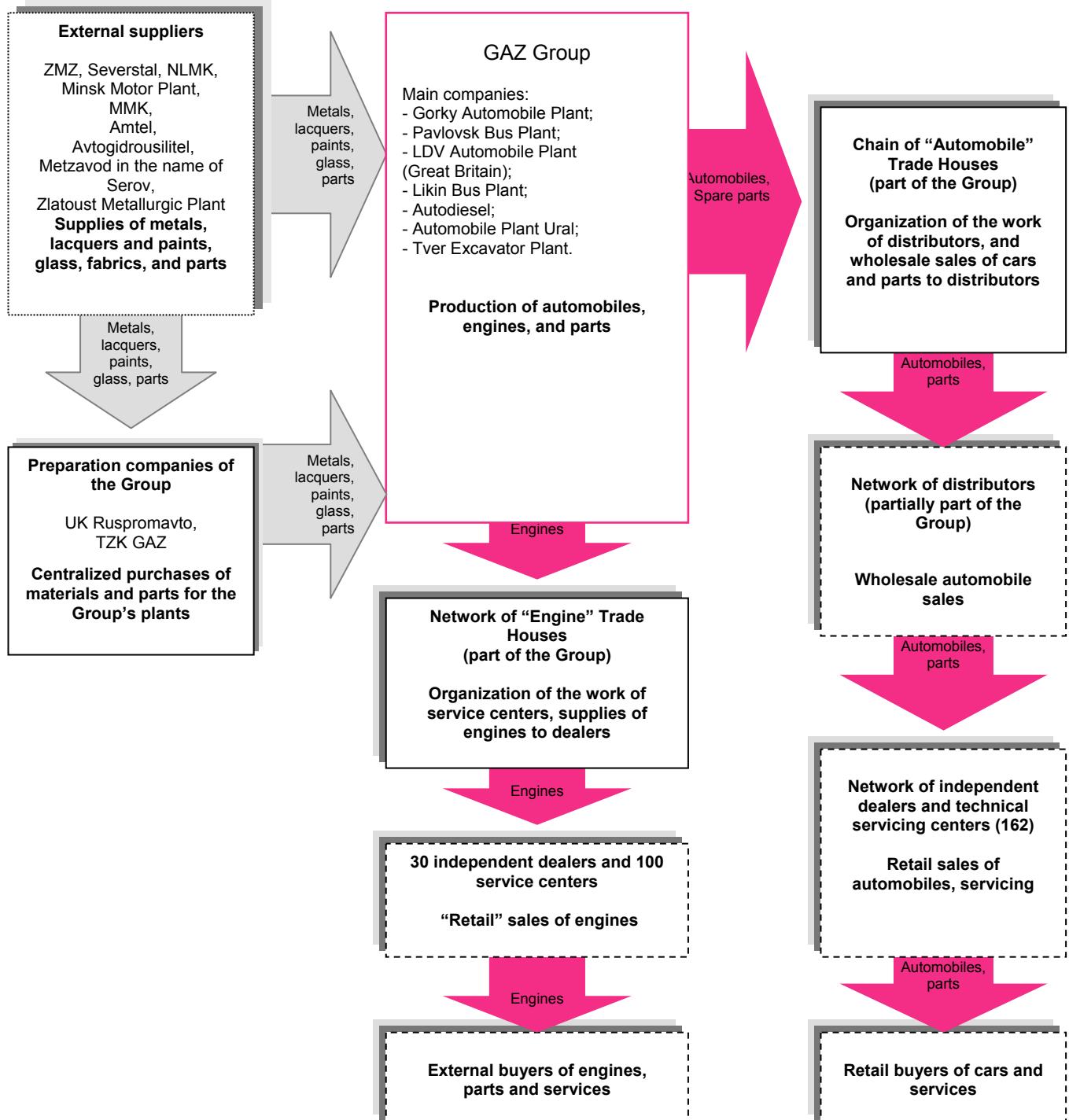
**AvtoVAZ Group financial indicators under IFRS, \$ mn**

Indicator	2006	2007	Change
Revenue	6 630.2	7 339.9	10.7%
Gross Profit	358.2	342.4	-4.4%
Net profit	129.9	143.6	10.6%
Assets	6 447.8	7 143.3	10.8%
Financial Debt	1 400.4	1 520.1	8.5%
Shareholders' Equity	3 077.0	3 388.3	10.1%
Financial Debt/Assets	21.7%	21.3%	-0.4 p.p.
Financial Debt/Gross Profit	3.9	4.4	+0.5
Gross Profit Margin	5.4%	4.7%	-0.7 p.p.

## GAZ Group (1<sup>st</sup> tier)

GAZ Group is one of the leading car manufacturing holdings in Russia. The company produces goods under 14 trademarks. GAZ Group is made up of 18 subsidiaries located in Russia and Great Britain. **The Group had 2007 revenue of \$5.979 bn.**

Ratings: None.



GAZ Group is one of the largest car manufacturing holdings in Russia. The company has 18 subsidiaries located in 10 regions of Russia and Great Britain. The company produces light commercial vehicles (LCV) with weight up to 3.5 tons, heavy trucks weighing up to 10 tons, middle class light cars, buses, diesel engines, and auto assembly parts.

GAZ Group's revenue structure in 2007 (altogether \$6 bn):

- Volga, Siber, Gazelle, Sobol, Maxus, Gazon, Sadko, and Valdai automobiles (under preliminary data for 2007, a total of 210,000 cars were produced; +9.8% y-o-y) for \$2.3 bn (38% of total revenue);
- Buses under the PAZ, LiAZ, GolAZ, KAVZ brands (22,000 buses; +8% vs. 2006) for \$720 mn (12%);
- Large-cargo automobiles (16,000 units; +10% y-o-y) for \$720 mn (12%)
- Diesel and gasoline engines (111,000 units; +5% vs. 2006) for \$480 mn (8%);
- Construction equipment (4,000 units, +42% vs. 2006) for \$300 mn (5%);
- Parts and other types of production for \$1.4 bn (23%).

The Group has strong competitive positions in Russia: 55% on the LCV (light commercial vehicle) market, 60% in the middle-tonnage truck segment, and 61% in the all-wheel cargo car segment. GAZ Group's market share in the bus segment equals 65%, while in the diesel engine segment it has a 60% market share.

GAZ Group's main business is production of LCVs; the most well-known representative of this class is the GAZelle model and its modifications.

GAZ Group employs 50,000 people.

Ownership structure: OAO GAZ is a consolidation center for the GAZ Group. GAZ Group is part of the Russian Machines holding. OAO GAZ's largest shareholder as of 01.08.2007 was Russian Machines (61%). GAZ Group's management company is OOO UK Gruppa GAZ.

The Chairman of GAZ's Board is Erik Eberhardson, the former head of Ford's European Division.

#### Main subsidiaries of GAZ Group:

Company	Goods produced	Location
Gorky Car Plant	Light commercial, cargo and passenger automobiles, such as the GAZelle, Sobol, Valdai, Sadko, and Volga models	Nizhny Novgorod
Pavlovsk Bus Plant	PAZ light and middle-weight buses	Nizhegorodskaya Region, Pavlovo
LDV Automobile Plant	MAXUS light commercial trucks	Birmingham, Great Britain
Likin Bus Plant	LiAZ city buses	Moscow Region, Likino-Dulyovo
Autodiesel	YaMZ diesel engines and power units	Yaroslavl
Ural Automobile Plant	Ural automobiles	Chelyabinsk Region, Miass
Tver Excavator Plant	TvEx caterpillar and wheeled excavators	Tver

For info:

1) The launch of the "heir" to the Volga passenger car – the GAZ Siber – took place on March 28, 2008. GAZ Group plans to produce 14,000 Siber cars by the end of 2008, while another 45,000 will be produced in 2009. The official start of sales is set for September 1, 2008. GAZ Group and Chrysler signed an agreement on GAZ purchasing the equipment of the Sterling Heights Automotive Plant in April of 2006. GAZ Group bought a license for production of automobiles on a Chrysler platform as part of this deal. This platform is being used as the base for the Siber model.

A new production complex was built at Gorky Automobile Plant (GAZ) for manufacturing Siber cars. This complex includes a facility for assembly and welding of car frames and a facility for assembling the automobile. Furthermore, the painting complex at Gorky Automobile Plant was modernized. The full technological cycle was brought into use in the beginning of 2008. The total investment volume into the project exceeded \$290 mn.

2) At present (data from the end of March 2008) GAZ Group is leading negotiations for buying VM Motori, the Italian producer of diesel engines. GAZ Group needs its own, modern diesel engine with a volume of 2-3 liters for its GAZelle model and other automobiles in its class. Presently a large part of GAZelles are assembled using engines bought from ZMZ (part of Severstal-Avto Group).

GAZ Group publishes financials under IFRS.

**Risks:**

- The company's product line is made up of old models.

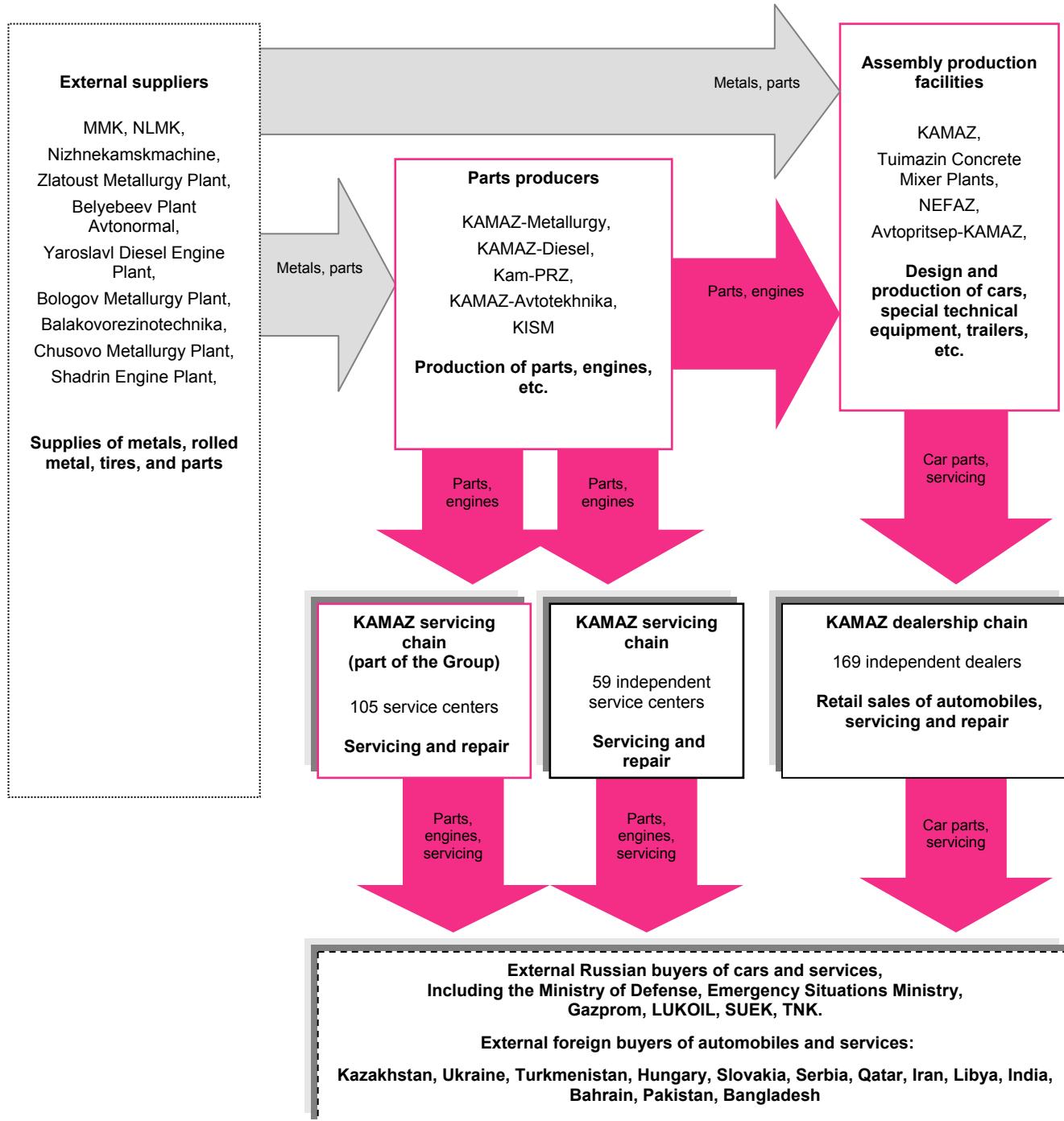
**GAZ Group financial indicators under IFRS, \$ mn**

Indicator	2006	2007	Change
Revenue	4 432.0	5 979.4	34.9%
EBITDA	453.3	606.6	33.8%
Net Profit	219.6	281.8	28.3%
Assets	2 111.3	2 852.2	35.1%
Financial Debt	772.1	1 078.4	39.7%
Shareholders' Equity	606.9	878.3	44.7%
Financial Debt/Assets	36.6%	37.8%	1.2%
Financial Debt/EBITDA	1.7	1.8	7.5%
EBITDA Margin	10.2%	10.1%	-0.1%

## KAMAZ Group (1<sup>st</sup> tier)

KAMAZ Group is one of the world's ten largest manufacturers of heavy trucks with a mass greater than 14 tons, and is the 8<sup>th</sup> largest company in the world in terms of diesel engine production. The company had 2007 revenue of \$3.805 bn.

Ratings: None.



KAMAZ Group is one of the top ten world manufacturers of heavy trucks with a weight over 14 tons, and is in 8<sup>th</sup> place in the world in terms of diesel engine production volumes.

**KAMAZ produces:**

- Trucks, and special and agricultural technical equipment (production capacity: 65,000 units/year);
- Trailers (production capacity: 21,000 units);
- Buses (production capacity: 1,500 units);
- Engines, spare parts (production capacity: 70,000 engines).

KAMAZ had 2007 revenue of \$3,336 mn (+23%), and net profit of \$135 mn (an increase by 4.8 times y-o-y).

The company produced 53,000 trucks in 2007, as well as 63,000 engines (+21%), spare parts for a total sum of \$390 mn (+22%), and other products for \$390 mn (+31%), including sales by KAMAZ on the Russian market of:

- 38,235 vehicles (+20.5%) of 14-40 tons;
- 958 vehicles (+34.6%) of 8-14 tons;

On the domestic market KAMAZ sold a total of 39,193 trucks, which is 20.8% more than in 2006 (32,455 vehicles).

The share of exports in total revenue equaled 25%.

KAMAZ considers special technical equipment and dump trucks to be its key products. According to company information, KAMAZ controls about 50% of the Russian domestic market for new tractor-trailer trucks, special technical equipment, dump trucks, and high-sided trucks, as well as 2% of the market for highway tractor-trailer trucks.

**KAMAZ ownership structure:**

- Troika-Dialog = 54.3%
- Rostechnologies = 37.8% (since June 2008)
- KIMCO (USA) = 4.3% (this is not management, as was given to understand, but a related party)
- Management = 2.0%

Troika plans to sell 42% of its stake to Germany's Daimler, which is now conducting due diligence at KAMAZ. The process is planned to be completed at the end of October 2008, at which time the conclusion (or rejection) of the deal will be announced.

Another shareholder, Rostechnologies, announced its intention to reduce its stake to blocking, selling the remaining shares as soon as the stock market normalizes. It plans to use the proceeds of the sale on developing other enterprises that are part of the Rostechnologies holding.

According to statements by management, the presence of Rostechnologies as a shareholder, rather than direct participation by the government, will reflect positively in efficient decision making.

**Closing of the deal with Daimler will positively influence KAMAZ:**

- Daimler requires inexpensive trucks in its product line for sales in developing countries;
- KAMAZ currently has 11 assembly joint ventures with Daimler which are increasing sales performance and assembly of LCVs and buses;
- After closing the deal, Daimler will send 100 of its employees to KAMAZ to increase the Russian auto concern's efficiency;
- If the deal with Daimler does not go through, KAMAZ will continue searching for a strategic investor.

KAMAZ Group's production complex includes the whole technological cycle for building trucks — from design, production and assembly of cars to sales and mechanical servicing. The company's main production assets are located in the city of Naberezhnie Chelny.

Altogether more than 100 companies are part of the KAMAZ Group. The Group's companies employ more than 52,000 workers altogether.

Leasing: KAMAZ Leasing plans to sign contracts in 2008 for 7,000 automobiles, about 530 buses and 700 trailers for a total sum of \$430 mn (RUR11 bn). The company will open 10 new branches and 20 additional offices by the end of 2008. At present the company's leasing portfolio exceeds \$860 mn (RUR22 bn), while altogether more than 12,000 units have been sold.

### Russian domestic market for imported European-made heavy trucks in 2007:

A total of 19,000 new heavy trucks imported from Europe were sold in Russia in 2007. This led to growth in sales of 114% y-o-y; in other words, sales of foreign trucks had even better dynamics last year in Russia than did sales in the passenger car segment (+61%). The market leaders are:

1. Scania (27%, 5,337 units): The company's management decided in the middle of 2007 to build its own factory in Russia thanks to high demand for Scania trucks. The new plant will have production capacity of up to 10,000 cars per year.
2. Volvo (23%, 4,508 units): The company has already begun construction of a new plant in the Kaluga Oblast.
3. MAN (22%, 4,219 units): The company's success was made possible by the launch in 2007 of an assembly plant in Krakow (Poland).

KAMAZ increased its sales of heavy trucks in Russia by 22% in 2007 to 39,000, while sales of Ural brand heavy trucks, produced by GAZ Group, increased by 48% to 14,000 units.

According to forecasts, growth in the Russian heavy truck market will be no lower in 2008 than it was in 2007, which will lead to an increase in sales of at least 50%.

#### KAMAZ's strategy for the next five years:

- Focus on minimizing expenses
- Active marketing, increasing market share up to 40% in various segments
- Develop a strategic partnership in component production, including joint ventures with foreign companies
- Increase its competitiveness in attracting personnel, including through increasing salaries
- Widen the product line – enter the market for prime movers, update current vehicle family

**Capital expenditures will be \$1.8 bn in the next five years.** Investments will be directed to reengineering (updating production) and developing the service network (\$250 mn); the company plans to establish 50 new service centers, including through independent dealers.

In connection with the tense situation in the financial sector, sales volumes for 2007 in Kazakhstan fell two-fold (from 7,000 to 3,500 trucks), however, due to the exit of the majority of competitors from the market, KAMAZ's market share in Kazakhstan grew to 90%.

#### Risks:

- Greater competition with imported heavy trucks, including Chinese models;
- The likelihood of stronger market positions on the part of foreign producers (Scania, Volvo, MAN, and ISUZU), which have either announced their plans or are already building assembly plants in Russia;
- Dependence on counterparties: KAMAZ states that it has no alternative suppliers for 38% of its parts;
- The company's product line includes out-dated models;
- Lack of current consolidated financials.

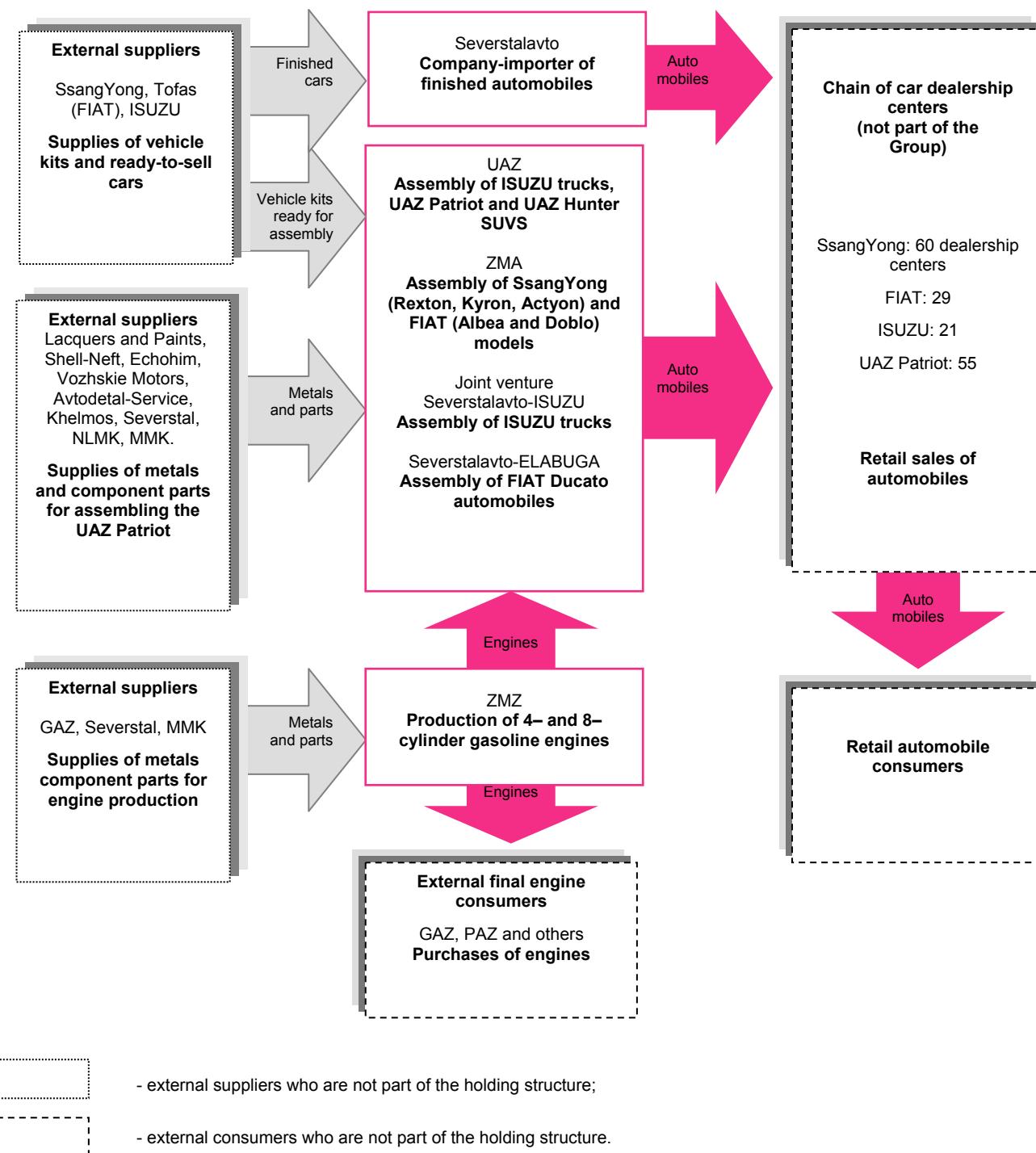
#### KAMAZ Group financial indicators under IFRS, \$ mn

Indicator	2006	2007	Change
Revenue	2 616.9	3 805.2	45.4%
EBITDA	200.2	428.1	113.9%
Net Profit	152.6	307.9	101.8%
Assets	2 266.9	2 674.3	18.0%
Financial Debt	435.6	499.0	14.6%
Shareholders' Equity	1 197.8	1 349.5	12.7%
Financial Debt/Assets	19.2%	18.7%	-0.6%
Financial Debt/EBITDA	2.2	1.2	-101.0%
EBITDA Margin	7.6%	11.3%	3.6%

## Sollers Group (Severstal-Auto) (2<sup>nd</sup> tier)

Assembly of ISUZU trucks, UAZ Patriot and UAZ Hunter sport-utility vehicles (51% of revenue for 2006), SsangYong (Rexton, Kyron, Actyon) and FIAT (Albea, Doblo, Ducato) models (10% of revenue). Production of 4- and 8-cylinder gasoline engines (35% of revenue). The company also imports and sells SsangYong, ISUZU, and FIAT cars. The company had 2007 revenue of \$1.921 bn and 1H08 revenue of \$1.262 bn.

Ratings: None



**Sollers Group** is a Russian automobile holding which owns controlling stakes in Ulyanovsk Automobile Plant (UAZ), Zavolzhsky Motor Plant (ZMZ), Zavod Microlitrage Automobiles (ZMA), Severstalavto-ELABUGA, and Severstalavto-ISUZU.

**Business segments of Sollers Group:**

- Assembly of ISUZU trucks, 4-wheel drive UAZ Patriot and UAZ Hunter SUVs using the production facilities of UAZ (RUR9.7 bn in revenue for 1H08);
- Production of 4- and 8-cylinder gasoline engines using the production facilities of ZMZ (RUR7.0 bn in revenue for 1H08);
- Assembly of SsangYong (Rexton, Kyron, Actyon) and FIAT (Albea and Doblo) models using the production facilities of ZMA (RUR9.7 bn in revenue for 1H08);
- Assembly of FIAT Ducato models using the production facilities of Severstalavto-ELABUGA (starting from 2008);
- Assembly of ISUZU trucks using the production facilities of Severstal-ISUZU (RUR2.6 bn in revenue for 1H08);
- Import and sales of SsangYong, ISUZU, and FIAT automobiles in Russia.

Automobiles manufactured at Severstal-Avto Group's production facilities are sold by an independent chain of dealers (221 centers).

The Group sold 31,000 all-terrain UAZ automobiles taking into account supplies to the Internal Affairs Ministry and exports in 2007, thereby controlling about 30% of the Russian market for medium-sized SUVs.

The Group's main owner is V.A. Shvetsov, who is also the company CEO. Mr. Shvetsov owns 58% of the shares in Severstal-Avto (the remaining 42% are in free float).

**Positive results for 1H08:**

- Vehicle segment revenue grew by 51% on 1H07, EBITDA margin was 10%;
- Engine production segment revenue grew by 11% on 1H07, EBITDA margin was 20%;
- EBITDA grew by 37% on 1H07;
- Net profit grew by 20% on 1H07;
- Revenue by brand: UAZ = RUR9.7 bn; ZMZ = RUR7.0 bn; SsangYong = RUR5.5 bn; FIAT – RUR4.2 bn; ISUZU = RUR2.6 bn.

**Fall in engine sales volumes by 6%:** according to management, the fall in engine sales volumes was due to decreased demand for the Volga, and consequently, decreased demand for Sollers' engines.

**Sollers Group's plans for long-term financing:**

- The Group's indicative volume of net debt at the end of 2008 = \$510-520 mn;
- Average loan rate = 9%;
- Total of RUR17 bn in open limits at VTB and Sberbank;
- The Group plans to place up to RUR5 bn in commercial paper on the market, as well as a regular bond of RUR3 bn – but it is waiting for favorable market conditions.

**Sollers has signed a protocol for establishing a joint venture with FIAT to produce the Albea**

- In June 2008 Sollers signed a protocol with FIAT to establish a joint venture to produce and sell FIAT automobiles; the first in the line is to be the Albea;
- Production is planned to begin in December 2008 with sales to start in January 2009.

**Two new dealer centers have been opened**

- Sollers has opened two new dealerships: in Golyatin (Moscow Region), the Group's largest dealership; and in St. Petersburg (2<sup>nd</sup> largest dealership);
- A new dealership is planned for Nizhny Novgorod.

**New business directions**

- Sollers Group has launched a new business: distribution of construction and farming machines.

**Production capacity:**

- UAZ: 110,000 automobiles per year (50,000 SUVs and 60,000 commercial cars);
- ZMZ: 350,000 engines per year;
- ZMA: 80,000 automobiles per year.

SsangYong Rexton and Kyron models as well as FIAT Albea and Doblo models are produced using the CKD method (complete knocked down, or “industrial” assembly, which includes welding and painting). A separate factory for production of FIAT Linea sedans with a capacity of 50,000 cars per year will be built in Elabug by 2009.

**Sollers Group** will invest a total of \$280 mn (RUR7.3 bn) into production development in 2007.

The Group is characterized by high informational transparency: Severstal-Avto publishes its financials under IFRS, and was the first among Russian car manufacturers to make an IPO in Russia. Severstal-Avto shares are also traded as GDRs on the off-exchange market in London.

The Group has a diversified revenue structure (61% of revenue is formed from sales of 8 automobile models of its own production, while 35% of its total revenue comes from its own engine production). The company has strong financial results: altogether in 1H2007 the ratio of Financial Debt/Assets equaled 22.3%, while the company's ratio of Financial Debt/EBITDA equaled 1.3x.

The first Isuzu trucks with a carrying capacity of 5.5 tons came off the conveyor at the Group's Severstalavto-ISUZU plant in Tatarstan on February 20, 2008. The company plans to produce no less than 7,500 Isuzu trucks with a carrying capacity from 950 kg to 5.5 tons by the end of 2008.

**Risks:**

- Debt has grown over the past year and a half (The Group's leverage remains low).

**Sollers Group financial indicators under IFRS, \$ mn**

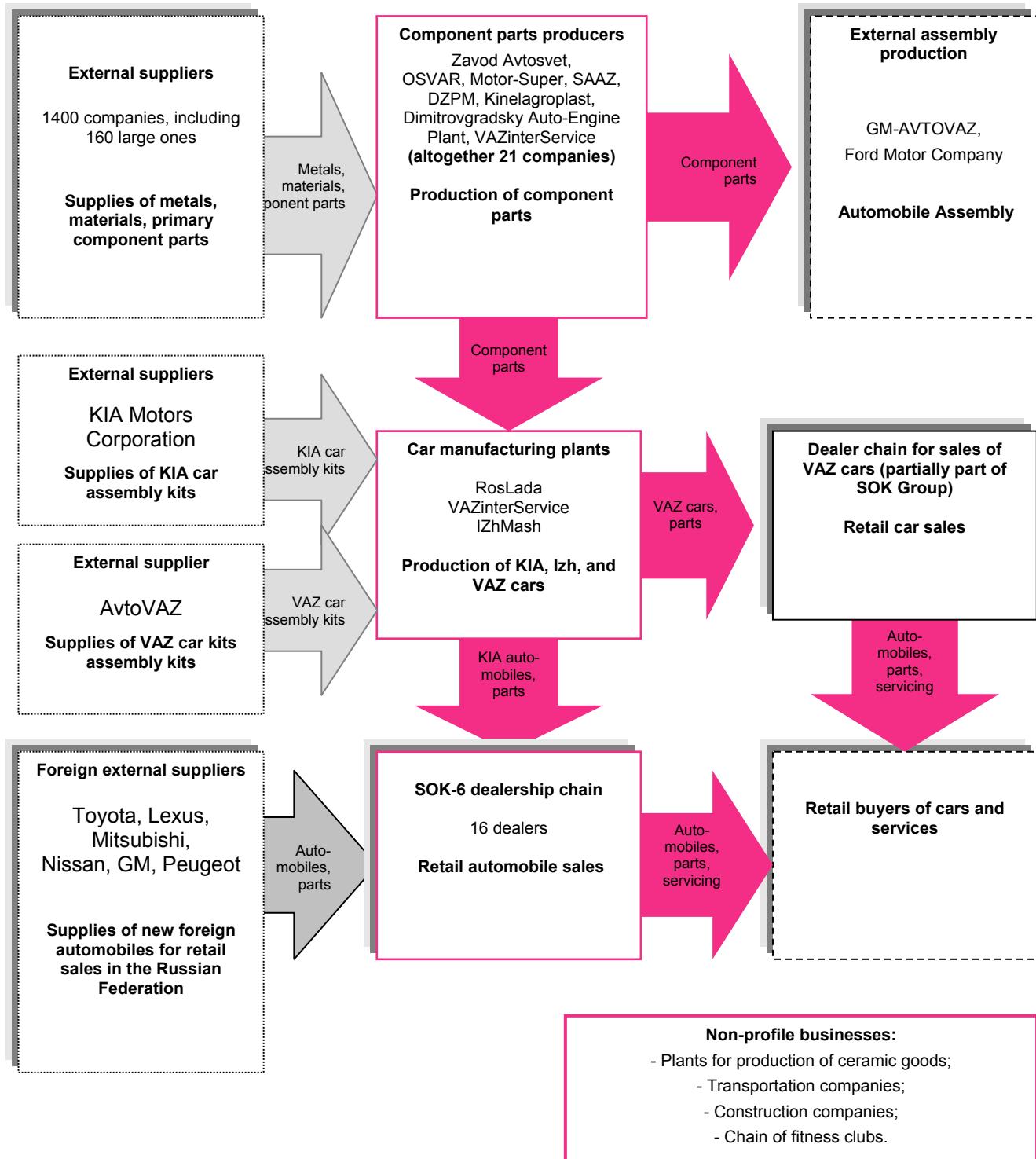
Indicator	2006	2007	Change	1H2008
Revenue	1 233.1	1 921.0	62.5%	1 262.0
EBITDA	161.9	242.0	49.0%	152.0
Net Profit	90.8	102.0	17.2%	81.0
Assets	1 043.4	1 550.0	55.0%	2 050.0
Financial Debt	133.6	352.0	175.0%	584.0
Shareholders' Equity	617.8	751.0	26.8%	816.0
Financial Debt/Assets	12.8%	22.7%	+9.9 p.p.	28.5%
Financial Debt/EBITDA	0.8x	1.5x	0.7x	1.9
EBITDA Margin	13.1%	12.6%	-0.5	12.0%

## SOK-Avtokomponent (SOK Group) (2<sup>nd</sup> tier)

Issue has been redeemed, no bonds in circulation.

SOK Group is a multi-profile holding; the Group considers the automotive business to be its main priority (production of car parts, assembly, and retail sales of transportation means). The company had 2006 revenue of \$2.8 bn.

Ratings: None.



SOK Group includes:

- Plants for assembling KIA, VAZ, and Izh (IzhAvto, RosLada, and VAZinterService) cars;
- Plants for production of car component parts (21 companies in 5 regions of the Russian Federation);
- Auto dealership companies (SOK-6 sub-holding);
- Transportation companies (SOK-Terminal, SOK-Trans-Consult);
- Construction companies (United Construction Concern);
- Chain of fitness clubs under the SOK-Fitness brand.

Altogether SOK Group unites more than 100 entities. There is no information available about a parent company of the holding which consolidates assets and/or financial flows of the Group.

The Group names the automobile business as its priority business segment (manufacture of car component parts, assembly and retail sales of automobiles).

**The company's main production assets are described in more detail below.**

**Car manufacturing plants.** The Group's largest subsidiary is IzhAvto. See below for a more detailed description.

**Production of component parts segment.** SOK Group controls a significant position on the Russian auto parts market: it produces breaking systems, radiators, spherical joints, and heating gauges, and is also the largest producer of lighting equipment (the Group controls the OSVAR, Avtosvet, Dimitrovgradsky Light Plant, and Schetmash) as well as normals and shock-absorbers.

**Autodealership segment.** The SOK-6 sub-holding performs automobile sales of the following brands: Toyota, Lexus, KIA, Nissan, Infiniti, Mitsubishi, Peugeot, Ford, Daewoo, GM (Hummer, Saab, Cadillac, Chevrolet, and Opel), VAZ, and Chery. Altogether in 2006 the largest share of the company's sales came from sales of Russian cars (about 30% of sales were for VAZ and IZh cars), while 19% came for Toyota cars, and 10% for KIA cars. SOK-6's chain of dealers sold about 33,000 cars in 2007.

The company's retail sales business is primarily focused in Samara: the company has 14 dealership centers in this city, as well as one each in Orenburg and Nizhny Novgorod. At present the company is preparing to open another 8 sales centers in Samara, two in Saratov, four in Orenburg, and one each in Stavropol, Novosibirsk, Tyumen, and Moscow. The company has also bought land plots for placing its distribution centers: two plots in Nizhny Novgorod and one each in Ulyanovsk, Saratov, and Penza. Altogether the SOK-6 chain is planned to be expanded to 90 centers by 2014.

**Construction segment.** United Construction Concern of SOK Group is a group of companies which work in the spheres of building bridges, roads, and industrial-civil buildings. The revenue of the companies which make up the concern equaled more than \$600 mn in 2007. More than 10,000 people work at the companies in this division.

At present the ownership structure and configuration of SOK Group is changing so as to develop a more important business segment — automobile manufacturing. For this aim the Group sold its SOK Insurance Company in 2006 (35<sup>th</sup> place in Expert's rating for 2006), while in 2005 the company sold off Promek Bank and two movie theaters. SOK Group left the land plot of the former plant Volgacable in August of 2007 in favor of X5 Retail Group for the latter to build a mall and entertainment center on the plot.

Negotiations are currently underway with AvtoVAZ and Chinese companies for selling shares in IzhAvto.

The main owner of SOK Group is Yury Kachmazov, the Chairman of the Company's Board of Directors. The president of SOK Group is Alexey Savchenkov, one of the holding's founders.

#### **Information about the Russian auto parts market (SOK Group's main business segment):**

About 600 companies produce auto parts in Russia; for 200 of these companies auto parts are a main business, while for the others it is an additional business.

A large number of car parts producers belong to car manufacturing groups (AvtoVAZ, GAZ, Severstal-Avto, and KAMAZ), while the others are either part of medium-sized groups or are independent.

Besides SOK Group, other private companies which have strong market positions on the Russian car parts market include:

- TADEM Group, which controls several companies (Balakovorezinotekhnika, ZiT, Volzhskrezinotekhnika, Moscow Plant for Autotractor Electric Equipment) in the segment for rubber-technical goods, generators, starters, and electric equipment;
- Autocomponents Group (belongs to Rosoboronexport and includes 4 plants which are suppliers of component parts to AvtoVAZ), as well as the private companies Krista, Pramo, and Avtokom;
- Sibur-Russian Tires and Amtel-Fredeshtain holdings (tires); Russian Accumulators, Edelveis (tires), European Bearing Company (bearings).

**Risks:**

- Potentially there may be problems with sales of AvtoVAZ component parts due to the coming of new owners into the latter company in 2007-2008: Rosoboronexport and Renault;
- SOK Group does not have a very good reputation in the media;
- The Group has low information transparency;
- The Group's plans for non-profile assets are unclear;
- Lack of consolidated financials for the SOK Group, including under IFRS.

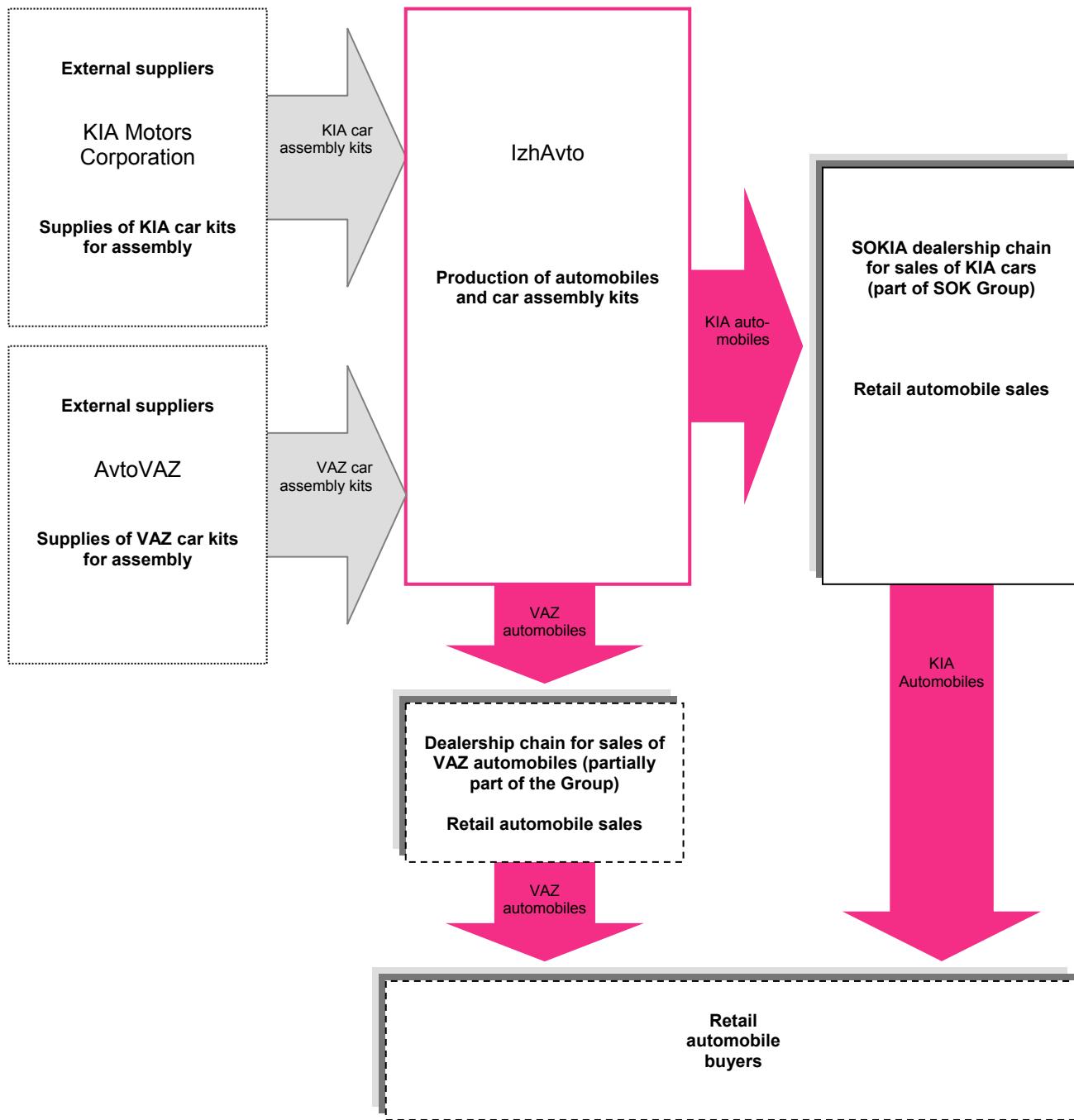
**SOK Group financial results:**

The company has not published any current consolidated financials. According to the media, SOK Group had 2006 revenue of \$2.8 bn (RUR76 bn); revenue in the company's construction segment in 2007 equaled \$600 mn (RUR15.5 bn).

## IzhAvto Group (2<sup>nd</sup> tier)

IzhAvto Group is part of the SOK holding, and produces VAZ, Izh, and KIA brand vehicles. According to the company's own information, it controls 4.6% of the Russian car market and 8.8% of the Russian market for foreign cars. The company had 2007 revenue of \$902 mn, while 1H08 revenue equaled \$538 mn.

Ratings: None.



IzhAvto is one of the largest representatives of the Russian car manufacturing industry. The company assembles KIA, VAZ, and Izh automobiles and produces VAZ car assembly kits.

IzhAvto has been performing industrial assembly of KIA Spectra cars since 2005, of KIA Rio since December of 2006, and of the KIA Sorento model since March of 2007. The KIA Rio model will be taken off the conveyor in 2008 due to weak demand (only 3,700 cars were sold in 2007).

In 2007 IzhAvto produced 78,200 vehicles.

Positive changes took place in the company's production structure in 2007:

- 62% of the total number of cars assembled were KIA models, while earlier the company's main revenue generators were Izh and VAZ brand cars;
- There was a reduction in production of VAZ car assembly kits by more than 3 times.

IzhAvto's current potential for producing foreign cars equals 50,000 per year; the company intends to increase its production capacity to 80,000 cars per year in the future. An agreement was signed between IzhAvto and KIA Motors in February of 2008 which opened the road for launching complete knocked down production (CKD) of KIA Sorento SUV's in the end of June, 2008. IzhAvto will have production capacity of up to 10,000 cars per year. For this reason IzhAvto is cooperating with the DongHi company, with which IzhAvto organized assembly of the KIA Spectra, to improve its welding department and conveyor lines.

After this IzhAvto plans to begin production of a new model — the KIA Cerato (about 4,000 units are planned to be built by the end of 2008, while in the future up to 25,000 units per year will be made). For now KIA Cerato vehicles are imported from Korea. A total of 8,000 KIA Cerato vehicles were sold in Russia in 2007.

IzhAvto is part of SOK Group. According to the media, on October 1 the AvtoVAZ board of directors considered the purchase of 100% of IzhAvto from SOK Group. In the beginning of 2008 AvtoVAZ proposed buying IzhAvto for \$500 mn. After due diligence conducted by Troika Dialog, it is preliminarily valued at \$350 mn.

## Risks:

- IzhAvto's main source of revenue and profit is KIA cars, thus IzhAvto's business depends on stable supplies of car assembly kits from Korea and on KIA Motors Corporation price policy;
- Belonging to the SOK Group:
  - SOK Group does not disclose financial reporting and information about the company's financial status to the public;
  - Low informational transparency of SOK Group;
  - There is no clarity concerning IzhAvto's future prospects.

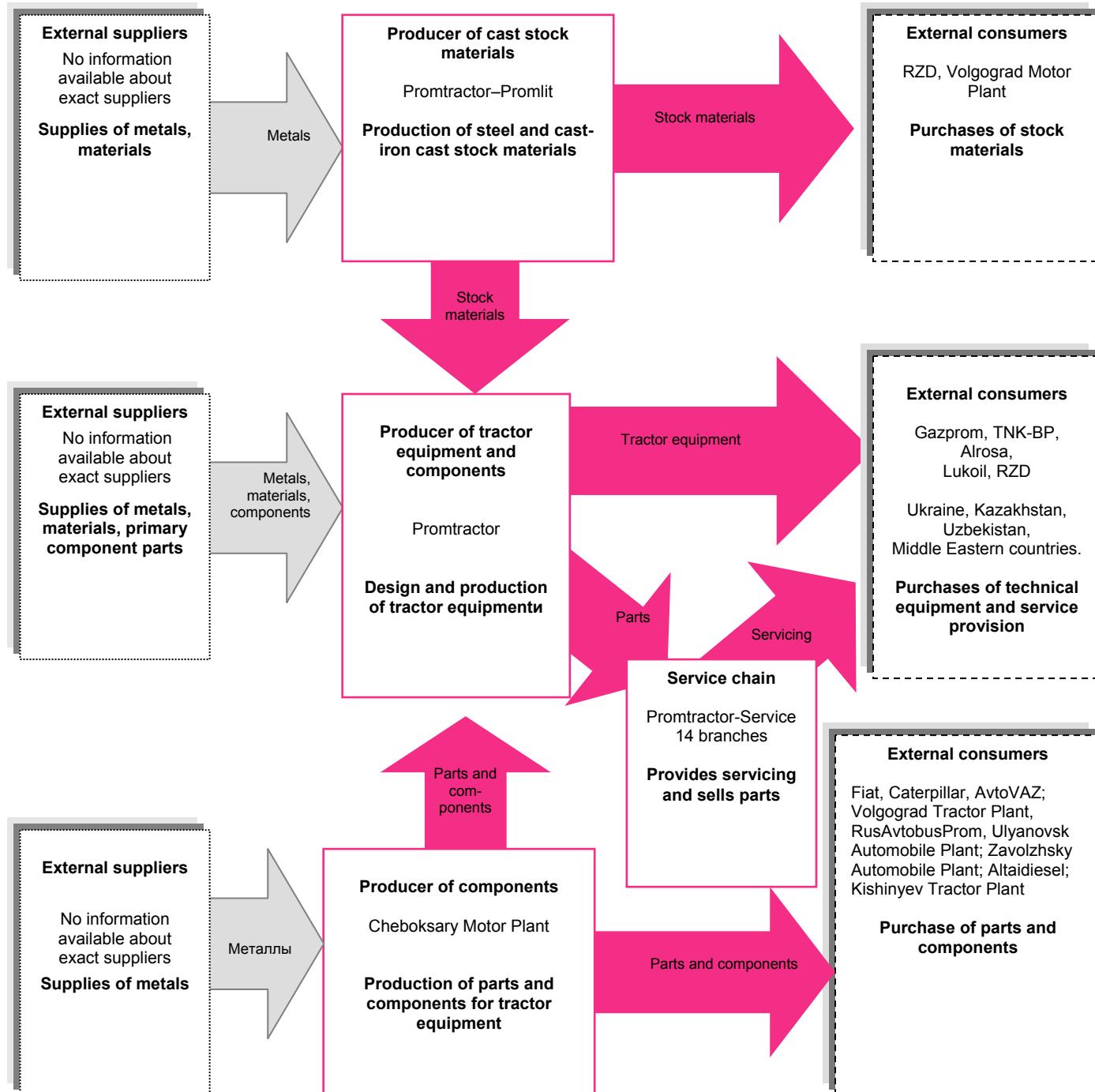
## IzhAvto financial indicators under RAS, \$ mn

Indicator	2006	2007	Changes	1H08
Revenue	668.6	902.8	35.0%	538.0
EBITDA	47.2	Gross Profit: 34.9	-26.0%	Gross Profit: 20.9
Net Profit	10.1	11.7	15.5%	7.5
Assets	460.8	686.4	49.0%	680.7
Financial Debt	253.9	410.2	61.6%	378.2
Shareholders' Equity	141.7	155.9	10.0%	170.9
Financial Debt/Assets	55.1%	59.8%	4.7mn	55.6%
Financial Debt/EBITDA	5.4x	Financial Debt/Gross Profit: 11.7	+6.3	Financial Debt/Gross Profit: 9.1
EBITDA Margin	7.1%	Gross Profit Margin: 3.9%	-3.2%	Gross Profit Margin: 3.9%

## Tractor Plants Concern (Promtraktor) (2<sup>nd</sup> tier)

Tractor Plants Concern unites companies of the industrial, agricultural, and railway machine-building and defense sectors. The company had 2007 revenue of \$271 mn, while 1H08 revenue equaled \$188 mn.

Ratings: None



Tractor Plants Concern unites companies of the industrial, agricultural, railway machine-building and defense sectors, as well as trade and servicing companies, specialized construction companies, and scientific-research centers.

Tractor Plants Concern's main business segments include:

- Production of components and spare parts for tractor equipment (generated 29% of total revenue in 2006);
- Production of railway casting and wagon-building (20%);
- Production of agricultural and municipal tractors (20%);
- Production of industrial tractors (18%);
- Production of special-purpose vehicles (12%).

#### Tractor Plants Concern is made up of:

Company	Products and services	City
<b>Promtractor (Cheboksary Industrial Tractor Plant)</b>	<b>Bulldozers , pipe-laying equipment, frontal loaders, wheeled bulldozers</b>	<b>Cheboksary</b>
<b>Promtractor-Promlit</b>	<b>Railway casting, spare parts and components for wagons</b>	<b>Cheboksary</b>
<b>Cheboksary Motor Plant</b>	<b>Components and parts for the agricultural and heavy equipment</b>	<b>Cheboksary</b>
Promtractor-Wagon	Cargo wagons, repairs of railway wagons	Kanash
Kurganmashinzavod	Caterpillar all-terrain vehicles, caterpillar chassis, special machines, equipment of repairs of pipelines, small municipal machines	Kurgan
Vladimir Motor-Tractor Plant	Wheeled tractors, diesel engines and units	Vladimir
Lipetsk Tractor	Universal wheeled tractors	Lipetsk
Krasnoyarsk HarvesterPlant	Rice and grain harvesters, reapers, and harvesting equipment	Krasnoyarsk
Volgograd Machine-Building Company VGTZ	Special machines	Volgograd
TK VGTZ	Caterpillar tractors, ground-breaking machines, and motors	Volgograd
Silvatec Skovmaskiner A/S	Forestry machines	Farsø (Denmark)
Kraslesmash	Forestry machines	Krasnoyarsk
Altai Motor Plant	Diesel engines	Barnaul

The Concern's largest owners are Mikhail Bolotin, Semyon Mlodik, and Albert Bakov.

The guarantors on the Concern's currently-circulating issues are three companies within the Concern: Promtractor, (Cheboksary Industrial Tractor Plant), Cheboksary Motor Plant, and Promtractor-Promlit.

**Promtractor** is a producer of tractor equipment under the CHETRA brand, and controls from 14% to 80% of various market segments in the Russian Federation. Promtractor has four main subdivisions (transmission plant, mechanical plant, pressing-welding plant, and assembly plant).

The main products made by Promtractor include:

- Three models of small tractors;
- Five models of heavy tractors (T-15, T-20, T-25, T-35, T-50);
- Three models of heavy pipe-laying machines (TG-221, TG-301 and TG-503);
- The T-40 bulldozer (under development).

Promtractor controls about 30% of the Russian tractor market of the 10<sup>th</sup> class, more than 80% of the market for heavy class 15–35 tractors and 60% of the market for pipe-laying machines.

**Promtractor-Promlit** produces:

- Casting for the railway sector and tractor production;
- Large castings made from carbonaceous and low-alloy steels, grey and high-test cast iron with overall dimension up to 2 meters and a weight of up to 2 tons.

The casting plant's capacity is 110,000 tonnes per year.

Promtraktor-Promlit is a strategic partner of RZD: at present the companies have a contract until 2010 for supplying steel casting for cargo wagons for a total cost of \$1 bn.

**Cheboksary Motor Plant** produces:

- Caterpillars, wheels, carrying rollers, and other spare parts and stock materials for tractors (including for foreign models such as KOMATSU, Caterpillar, KATO, Timberjack, Hitachi and other brands);
- Clutch parts for KAMAZ, Ural, MAZ, KrAZ/YaMZ, UAZ, GAZ, ZIL, and Gazel automobiles and buses;

Cheboksary Motor Plant has capacity for annual production of 70,000 tonnes of steel, 27,000 tonnes of cast iron, 1,500 tonnes of non-ferrous castings, and 40,000 tonnes of forged goods.

**Risks:**

- The Promtraktor+Promlit+Cheboksary Motor Plant subholding (the guarantors on the bond issues produced) do not publish consolidated financial reporting;
- The Concern as a whole does not publish IFRS financials;
- Weak link between various subholdings in the Concern;
- Greater competition on the part of imported tractor equipment.

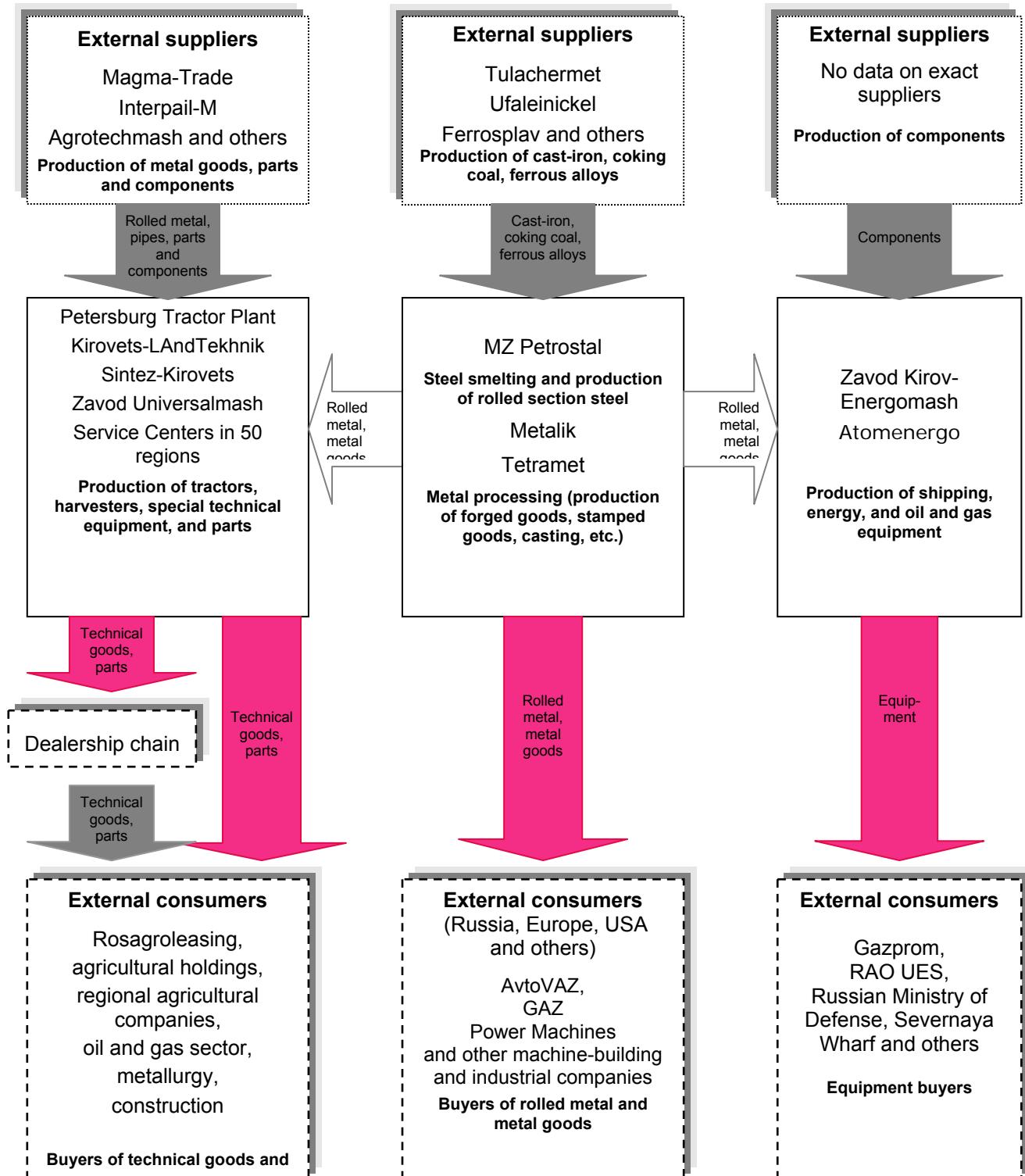
**Promtraktor financial indicators under RAS, \$ mn**

Indicator	2006	2007	Change	1H08
Revenue	192.8	271.4	40.8%	188.6
Gross Profit	32.5	43.3	33.3%	39.8
Net Profit	16.9	22.7	34.5%	26.1
Assets	287.6	266.4	-7.4%	386.4
Financial Debt	102.9	125.0	21.4%	194.0
Shareholders' Equity	85.9	113.1	31.7%	144.8
Financial Debt/Assets	35.8%	46.9%	+11.1 p.p.	50.2%
Financial Debt/Gross Profit	3.2	2.9	-0.3	2.4
Gross Profit Margin	16.9%	16.0%	-0.9 p.p.	21.1%

## Kirovsky Zavod Group (2<sup>nd</sup> tier)

Kirovsky Zavod Group is a vertically-integrated holding which operates in the machine-building (according to the company's own estimates it controlled about 7.5% of the Russian tractor and agricultural machines market in 2006) and metallurgy sectors. The company had 2007 revenue of \$454 mn.

**Ratings: None**



According to the media, a controlling stake in Kirovsky Zavod is owned by the company's management.

The Group's holding company is OAO Kirovsky Zavod (owner of core assets).

Export to more than 20 countries brings the Group 22% of its revenue.

### Main production divisions of the Group:

- **Metallurgy division** (MZ Petrostal, Metalik, Tetramet): smelting of steel and metal processing (rolled metal, forged goods, stamping, casting).

MZ Petrostal is the Group's largest production asset (40% of total sales in 2006, 45% of the plant's sales come from exports). The company smelts metal (more than 300,000 tonnes per year) and makes rolled section steel (267,000 tons in 2006). Part of these products is sold to external buyers, while part of it almost completely covers the needs of other subsidiary structures in the holding.

- **Machine-building division** (Petersburg Tractor Plant (PTZ), Kirov-Energomash Plant, Universalmash, Atomenergo, Kirovets-LandTekhnik, Sintez-Kirovets): production of tractors, agricultural equipment, industrial machines (special technical goods), equipment and parts.

PTZ (about 20% of the holding's revenue, 13% of the plant's revenue comes from exports) specializes in production of tractors (6 modifications) and agricultural equipment (18 modifications). The company's most famous product, which has been made since Soviet times, is the Kirovets tractor. Heavy tractors with more than 140 horsepower make up the base of the company's product line (according to company estimates, PTZ controlled about 17% of the Russian heavy tractor market in 2007). The company should begin serial production of tractors with more than 400 horsepower in 2008. These tractors will have no analogues among producers in the CIS countries.

Sales of finished products are made directly and through a dealership chain: service centers have been organized in 50 regions of Russia. One negative event for PTZ in the beginning of 2008 was that it stopped cooperating with Agrotekhnash (the former general sales structure of PTZ), thereby taking away a strong sales channel for Kirovsky Zavod Group.

Kirov-Energomash Plant and Atomenergo (8% of the Group's revenue) produce energy, oil and gas, and shipping equipment: turbines, hydro-turbines for small energy production, pumps for gas stations, ship mechanisms and others. In the future, the company plans to increase the share of revenue from oil and gas and energy equipment as a percentage of total revenue thanks to the high potential of natural resources sectors.

Kirovsky Zavod Group also includes the following subdivisions: support (additional works, repairs), infrastructure (provision of energy resources, communications services, transportation), engineering (design and technical services) and a subdivision for social purposes.

The Group made investments of \$13 mn in 2006. The Group has an investment program for 2007–2011 worth about \$200 mn (total investments in 2007 = \$80 mn). This program calls for building a casting plant, modernizing PTZ, and developing a cargo port zone.

The Group's financial results demonstrated strong dynamics in the first half of 2007 compared to the previous year: revenue increased by 33%, while net profit grew by 62%. Growth in assets by 25% was made possible for the most part by an increase in the Group's debt (by 2 times), and to a lesser degree through the company's own capital (13%). Nevertheless the company's leverage remains at an entirely acceptable level, and, in accordance with the company's plans, should not increase in 2008 (the company's forecast for Financial Debt/Assets is no more than 23%, and Financial Debt/EBITDA of no more than 1.8x).

Kirovsky Zavod ordinary shares are traded on the RTS and the St. Petersburg Stock Market.

**Risks:**

- Greater competition with foreign producers on the domestic and external markets in the tractor and special equipment sectors;
- Dependence of agricultural and energy equipment sales on state support for the agrarian sector and reforms in the Russian utilities sector (introducing new generating capacity and replacing worn-out capacity);
- Low informational transparency of the Group (no consolidated financials under international standards, it is not clear who final beneficiaries are);
- Low EBITDA margin of 8% (taking into account the significant share of the metallurgy division's share in the Group's revenue, while the average margin in the metallurgy sector is 30%). This is a result of the use of outdated production assets at MZ Petrostal.

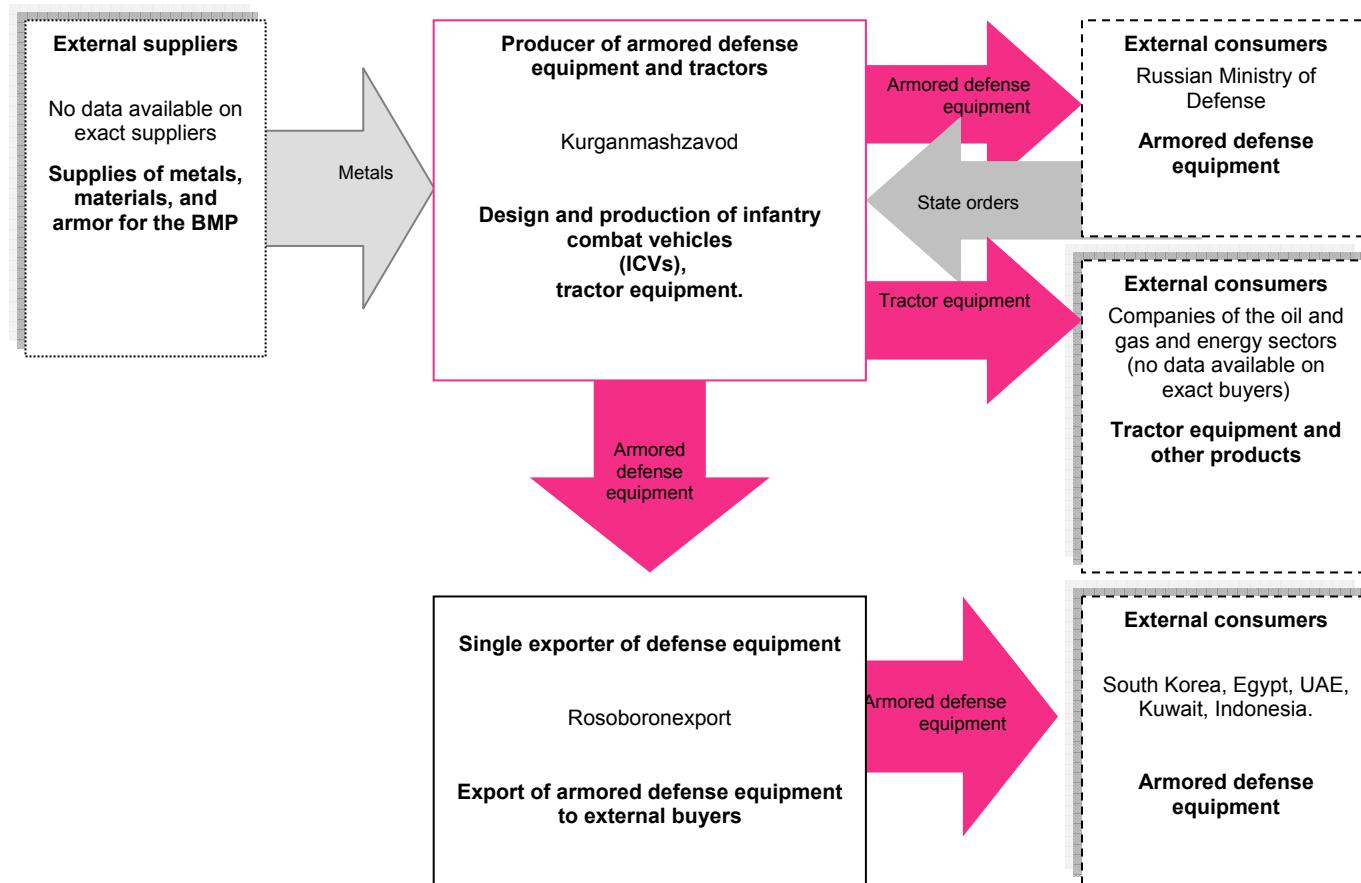
**Kirovsky Zavod Group financial indicators under IFRS, \$ mn**

Indicator	2006	2007	Change
Revenue	351.9	454.2	29.1%
EBITDA	24.2	35.6	46.7%
Net Profit	5.1	7.7	51.6%
Assets	449.5	525.1	16.8%
Financial Debt	33.6	73.8	119.9%
Shareholders' Equity	307.3	334.7	8.9%
Financial Debt/Assets	7.5%	14.1%	6.6 p.p.
Financial Debt/EBITDA	1.4	2.1	0,7
EBITDA Margin	6.9%	7.8%	0.9 p.p.

## Kurganmashzavod (Tractor Plants Concern) (3<sup>rd</sup> tier)

Kurganmashzavod is part of the Tractor Plants Concern. The company receives its main revenues from selling BMP-2 and BMP-3 infantry combat vehicles, the MKSM-800 multi-purpose, municipal construction vehicle, and mini-tractors. The company had 2006 revenue of \$183 mn.

**Ratings:** None



Kurgan Machine-Building Plant (hereon Kurganmashzavod) is one of the leaders in the Russian defense-industrial complex, and the only company in Russia which produces infantry combat vehicles which are used in the militaries of almost 30 countries. The plant is one of the world leaders for production of light armored equipment.

Main types of production of Kurganmashzavod:

- BMP-3 family of combat and support vehicles;
- Modernized BMP-2 vehicles;
- Modernized BMP-1 vehicles;
- Armored repair-rescue machine BREM-L;
- Small communal-construction machines;
- Caterpillar all-terrain vehicles;
- Machines for cleaning and isolating pipelines;
- Loaders and mini-tractors.

The main share of Kurganmashzavod's revenue comes from sales of BMP-2 and BMP-3 infantry combat vehicles, as well as MKSM-800 multi-purpose communal-construction machines and mini-tractors.

Overall in 2006 the company made 57.4% of its revenue from civilian production, while 33.9% of its revenue came from production of military equipment.

The company's entire business is concentrated in one legal entity — Kurganmashzavod.

The company's production complex consists of 11 specialized subdivisions and a series of supplemental production departments which together form the entire technological cycle:

- Main profile plants: mechanical-assembly, pressing-assembly, welded constructions, steel and cast-iron pouring, forging, precise stock materials, and goods for consumption by the general population;
- Plants of a supplemental profile: technological equipping, non-standard equipment, auto-transport, repairs, energy, and warehouses.

Kurganmashzavod does R&D in the field of armored equipment and tractor equipment using its own capacities, and also produces and tests new models. The company's main markets for sales of military products are Russia and the CIS countries, South Korea, Egypt, UAE, Kuwait, and Indonesia.

Kurganmashzavod entered Tractor Plants Concern in April of 2005 (the latter won an auction on April 28, 2005 for the sale of 0.634% of charter capital).

Kurganmashzavod has no Russian competitors in the field of military equipment production.

At present Kurganmashzavod is fulfilling contracts that it signed in April of 2007 for state orders worth a total of more than \$270 mn (RUR7 bn). Altogether the company signed three contracts with the state, two of which will last for four years. Kurganmashzavod implemented works on the contracts in 2007 worth \$80 mn (RUR2 bn).

The plant began to re-fit its production facilities in 2007-2008 with the aim of being able to fulfill its contracts with the Russian Ministry of Defense and foreign partners; the company plans to spend \$40 mn on modernization in 2007–2008.

Tractor Plants intends to reorganize its defense production capacity: Volgograd Tractor Plant will transfer assembly of BMD to Kurganmashzavod, thereby keeping only production of individual blocks. Starting from 2009 Kurganmashzavod will produce a unified variant of its BMP and BMD vehicles.

#### FYI:

According to the media (March of 2008), Rostechnologies intends to establish an armored tank holding on the base of Kurganmashzavod (production of BMP-3 vehicles), Arzamassky Machine-Building Plant (BTR-80, BTR-90), Volgograd Ship-Building Company (BMD-3 bodies) and, possibly, Uralvagonzavod (the T-90S tank). The new entity will be formed over the next one and-a-half to two years.

GAZ Group, which owns Arzamassky Machine-Building Plant, and Tractor Plants Concern, which owns Kurganmashzavod, have received a special offer to enter the holding by buying stakes in the new company, or by converting their shares into securities of the holding. The holding's most expensive asset will be Kurganmashzavod (\$400 mn).

#### Risks:

- Lack of a significant stake of state capital in the company's charter capital;
- Partial business dependence on having orders for production of military vehicles;
- Relatively small business size (9M07 revenue of \$143 mn, assets of \$256 mn);
- Net loss in 6M07 and 9M07;
- High competition on world market for light armored tank equipment.

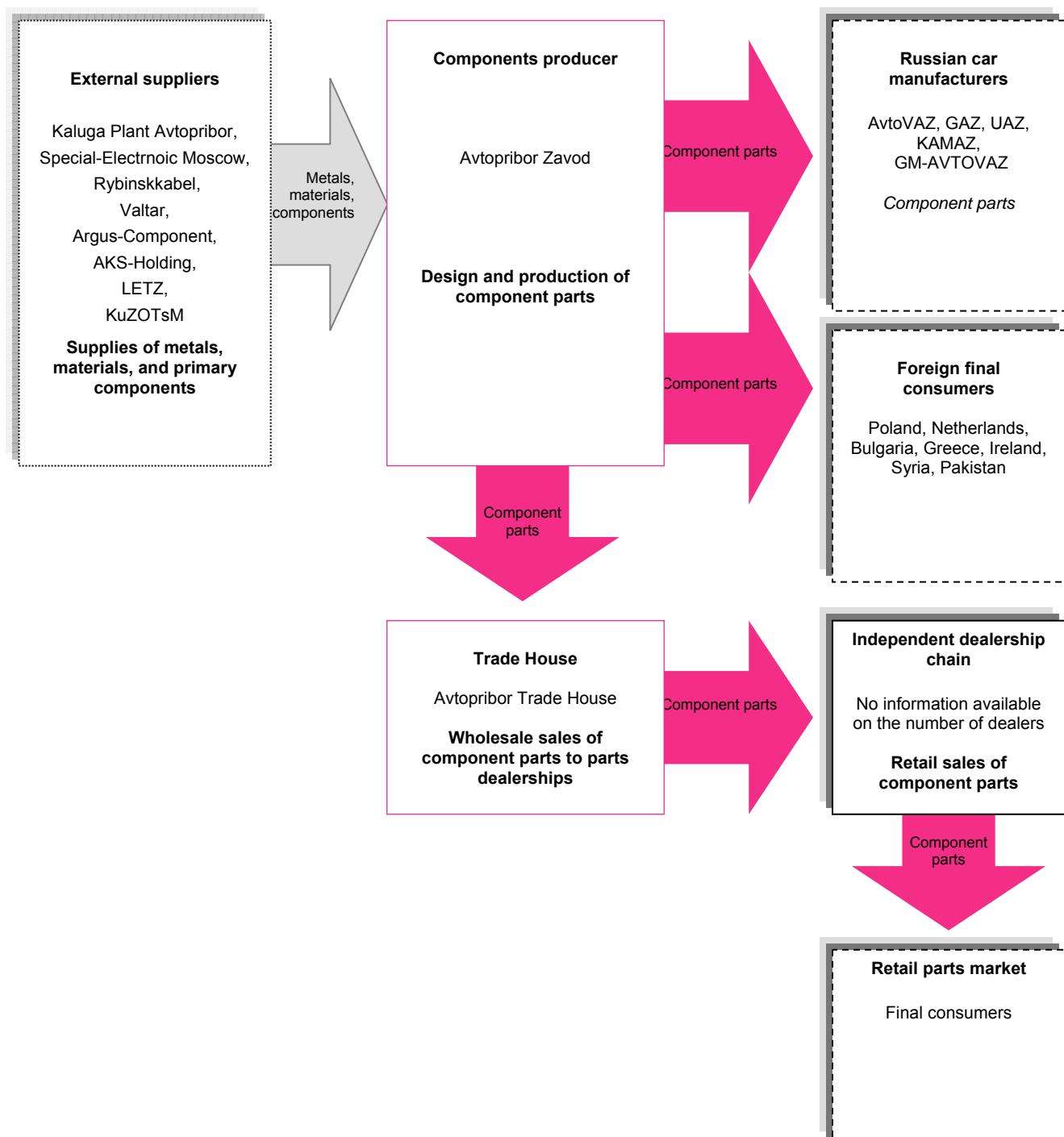
#### Kurganmashzavod financial results under RAS, \$ mn

Indicator	2005	2006	Change	6M07	9M07
Revenue	173.3	183.4	5.9%	79.5	142.9
EBITDA	19.2	21.3	11.1%	Sales profit: -4.9	Sales profit: -2.1
Net Profit	9.5	2.3	-75.6%	-12.7	-11.2
Assets	213.9	201.7	-5.7%	243.7	256.5
Financial Debt	68.4	46.0	-32.7%	53.9	60.5
Shareholders' Equity	120.5	127.7	6.0%	119.4	121.7
Financial Debt/Assets	32.0%	22.8%	-9.1 p.p.	22.1%	23.6%
Financial Debt/EBITDA	3.6x	2.2x	-1.4x	-	-
EBITDA Margin	11.1%	11.6%	0.5 p.p.	-	-

## Avtoribor (3<sup>rd</sup> tier)

Avtoribor Zavod designs and produces electric equipment, measuring tools, and spare parts for auto-, moto-, and bike equipment (more than 400 parts). The company had revenue in 2007 of \$95 mn and in 1H08 revenue of \$57 mn.

Ratings: None



Avtopribor Zavod's main business segments include design and production of electric equipment, instruments, and spare parts for auto-, motor- and bicycle equipment (more than 400 products), including:

- Combinations of instruments;
- Windshield wipers with levers and brushes;
- Speedometers, blinkers, air pressure gauges, and tachometers;
- Conversion elements;
- Electromagnetic switches of various modifications and purposes;
- Electric engines.

Avtopribor Zavod also designs and produces unified equipment and lathes on individual orders for assembly and pressing production, as well as for mechanical processing.

All of the company's assets and financial flows are focused in one legal entity — Avtopribor Zavod.

The plant's main income comes from selling instrument panels and combination instruments (33% of revenue for 3Q07) and windshield-wiper engines (20%).

The company's production facility is located on a site 160,000 sq. m. in size. Of this amount production workshops take up 84,000 sq. m.

The plant has a closed technological cycle and includes instrument, pressing, lacquer-painting auto-mechanical, pouring-mechanical, and hydraulics production, as well as a workshop for processing plastics.

The largest owner of Avtopribor Zavod is A.A. Melnikov. Avtopribor Zavod was bought from SOK Group in 2004.

The plant's most important consumers are the leading Russian automobile holdings — AvtoVAZ, GAZ, UAZ, and KAMAZ (which combined make up more than 60% of supplies); about 25% of the company's revenue comes from retail sales.

According to company information, Avtopribor's market share for various products ranges from 20% to 100%. In particular, Avtopribor is a monopolist for electromechanical tachometers, while it has a 90% market share for electromechanical gauges and speedometers.

#### Risks:

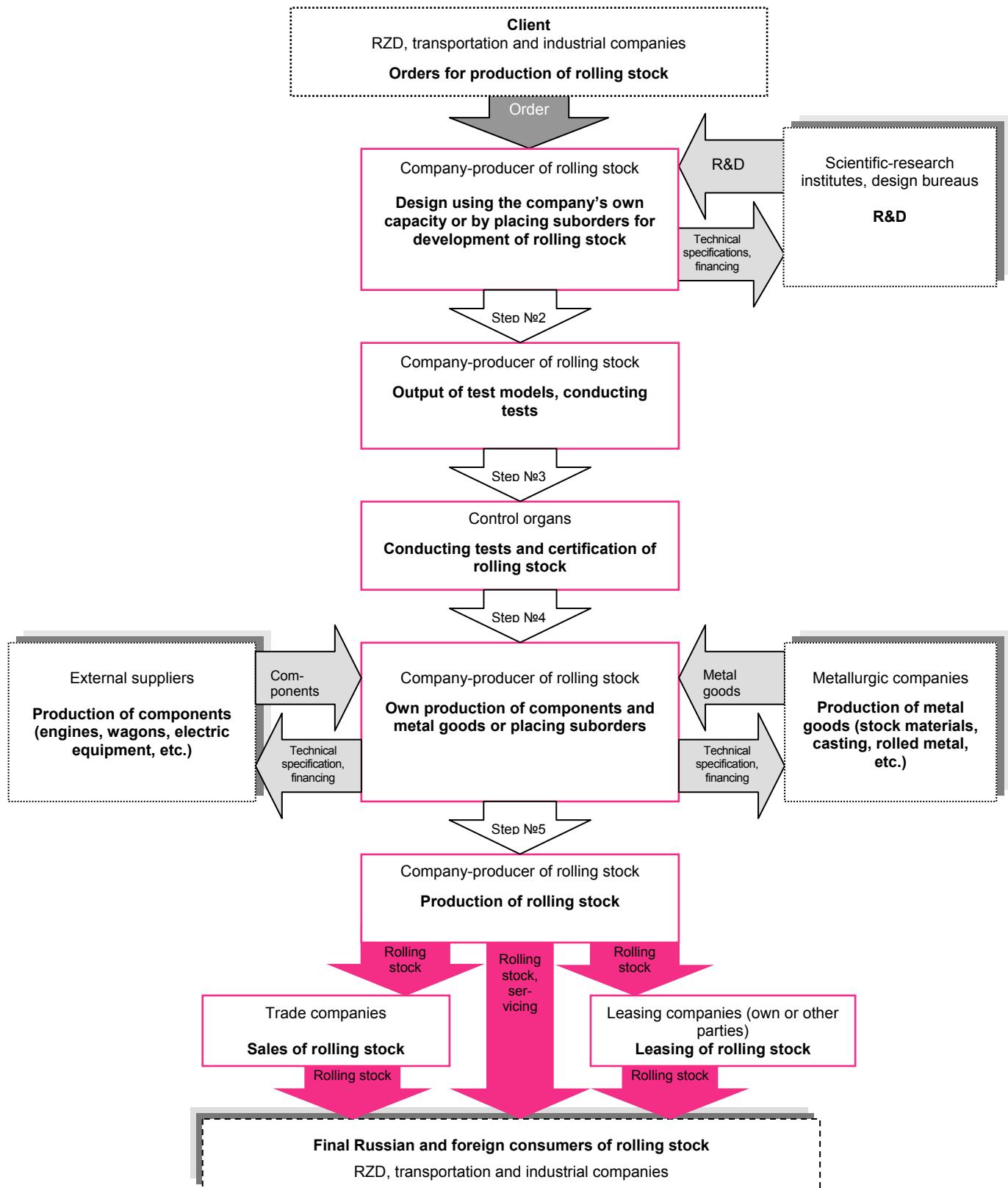
- Dependence on consumers — 60% of the company's sales come from just three buyers;
- **High leverage: as of 01.07.08 the ratio of Financial Debt/Gross Profit exceeded 6x;**
- Small business size.

#### Avtopribor financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H08
Revenue	80.3	95.6	19.1%	57.7
Gross Profit	4.0	5.0	26.2%	3.2
Net Profit	1.1	0.8	-28.8%	0.6
Assets	59.6	65.9	10.6%	83.5
Financial Debt	26.4	29.8	13.0%	41.3
Shareholders' Equity	21.7	23.8	9.7%	26.0
Financial Debt/Assets	44.3%	45.2%	0.9 p.p.	49.4%
Financial Debt/Gross Profit	6.6x	5.9	-0.7	6.5
Gross Profit Margin	5.0%	5.3%	0.3 p.p.	5.5%

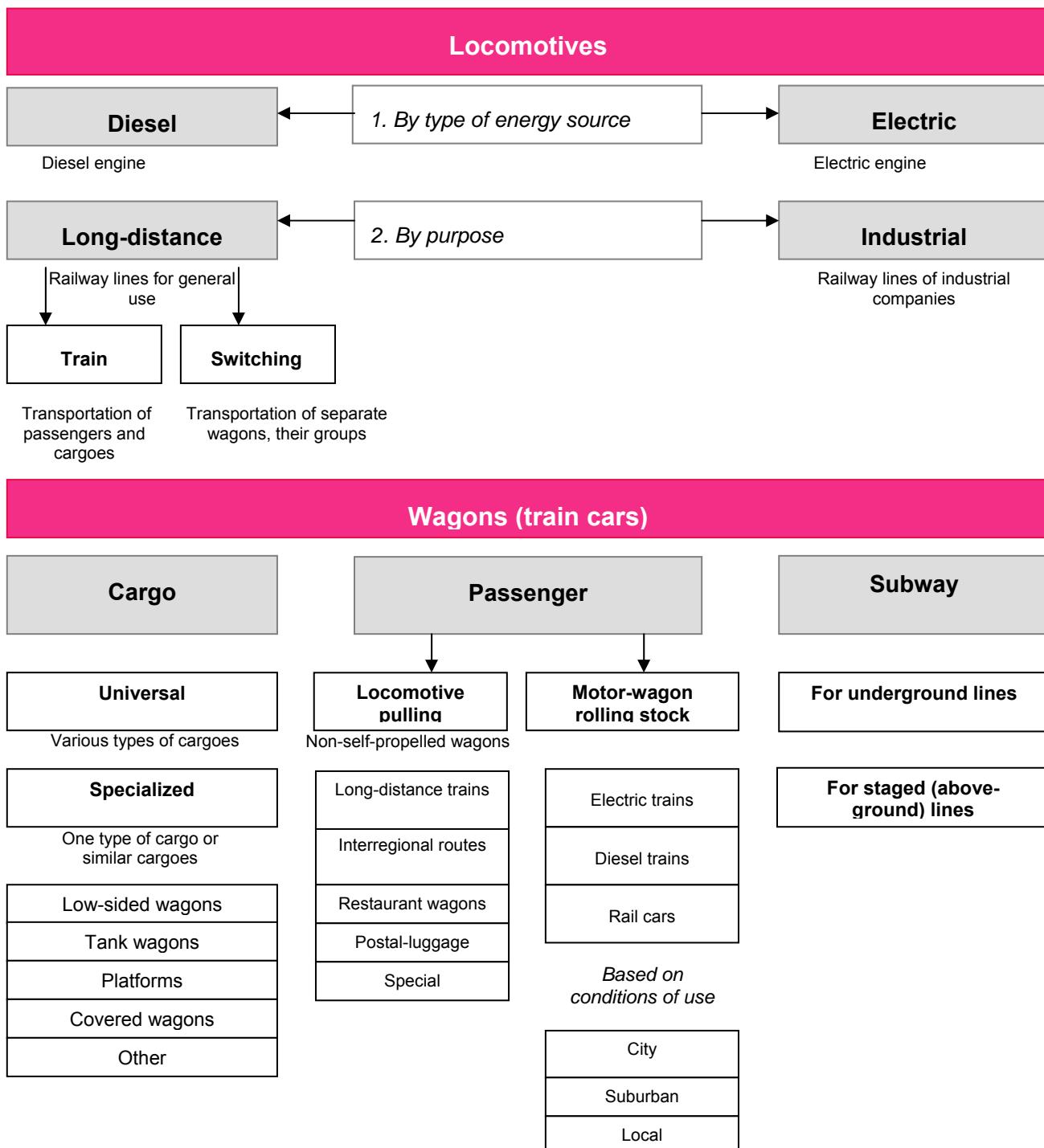
## Rolling stock production subsector (railway machine-building)

### Business processes of issuers from the rolling stock production subsector



## Main features of the rolling stock production subsector (railway machine-building)

As a rule, products made by transportation machine-building companies are separated into locomotives, wagons (cargo and passenger wagons), trip equipment, and components.



As for components, in its most general form a wagon is made up of an undercarriage and body. The undercarriage includes a frame, wheels, shocks, and brakes. The body construction depends on the wagon's purpose. A locomotive has an undercarriage (several carriages), a body with a cabin, a motor section (engine), and various auxiliary mechanisms (electric, compressor, pneumatic equipment, etc.).

The structure of products and services sold in this subsector in 2006 was such: locomotives (8%); cargo wagons (25%) and passenger wagons (10%); maintenance equipment (3%); electric trains, metro wagons, and trams (9%); components for railway transport, servicing (26%).

The main consumers are railway transport companies (70% of consumption), industrial and city rail transport companies. RZD is the clear leader in terms of purchases of new equipment (70%); RZD buys 100% of all locomotives and passenger rolling stock on the Russian market, and about 50% of all cargo wagons.

The Russian market for transportation machine-building was estimated in 2006 at \$4.3 bn. The average weight of imports has been quite stable over recent years at about 15% (more than 80% of all imports come from Ukraine). Production increased in 2006 by 10%, while average yearly growth rates in 2006–2010 are forecasted at 8.7% (more than 11% in CIS countries). It's noteworthy that over the last 5 years average production growth rates equaled 40%.

The main growth drivers in the sector are the high deterioration of the railway fleet (more than 70% in 2007) of the main consumer — RZD, development of private transportation companies, and the need to modernize the rolling stock of underground systems and city rail transportation.

According to the Strategy for the Development of Transportation Machine-Building in the Russian Federation, adopted by the Russian government in the end of 2007, Russia will need to buy up to 1,000 locomotives per year as well as 1,800 passenger wagons and 59,000 cargo wagons by 2015 in order to renew its rolling stock. City metro systems will need to buy up to 300–350 wagons per year until 2010 in order to renew their trains.

Despite the fact that there is a rather large number of transportation machine-building companies in Russia (more than 200), only 7 companies produce the majority of goods (80%). Of these seven, 5 of them issue bonds. This fact testifies to the high consolidation in the sector and to the strong positions of the market leaders. The strategic significance of the sector is proven by the state's presence in the capital of almost all the market leaders.

Almost all large companies of the transportation machine-building sector have a closed production cycle: design, smelting of wagon casting, production of blocks and parts, assembly of machines and equipment, testing, and service. Furthermore, the sector has well-developed intra-sector cooperation. The most complicated and highly-technological component parts are bought abroad.

The EBITDA margin of sector players who issue bonds is in the range of 7–8%, which is approximately equal to the average for the machine-building sector.

Production volume of the main types of goods made by the Russian transportation machine-building sector in 2000-2006						
Name	2000	2001	2002	2003	2004	2005
Electric long-distance locomotives, units	19	18	19	27	55	107
Diesel long-distance locomotives, units	21	22	23	23	33	46
Diesel switching and industrial, units	66	61	41	41	67	119
Cargo wagons, units	4 060	6 578	10 887	26 989	35 358	34 862
Passenger wagons for locomotive pulling, units	396	450	471	547	628	709
Electric trains, wagons	398	409	396	478	583	486
Diesel trains and railway buses, wagons	8	5	10	30	47	57
Maintenance equipment, units	193	221	828	959	602	1 196
Metro wagons, units	32	111	138	112	96	194
Tram wagons, units	72	88	102	47	144	137

Source: Rosstat data

**Use of production capacity in the transportation machine-building sector in 2001–2006, %**

Name	2001	2002	2003	2004	2005	2006
Diesel long-distance locomotives	36,7	38,3	38,3	53,3	88,2	82,2
Cargo wagons	25,5	38,2	55,5	65,7	65,0	61,5
Long-distance passenger wagons	71,0	69,3	77,7	85,4	90,2	97,5
Metro wagons	31,4	44,9	38,9	35,8	62,8	62,8
Long-distance electric locomotives	8,1	8,6	12,2	24,9	47,5	70,6

Source: Rosstat data

**Estimate of the inventory fleet and volume of purchases of rolling stock for the period to 2015**

Name	Inventory fleet needs, units (inertial variant*)		Inventory fleet needs, units (optimistic variant**)		Total purchases, units (inertial variant) in the period until:		Total purchases, units (optimistic variant) in the period until:	
	2010	2015	2010	2015	2010	2015	2010	2015
Cargo electric locomotives	5 808	6 265	6 278	6 861	235	1 973	513	2 569
Passenger electric locomotives	1 862	1 958	2 023	2 160	630	1 050	791	1 252
Cargo locomotives	2 097	2 178	2 325	2 488	0	1 466	75	1 776
Passenger diesel locomotives	566	570	620	628	182	294	236	352
Switching diesel locomotives	5 027	5 192	5 800	6 230	0	881	333	1 919
Total locomotives	15 360	16 163	17 046	18 367	1 047	5 664	1 948	7 868
Passenger wagons	25 253	26 998	27 065	28 418	7 420	14 684	9 232	16 104
Cargo wagons	841 900	903 500	875 900	981 100	177 300	448 400	211 300	526 000

Source: RZD, taking into account current technical conditions and write-off terms

\* Inertial variant – forecast of cargo and passenger volumes based on an inertial forecast of Russian economic development.

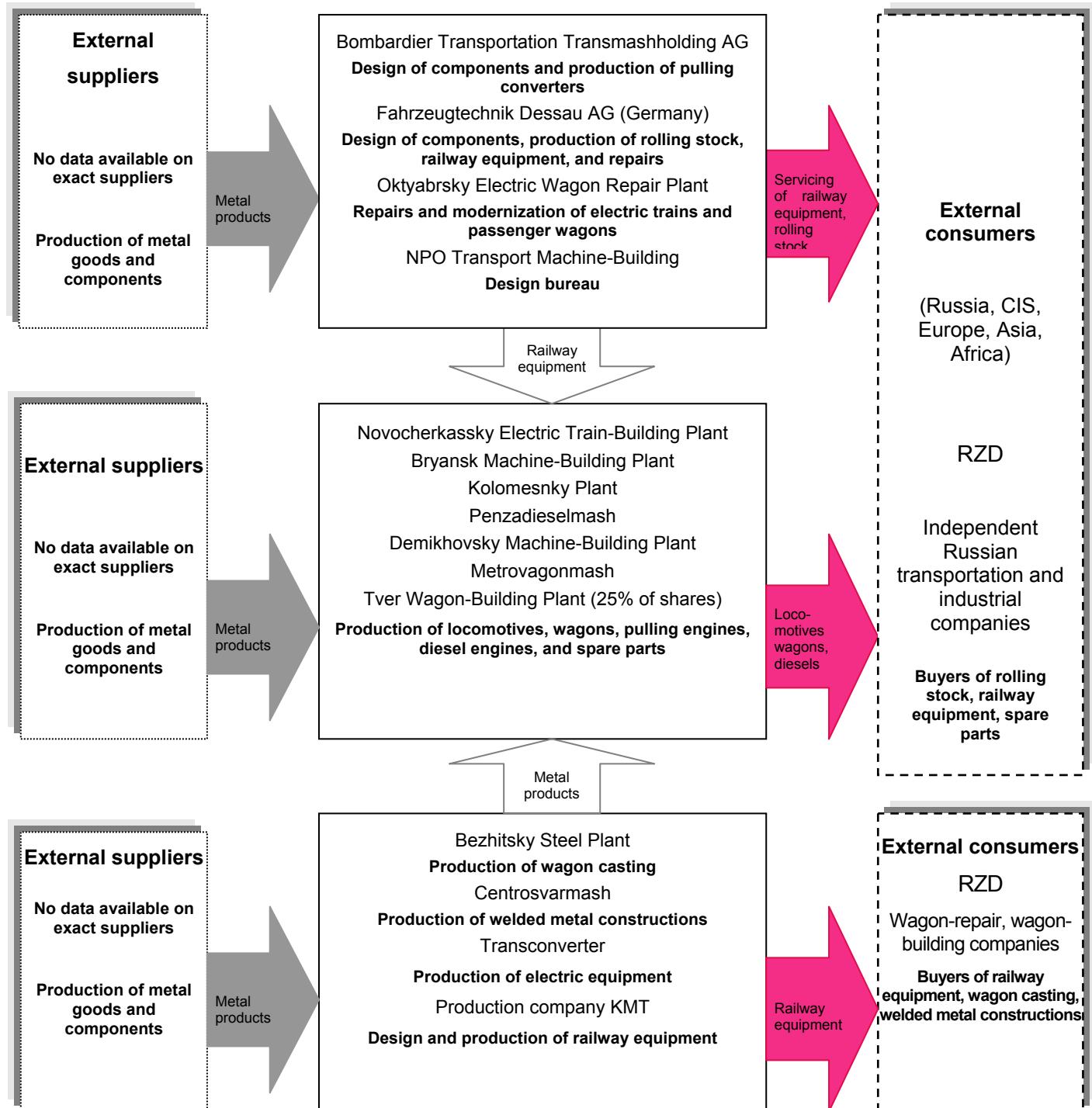
\*\*Optimistic forecast – forecast of cargo and passenger volumes based on an optimistic forecast of Russian economic development.

**Risks of transportation machine-building companies:**

- High dependence on RZD and other state entities (subway systems, city rail transport), which is reflected in artificially-low selling prices and uneven incomes over the course of the year;
- Rather high leverage (average coefficients of bond issuers: EBITDA/Financial Debt = 5–6x, Financial Debt/Assets of more than 50%), which is caused by the need to replenish working capital and significant accounts receivable;
- Extreme use (about 80%) and deterioration (up to 70%) of production assets. A series of positions (locomotives, cargo and passenger wagon production) do not have enough production capacity;
- Lack of investments is reflected in the low technological level of production, and, at times, in the unacceptable level of quality of materials and components;
- Lack in Russia of serial production of several types of rolling stock and components (long-distance cargo diesel locomotives, rolling stock with a speed greater than 250 km/h, cars with axles bearing up to 30 tons, etc.) at the same time as growing demand for these products is capable of leading to better positions for importers;
- Dependence on prices for metal products and components (up to 60–70% of production costs);
- Limited access to foreign markets due to strong competition and the difference in width of railway wheels: 1.5 m in Russia vs. 1.4 m as is used in the majority of countries (60% of all railway lines in the world, including in Europe and China);
- Lack of qualified specialists.

## Transmashholding Group (2<sup>nd</sup> tier)

Transmashholding Group is the largest producer of railway transportation equipment in Russia (more than 4,000 units in 2006, and the world leader by physical production volume). The company had 2007 revenue of \$1.768 bn and 1H08 revenue of \$1.09 bn.



The largest owner of Transmashholding is The Breakers Investments B.V. (Netherlands), which belongs, according to the media, to Iskander Makhmudov and Andrey Bokarev, the owners of Kuzbassrazrezugol. RZD bought a blocking stake in Transmashholding (25% + 1 share) in the end of December 2007, paying about \$370 mn for the stake.

**Main products made by Transmashholding Group (hereon TMH):**

- Locomotives (about 30% of the Group's revenue in 2006):
  - Switching and long-distance diesel locomotives;
  - Industrial and long-distance electric locomotives.
- Wagon fleet (about 30% of total revenue):
  - Cargo and passenger wagons;
  - Metro wagons and electric trains.
- Diesel locomotive and ship engines (more than 10%);
- Industrial traction machines (about 2%);
- Wagon casting (5%);
- Other products and services (blocks, components, metal constructions, servicing, etc.) (more than 20%).

TMH began serial production of the new-generation "Ermak" long-distance cargo electric locomotive using alternating current in 2006, while in 2007 the company made modifications to its base Russian passenger electric train that uses alternating current (EP1M and EP1P). Tests were also completed on the company's "Vityaz" diesel locomotive with an asynchronous drive unit. At present the first Russian long-distance locomotives, the "Peresvet" diesel locomotive and the "Donchak" electric locomotive, are going through testing and certification. TMH is continuing the design of the EP20 two-system passenger electric locomotive, on the base of which a next-generation family of locomotives will be developed. Furthermore, the company is making new models of rail buses (self-propelled diesel wagons (trains) for transporting passengers), cement carrier wagons, electric locomotives, diesel engines, etc.

According to TMH data, the holding held the following market shares in Russia in 2006:

- Long-distance passenger diesel locomotives (100%, 41 units);
- Switching diesel locomotives (84%, 145 units);
- Electric locomotives (100%, 201 units);
- Diesel and electric trains (80%, about 600 units);
- Cargo wagons and fitting platforms (16%, about 2,000 units);
- Metro wagons (58%, 232 units, including repairs);
- Diesel locomotive engines (95%, more than 500 units);
- Wagon casting (36%, approximately 60,000 tons);
- Passenger wagons (Tver Wagon-Building Plant, 90%, 803 units).

ZAO Transmashholding is the Group's holding and management company, and also consolidates the Group's assets (starting from August of 2007). The company has production facilities in Russia and Germany.

Besides profile facilities the Group also has investment, leasing, and sales companies. The Group has opened trade representative offices in CIS and the Baltic countries, as well as in Finland.

Trying to make up for its lack of new technologies, TMH is now cooperating with foreign partners:

- TMH will decide in 2008 which one of the world leaders in the sector TMH is going to allow into its capital: Bombardier, Siemens or Alstom;
- TMH formed a joint venture with Siemens in 2005 (Transconverter) for designing and producing high-voltage static converters;
- Two joint ventures were formed in 2007 together with Bombardier (Bombardier Transportation Transmashholding AG) for producing pulling converters and for providing engineering services;
- TMH is leading negotiations with Alstom on organizing a joint venture for producing component parts and rolling stock.

**Main consumers of TMH products in 2006:**

- RZD (56% of the Group's revenue);
- Independent Russian transportation and industrial companies (34%).

Export to CIS, European, Asian, and African countries accounted for 10% of TMH's sales in 2007.

TMH signed long-term contracts with RZD for the first time in 2007 (estimated to be worth more than \$4 bn) for delivering more than 800 multiple-unit long-distance electric trains to RZD by 2015. Besides this TMH also has contracts with RZD which call for supplying 1,377 multiple-unit electric locomotives, 1,032 multiple-unit diesel trains, 3,650 locomotive pulling wagons, and 3,270 electric train wagons in the period from 2006–2010.

TMH's investment program for 2006–2010 will cost \$1.5 bn. The funds from the program will be used for developing production capacity, reconstruction and technical re-equipment of production facilities, and designing new rolling stock models, etc.

According to TMH forecasts, the company's revenue may reach \$4 bn in 2008.

Kolomensky Plant shares are traded on the RTS.

After consolidating assets, Transmashholding published new management accounting for the Group for 2006 and for the first 6 months of 2007 (without taking into consideration Tver Wagon-Holding Plant, in which TMH owns 25% of all shares). This does not make it possible to correctly compare the new data with data from previous periods.

TMH's balance figures for the first half of 2007 show a positive trend as compared to 2006: assets increased by 25%, while equity capital increased by 18%.

The company's EBITDA margin equaled 7.7% in the first half of 2007, which is an average level both for Russian and for foreign companies of the sector.

By the middle of 2007 the company's debt burden had decreased somewhat as compared to the beginning of the year, and one can expect that attracting RZD as a strategic partner (together with TMH's plans for cooperating with global leaders in the sector) will have a positive effect on TMH's creditworthiness.

**Risks:**

- Weak informational transparency of the Group (no audited and international consolidated financials, final beneficiaries are not disclosed);
- High share on the part of RZD in the Group's sales (according to the media: 65% in 2007);

In January of 2008 the Supreme Court of Ukraine ruled TMH Group's privatization of 76% of the shares in Luganskteplovoz to be illegal and ordered TMH to return these shares to the Ukrainian government (according to TMH data, Luganskteplovoz held a 5% share of TMH's total revenue in 2007).

**Transmashholding Group management consolidated financials under RAS for 2006, 6M2006 and 6M2007, \$ mn**

Indicator	2006	6M2006	6M2007	Change
Revenue	1449.9	671.7*	1183.4	76%
EBITDA	132.2	-	91.3	-
Net Profit	59.4	21.9*	44.1	101%
Assets	1424.6	-	1774.5	25%**
Financial Debt	616.6	-	726.0	18%**
Shareholders' Equity	382.5	-	435.2	14%**
Financial Debt/Assets	43.3%	-	40.9%	-2.4 p.p.**
Financial Debt/EBITDA	4.7x	-	4.0x***	-0.7x**
EBITDA Margin	9.1%	-	7.7%	-1.4 p.p.**

\* Including consolidated financials of Tver Wagon-Building Plant

\*\* Change vs. 2006

\*\*\* EBITDA is shown as a full year value

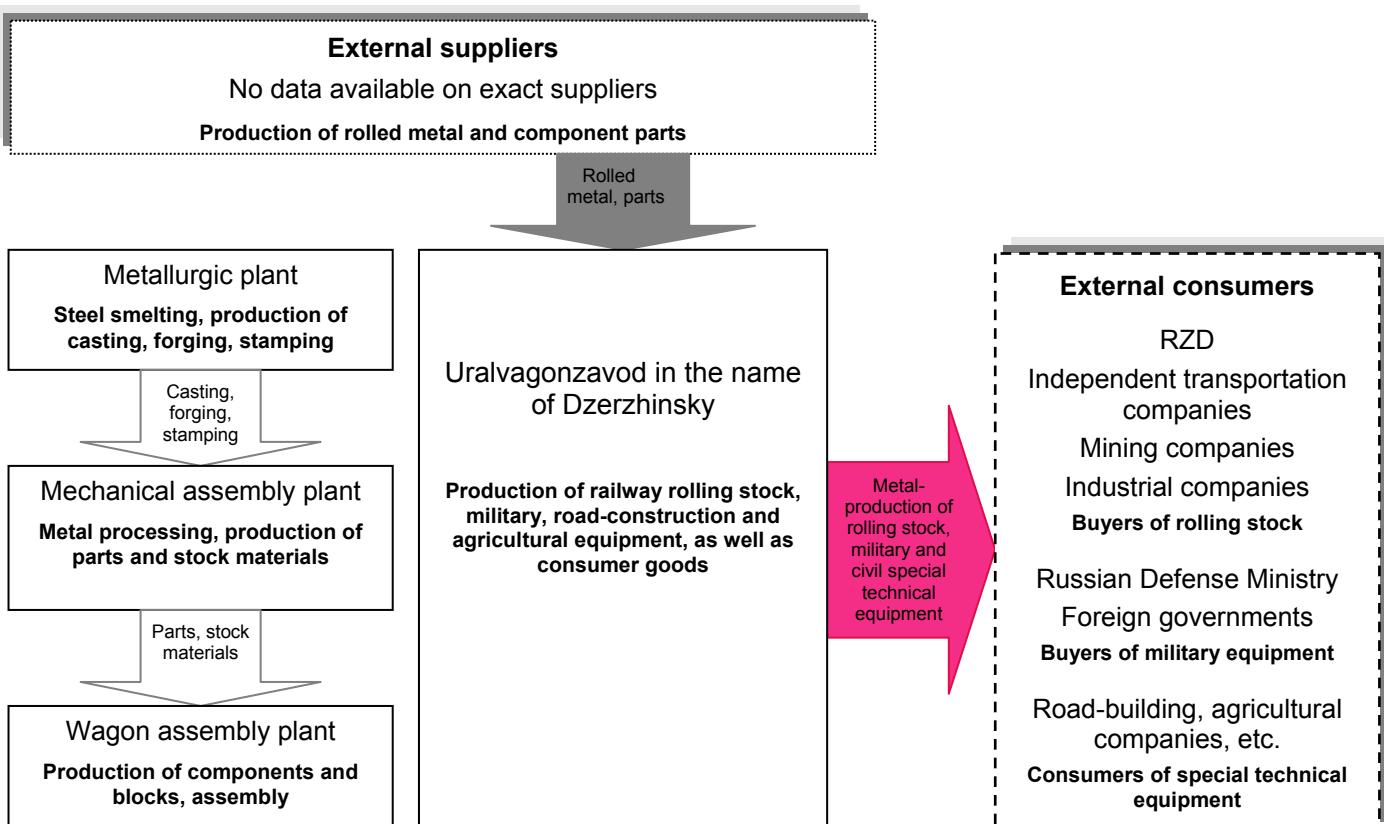
## Transmashholding financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H2008
Revenue	582.2	1 768.8	203.8%	1 090.6
Gross Profit	28.7	44.6	55.3%	45.2
Net Profit	10.5	10.8	2.5%	27.1
Assets	537.8	858.0	59.5%	980.5
Financial Debt	273.1	240.1	-12.1%	247.1
Shareholders' Equity	25.1	73.3	192.2%	105.4
Financial Debt/Assets	50.8%	28.0%	-22.8%	25.2%
Financial Debt/Gross Profit	9.5	5.4	-412.6%	2.7
Gross Profit Margin	4.9%	2.5%	-2.4%	4.1%

## Uralvagonzavod (2<sup>nd</sup> tier)

Uralvagonzavod is the largest rail-car building company in Russia, and is also one of the leading world producers of armored tank equipment (T-72C, T-90C and other tanks). The company had 2007 revenue of \$1.55 bn.

Ratings: None



The Russian government is the owner of NPK Uralvagonzavod (hereon UVZ).

UVZ was transformed from a federal unitary enterprise into a joint shareholder company in March of 2008 as part of the creation of an armored tank holding on the base of UVZ. It is planned that 9 industrial companies, 7 scientific-research institutes and 4 design bureaus will be joined to UVZ. These subsidiaries will include both state-owned and private companies. The share of production for civil purposes will equal about 75% of the holding's output, while revenue may reach \$14 bn annually by 2010.

### Main products made by UVZ:

- Cargo wagons (50% of revenue in 2006):
  - low-sided wagons (41%);
  - tank cars;
  - flatcars.
- Special technical equipment (30%):
  - military equipment (tanks, engineering armored cars);
  - road-construction equipment (excavators, auto-loaders);
  - agricultural technical equipment (tractors, seeders, harrows).
- metallurgic products (17%).

UVZ has 17 structural subdivisions which together form a closed technological chain: product design, steel smelting and production of metallurgic goods, production of blocks and parts, assembly, and testing of machines and mechanisms.

The plant is located in Nizhny Tagil (Sverdlovskaya Region) and has production capacity of about 20,000 low-sided wagons and up to 6,000 rail flatcars per year.

UVZ's management announced at the beginning of 2008 that it was holding negotiations for establishing a joint venture in Iran. This joint venture will assemble low-sided wagons (up to 6,000 per year).

#### UVZ production figures:

- low-sided wagons (2006 — 12,600 units, first 9 months of 2007 — 10,200 units);
- flatcars (2006 — 900 units, first 9 months of 2007 — 300 units);
- tank cars (2006 — 2,500 units, first 9 months of 2007 — 1,600 units);
- excavators (2006 — 421 units, 2007 — 446 units);
- tractors (2006 — 92 units, 2007 — 43 units).

UVZ's product line includes more than 100 items, while another several dozen items are developed each year. In particular, starting from 2006 the company began serial production of new generation low-sided wagons with an increased lifting capacity (up to 25 tonnes).

The main customers for rolling stock are RZD (29% of sales in 2006), independent transportation companies and industrial companies (including mining companies). Defense equipment is purchased by the Russian Federation Ministry of Defense, and is also exported abroad. Metallurgic production and special technical equipment is sold to various industrial companies.

UVZ signed a contract with RZD in 2007 worth \$2.8 bn for delivering more than 40,000 low-sided wagons in 2008–2010. Signing a long-term contract will allow UVZ to start fulfilling its investment program, which calls for expanding capacity to 25,000 units of rolling stock and 5,000 wagon sets per year.

UVZ's revenue increased by 18% y-o-y in 2006, while EBITDA increased by 41%; that said the company's net profit decreased by 30%. The company's balance sheet over the first half of 2007 showed positive dynamics: assets increased by 20%, while equity capital increased by 7%.

The company's EBITDA margin equaled 8% in 2006, which is an average figure for the sector.

#### Risks:

- High leverage: as of 01.01.08 Financial Debt/EBITDA = 24.2x;
- Low information transparency (lack of IFRS financials, information on sales of defense technology is held secret, the company's main suppliers and customers are not disclosed to the public, and no information is published on the size of the company's investment program);
- High deterioration of production equipment (more than 50%);
- Strong dependence on RZD (at least 1/3 of UVZ's revenue), which significantly lowers purchasing prices, thereby lowering the production plant's margins as well;
- Complaints by RZD about the quality of UVZ's metallurgic products. A total of 14,000 wagons made over the last several years were returned to the plant in 2006-2007 to make unscheduled technical revisions due to the low quality of cast parts.

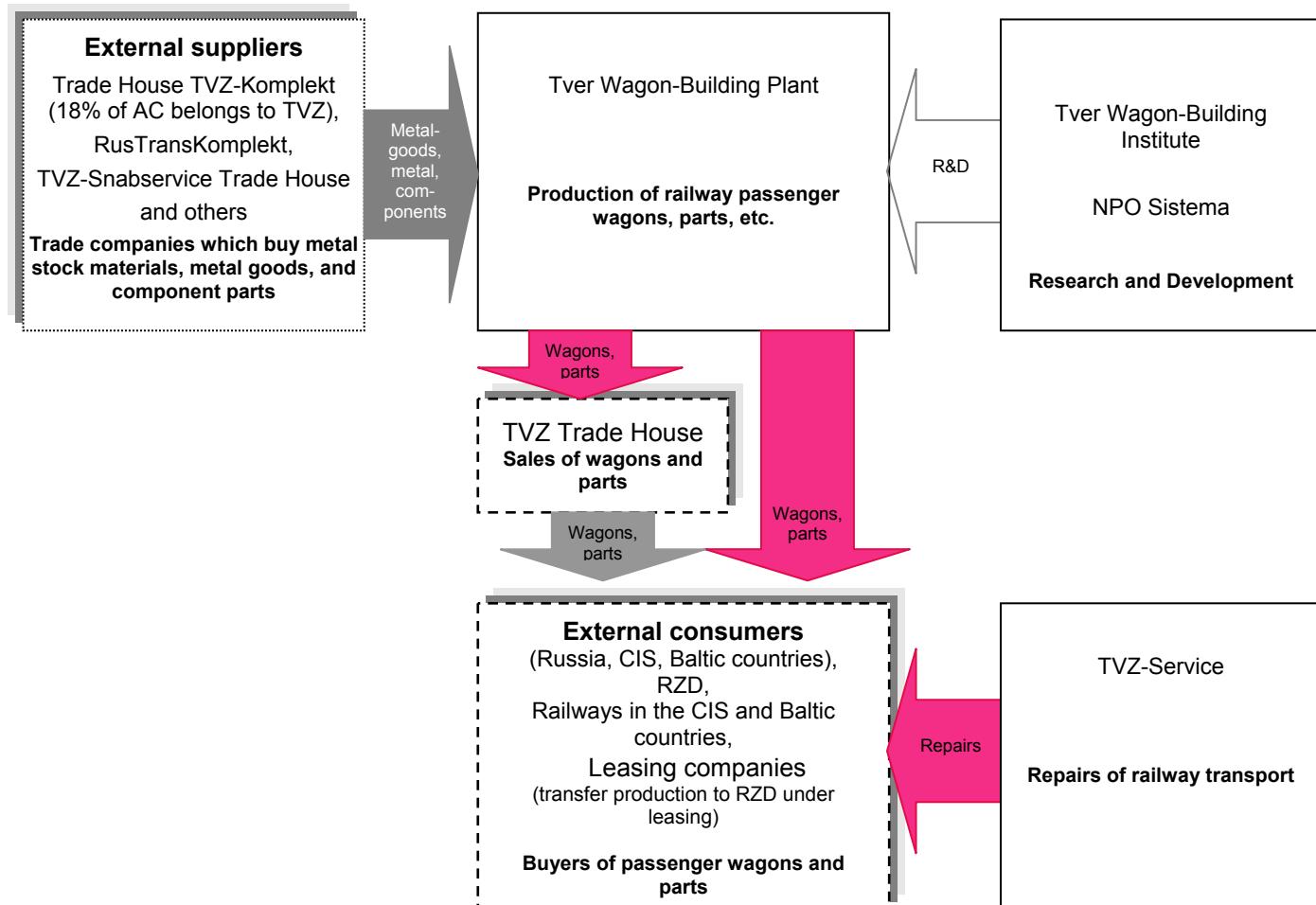
#### UVZ financial indicators under RAS, \$ mn

Indicator	2006	2007	Change
Revenue	1031.7	1 549.6	50.2%
Gross Profit	82.5	26.5	-68.5%
Net Profit	1.3	N/A	-
Assets	1240.6	N/A	-
Financial Debt	614.5	643.4	-
Shareholders' Equity	175.3	N/A	-
Financial Debt/Assets	49%	N/A	-
Financial Debt/Gross Profit	7.5x	24.2	+16.7
Gross Profit Margin	8.0%	1.7%	-6.3 p.p.

## Tver Wagon-Building Plant (TVZ) (3<sup>rd</sup> tier)

Tver Wagon-Building Plant is the largest company in the CIS for production of passenger wagons (803 units in 2006, 675 units over the first 9 months of 2007; 1<sup>st</sup> place in Russia). The company had 2007 revenue of \$692 mn and 1H08 revenue of \$464 mn.

**Ratings:** None



A total of 42% of the shares in Tver Wagon-Building Plant (hereon TVZ) belong to the government, while 25% belong to PFG Rosvagonmash (representative of the Transportation Ministry). Transmashholding has stated that it also owns 25% of TVZ. Thus the state indirectly owns a controlling stake in TVZ. Furthermore, TVZ is included in the list of Russian strategic companies, which limits the ability of foreign companies to enter TVZ's capital, and testifies to TVZ's high significance to the Russian state.

### Main products made by TVZ:

- Railway passenger wagons for speeds up to 160 km/h and 200 km/h (84% of revenue in 2006):
  - for transporting passengers over long distances (reserve cars, compartment cars, sleeping wagons);
  - interregional routes;
  - special purpose;
  - express wagons of various classes.
- Other goods and services (16%):
  - wheel pairs;
  - parts;
  - repairs,
  - consumer goods, etc.

TVZ is located in the city of Tver. The company's production capacity as of the beginning of 2008 equaled 1,008 passenger wagons per year. TVZ produced about 75% of its own wagon parts independently in 2006.

TVZ has investment and repair subsidiaries, as well as two subsidiaries which do R&D. TVZ also has a series of dependent companies, including a blocking stake in Kharkov Wagon-Building Plant.

TVZ sees its share of the Russian market for railway passenger wagon-building at more than 90%. The company's product line includes all major types of passenger wagons (more than 15 models altogether).

The company plans to build more than 500 wagons of a new type starting from 2008 which will use corrosion-resistant steels and which will have a working life of up to 40 years.

More than 50% of the supplies made to TVZ are done by three counterparties: TVZ-Komplekt Trade House, RusTransKomplekt, and TVZ-Snabservice. This suggests that TVZ is quite dependent on these partners.

#### Main customers of TVZ products:

- RZD (87% of wagons produced);
- Railways of CIS countries and the Baltic countries;
- Leasing companies (TVZ has sold its products to RZD under leasing starting from 2003 so as to increase sales).

TVZ's investment program for 2006–2009 totals about \$150 mn (of which more than \$60 mn was invested in 2006–2007), and is aimed at modernizing the company's production equipment. TVZ will be able to produce up to 1,200 new and renovated wagons per year by 2010 as a result of the investment program.

Stocks of Tver Wagon-Building Plant are traded on the RTS.

#### Risks:

- The company does not publish consolidated financials or financials under international standards;
- The company had strong deterioration of its equipment (as of the end of 2007 deterioration equaled about 70%);
- High amount of guarantees given by TVZ on the borrowings of third parties (about \$150 mn as of 31.12.2007).

#### TVZ financial indicators under RAS, \$ mn

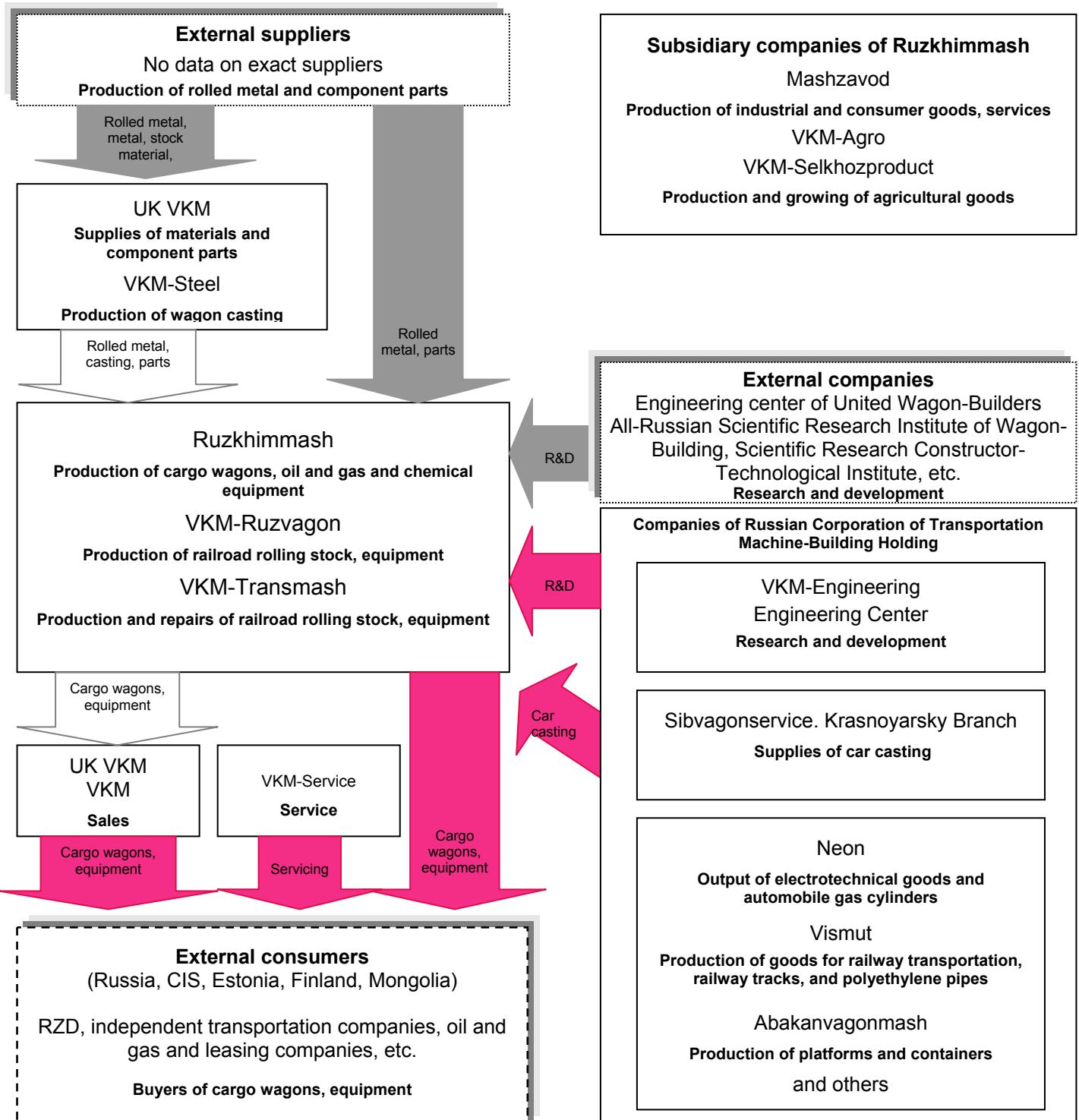
Indicator	2006	2007	Change	1H2008
Revenue	564.1	692.5	22.8%	464.4
Gross Profit	32.8	35.7	8.6%	42.4
Net Profit	9.8	8.3	-15.4%	18.4
Assets	240.1	301.4	25.6%	469.1
Financial Debt	116.0	112.0	-3.5%	275.6
Shareholders' Equity	47.1	56.3	19.5%	76.8
Financial Debt/Assets	48.3%	37.2%	-11.2 p.p.	58.8%
Financial Debt/Gross Profit	3.5	3.1	-0.4	3.3
Gross Profit Margin	5.8%	5.1%	-0.7 p.p.	9.1%

## VKM-Finance (Ruzaevsky Chemical Machine-Building Plant) (3<sup>rd</sup> tier)

Ruzkhimmash (part of the Russian Corporation for Transportation Machine-Building Holding) is one of Russia's leading producers of cargo wagons (4,400 units; according to company estimates, about 15% of the Russian rolling stock market in 2006).

The company had 2007 revenue of \$335 mn and 1H08 revenue of \$189 mn.

Ratings: None



Russian Corporation of Transportation Machine-Building (RKTm) owns 77% of the shares in Ruzkhimmash. The Republic of Mordovia has a golden share in Ruzkhimmash, which allows it to make a veto when deciding strategic questions.

**RKTm** was formed at the end of 2007 by merging railway machine-building assets of Wagon-Building Company of Mordovia Group (VKM) and Russian Machines holding (Basic Element Group).

**VKM Group's** main industrial assets are Ruzkhimmash, VKM-Stal steel plant, and a series of companies for producing railway rolling stock, industrial goods, and growing agricultural products. According to the media, more than 86% of the company's shares belong to the company management (2006 revenue equaled about \$300 mn).

The **Russian Machines** holding unites machine-building companies of Basic Element Group (owner: Oleg Deripaska): GAZ, Abakanvagonmash, Aviakor Aviation Plant, and others, which produce automobiles, railway containers (about 4,000 in 2006), platforms, and special and aviation technical equipment. The holding had 2006 revenue of \$4.5 bn.

VKM Group and the Russian Machines holding own equal stakes in RKTm (50% each). Russian Machines contributed its part using cash (about \$150 mn), while VKM contributed property (Ruzkhimmash, VKM-Stal, and two engineering and service companies). RKTm also manages the operating business of Abakanvagonmash.

Ruzkhimmash is RKTm's main production asset. The plant is located in the Republic of Mordovia and has capacity for output of about 8,000 wagons per year. The coefficient of wear-and-tear of the company's fixed assets in 2006 was rather modest at 25%.

Part of the components and wagon casting for rolling stock are produced by subdivisions of RKTm holding. These subdivisions together form a closed technological cycle.

#### **Main products made by Ruzkhimmash:**

- Cargo wagons (about 90% of revenue in 2006):
  - oil tank cars (about 40%);
  - open wagons (16%);
  - hopper wagons (6%);
  - flatcars (14%).
- Equipment (7%):
  - oil and gas;
  - chemical.

#### **Ruzkhimmash production results:**

- tank cars (2006 — 2,400 units, first 9 months of 2007 — 900 units);
- low-sided wagons (2006 — 1,200 units, first 9 months of 2007 — 700 units);
- fitting platforms (2006 — 800 units, first 9 months of 2007 — 1,000 units).

According to company estimates Ruzkhimmash controlled 40% of the Russian market for production of wagons-tank cars for transporting liquefied hydrocarbon gases in 2006, while its share of the open car market was approximately 4%. The company's range of goods produced includes more than 40 models of cargo wagons.

#### **Main consumers:**

- oil and gas companies (oil tank gars and oil and gas equipment);
- independent transport companies (low-sided cars);
- leasing and transportation companies.

A total of 5% of the company's revenue in 2006 came from exports (CIS, Estonia, Finland, Mongolia).

Ruzkhimmash intends to strengthen its market position, and is modernizing its core assets as well as improving its product line (the company began serial production of 60-foot flatcars and new models of oil tank cars in 2006, while in 2007 it began production of automobile carriers and hopper wagons for delivering cement, and in 2008 plans to produce testing models of wagons with an axle load of up to 25 tons). The company is now looking for foreign partners (the US companies FreightCar America and Triniti, and Southern China Locomotive-Building Company).

Ruzkhimmash should receive a catalyst for development from its entrance into RKT Holding. The latter intends to invest more than \$180 mn into reconstruction of the holding's production capacity and to increase its total output of steel and cast-iron casting to 90,000 tons by 2010, as well as to start assembly of wagon bodies (a main part of wagons). Implementing this program will allow Ruzkhimmash to completely satisfy its own needs for such products.

RKT 's forecasts for 2008 are that it will produce more than 8,000 cargo wagons and 28,000 tons of wagon casting, while revenue will be about \$620 mn and net profit will equal about \$40 mn.

#### Risks:

- Low informational transparency (no consolidated financial reporting, unclear who final consumers are, no data about external suppliers);
- Loss from main activities in 2007;
- High leverage for 1H08.

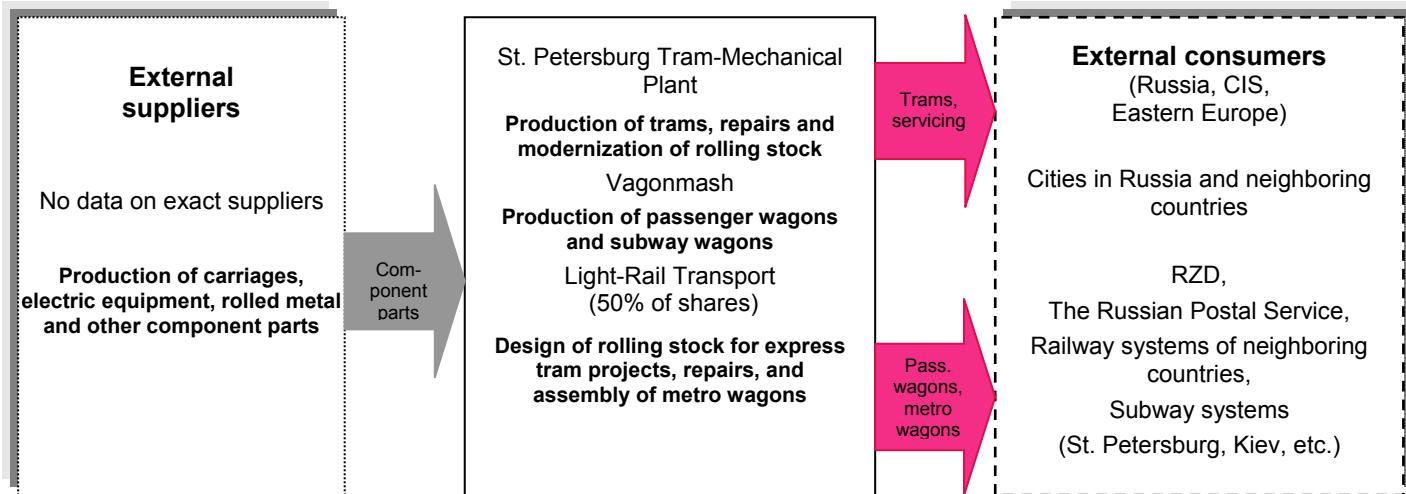
#### Ruzkhimmash financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H2008
Revenue	249.2	335.8	34.8%	188.9
Gross Profit	10.4	-17.4	-267.0%	9.8
Net Profit	2.7	6.6	142.5%	2.0
Assets	111.6	197.7	77.2%	287.9
Financial Debt	61.0	86.1	41.2%	126.3
Shareholders' Equity	34.5	43.2	25.1%	48.2
Financial Debt/Assets	54.7%	43.5%	-11.1 p.p.	43.9%
Financial Debt/Gross Profit	5.8	-	-	6.4
Gross Profit Margin	4.2%	-	-	5.2%

## Vagonmash Group (3<sup>rd</sup> tier)

Vagonmash Group is one of the leading Russian producers of subway cars (40 units in 2006, 20% of the market), as well as passenger (43 units) and tram cars. The company had 2007 revenue of \$91 mn and 1H08 revenue of \$43 mn.

Rating: Expert RA: B+



The main owners of Vagonmash Group as of the end of 2006 were Sergey Kiyashko (61%) and a number of private individuals.

The Group's production assets are located in St. Petersburg. The company had production capacity as of the end of 2006 of about 200 passenger wagons (ZAO Vagonmash) and about 150 tram wagons (St. Petersburg Tram-Mechanical Plant).

### Main products and services of Vagonmash Group:

- Subway wagons (2006 = 40 units, first 9 months of 2007 = 10 units);
- Passenger wagons for locomotive trains (2006 = 43 units, first 9 months of 2007 = 91 units):
  - Postal-luggage wagons;
  - Interregional;
  - Restaurant wagons.
- Tram wagons (2006 — 22 units);
- Capital repair services.

The Group's main sub-division, which generates more than 70% of total revenue, is ZAO Vagonmash (hereon Vagonmash), which produces metro wagons and passenger wagons for locomotive trains (97% of the company's revenue over the first 9 months of 2007).

Besides Vagonmash, Tver Wagon-Building Plant is another Russian producer of passenger wagons for trains. Vagonmash's market share in 2006 (5% of total production) was made possible by the company's niche in the segments for postal/luggage wagons (Vagonmash is a monopolist) and interregional wagons. The situation is somewhat better as concerns subway cars, where Vagonmash controlled 20% of the market in 2006 (80% of the market is controlled by Metrovagonmash, which is part of the Transmashholding Group).

The reason for Vagonmash's small business size is that wagon-building is not a serial type of production. The advantage of Vagonmash's approach to production is that the company can quickly change its line of models. For example, Vagonmash was the first company in the CIS to begin production of subway cars using asynchronous motor drives, while Vagonmash together with Skoda Transportation are planning to produce test models of new generation subway cars with asynchronous motor drives in 2008.

### Main consumers of Vagonmash products:

- RZD (40% of revenue in 2006);
- Railways in countries neighboring Russia;
- Subway systems in Russia, the CIS, and Eastern Europe:
  - State Unitary Enterprise St. Petersburg Metropolitan (22%);
  - Kiev Metropolitan (19%).

Exports to Ukraine and Belarus brought Vagonmash 23% of its revenue in 2006.

The total of payments to be made on contracts signed as of August 2007, was about \$120 mn. RZD is the largest buyer of Vagonmash products. The share of Vagonmash's total revenue from RZD should increase significantly in 2007: contracts were signed between the two sides in 2007 for supplying RZD with 75 railway wagons (+44% vs. Vagonmash's production totals in 2006) for a price of more than \$60 mn.

A positive factor for the company is its expansion abroad. Vagonmash will produce more than 40 wagons for Ukrainian railways in 2007–2008, while starting from 2008 the company will begin delivering 30 wagons for a total cost of \$30 mn to the Warsaw subway.

### Risks:

- High leverage in 1H08;
- Low informational transparency (no consolidated financial reporting after 2005);
- Small business size (the company had revenue over the first 9 months of 2007 of \$57 mn, assets worth \$75 mn, and \$2.6 mn in equity capital);
- Weak diversification of the company's client base (high dependency on large consumers): a total of 80% of the company's 2006 revenue came from RZD and the St. Petersburg and Kiev subway systems;
- Delay in payments leads to a strong seasonal factor in cash flows: the company's main cash incomes from its contracts come in the 3<sup>rd</sup> and 4<sup>th</sup> quarters of the year;
- High deterioration of the company's production equipment (according to company data, as of the end of September, 2007, deterioration equaled 65%).

### Vagonmash financial indicators under IFRS

	2005
Revenue	89.4
EBITDA*	10.3
Net profit	9.0
Assets	90.7
Financial Debt	21.4
Shareholders' Equity	49.1
Financial Debt/Assets	23.6%
Financial Debt/EBITDA	2.1x
EBITDA Margin	11.5%

### Vagonmash financial indicators under RAS, \$ mn

Indicator	2006	2007	Change	1H2008
Revenue	43.6	91.2	109.4%	42.9
Gross Profit	0.1	10.6	7121.5%	6.5
Net Profit	-3.9	3.2	-181.2%	3.0
Assets	77.5	67.2	-13.3%	88.6
Financial Debt	62.8	51.1	-18.7%	64.8
Shareholders' Equity	1.0	4.3	313.4%	5.0
Financial Debt/Assets	81.0%	76.0%	-5.0%	73.1%
Financial Debt/Gross Profit	426.0	4.8	-42120.2%	5.0
Gross Profit Margin	0.3%	11.7%	11.3%	15.1%

## Comparison of Financial Results of Machinery Sector Issuers

### Aircraft producers, \$ mn

Indicator	Irkut SPC Group	Sukhoi Civil Airplanes	Sukhoi Group	RAC MiG	Rostvertol	
Tier	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	2 <sup>nd</sup>	
Rating	Moody's: Ba1/Stable				AK&M: A/Stable	
Business Type	Aircraft Production	Aircraft Production	Aircraft Production	Aircraft Production	Aircraft Production	
Financial Reporting	IFRS for 2007	IFRS for 2007	RAS for 2005	Forecasted RAS for 2006	RAS for 2007	RAS for 11H08
Revenue	1 022.0	0.6	561.0	719.5	283.2	93.0
EBITDA	Operating Profit: 81.0	0.0	45.0	148.4	Gross Profit: 27.1	Gross Profit: 6.3
Net Profit	38.0	0.0	0.2	74.9	13.2	2.6
Assets	1 874.0	675.0	1 992.0	2 335.4	355.3	422.7
Financial Debt	995.0	576.0	264.0	871.9	126.5	125.2
Own Capital	450.0	0.1	1 116.0	-70.5	163.9	172.4
Financial Debt/Assets	53.1%	85.3%	13.3%	37.3%	35.6%	29.6%
Financial Debt/EBITDA	Financial Debt/ Operating Profit: 12.3	-	5.9x	5.9x	Financial Debt/Gross Profit: 4.7	Financial Debt/Gross Profit: 9.9
EBITDA Margin	Operating Profit Margin: 7.9%	0.5%	8.0%	20.6%	Gross Profit Margin: 9.6%	Gross Profit Margin: 6.8%

Irkut SPC, Sukhoi Company, RAC MiG and Rostvertol are all 2<sup>nd</sup>-tier issuers. These companies produce military aircraft and design next-generation weapons systems. These issuers have a strategic importance for Russia's defence industry and, as a rule, receive government support in various forms. These companies have common features: a large share of costs for R&D, the main amount of revenue comes from export sales, and the issuers' business is usually controlled by the state. The yield on these bonds can serve as a benchmark for companies of the defence industry with a high share of R&D costs.

## Aircraft Engine Producers, \$ mn

Indicator	Salut Group	NPO Saturn		Ufimskoe Engine-Building Production Company		Perm Engine Company		Kazan Motor Production Association	
Tier	2 <sup>nd</sup>	2 <sup>nd</sup>		2 <sup>nd</sup>		3 <sup>rd</sup>		3 <sup>rd</sup>	
Business Type	Production of aircraft engines and GTUs	Production of aircraft engines		Production of aircraft engines and GTUs		Production of aircraft engines and GTUs		Production of aircraft engines, GPUs and engines for GPUs	
Financial Reporting	Certain financial indicators for 2006	2007 RAS	1H08 RAS	2007 RAS	1H08 RAS	2007 RAS	1H08 RAS	2007 RAS	1H08 RAS
Revenue	316.6	405.9	116.0	619.5	207.2	335.9	194.5	178.8	82.8
EBITDA	No data	Gross Profit: 4.8	Gross Profit: 10.3	Gross Profit: 4.5	Gross Profit: -29.1	Gross Profit: 15.7	Gross Profit: 8.2	Gross Profit: 26.2	Gross Profit: 0.8
Net Profit	No data	77.5	16.2	16.7	-35.6	2.4	0.1	9.2	6.5
Assets	No data	1 198.1	1 365.9	1 340.5	1 518.5	394.2	511.8	212.8	250.6
Financial Debt	No data	474.8	596.7	616.1	720.3	120.5	166.0	51.3	74.6
Shareholders' Equity	No data	382.1	400.5	479.6	468.4	54.2	57.5	104.2	114.8
Financial Debt/Assets	-	39.6%	43.7%	46.0%	47.4%	30.6%	32.4%	24.1%	29.8%
Financial Debt/EBITDA	-	Financial Debt/Gross Profit: 99.4	Financial Debt/Gross Profit: 28.9	Financial Debt/Gross Profit: 136.9	-	Financial Debt/Gross Profit: 7.7	Financial Debt/Gross Profit: 10.2	Financial Debt/Gross Profit: 2.0	Financial Debt/Gross Profit: 49.6
EBITDA Margin	-	Gross Profit Margin: 1.2%	Gross Profit Margin: 8.9%	Gross Profit Margin: 0.7%	-	Gross Profit Margin: 4.7%	Gross Profit Margin: 4.2%	Gross Profit Margin: 14.6%	Gross Profit Margin: 0.9%

Salut, NPO Saturn, and UMPO are all second-tier issuers. Their main business is production of aircraft engines. The aircraft engine business has a range of particularities: (1) direct dependence of the volume of demand for new engines and repair services on the number of orders for new airplane production and the intensity of their use, (2) the sector is very scientific and is characterized by a large share of total costs on R&D, (3) the sector is strategically important for Russia's defence sector, and thus, as a rule, it receives government support. The sector manufactures a rather liquid product: engines for defence aircraft which are both exported and used in the Russian Air Force. The given issuers have an average creditworthiness based primarily on their high level of debt, and are characterized by significant dependence on suppliers (at times without alternatives). For these reasons one cannot consider these issuers to be 1<sup>st</sup>-tier.

KMPO: considering the small size of the company's business, the fact that KMPO has almost just one customer and weak business diversification (the main source of revenue is engines for gas compressor units), the company has unclear prospects for developing its aircraft engine sector, and that its products are gradually becoming obsolete, this issuer is 3<sup>rd</sup>-tier. PMZ is characterized by: strong dependence on consumers, direct competition with foreign producers, relatively small business size, and a growing debt portfolio.

## Rocket engine producers, \$ mn

Indicator	Motorostroitel	Proton – Perm Motors		NPO Energomash in the name of Academic V.P. Glushko
Tier	3rd	3rd		3rd
Business Segment:	Design and production of rocket engines	Design and production of rocket engines		Design and production of rocket engines
Financial Reporting	2007 RAS	2007 RAS	1H08 RAS	2007 RAS
Revenue	121.7	114.3	71.8	106.1
EBITDA	11.0	12.6	4.7	Gross Profit: -26.8
Net Profit	-1.3	4.9	0.4	1.2
Assets	230.6	155.4	191.8	310.8
Financial Debt	99.8	55.3	102.8	140.8
Shareholders' Equity	45.8	27.4	29.6	49.6
Financial Debt/Assets	43.3%	35.6%	53.6%	45.3%
Financial Debt/EBITDA	9.1	4.4	11.0	-
EBITDA Margin	9.0%	11.1%	6.5%	-

The rocket engine producers analyzed here are all 3<sup>rd</sup>-tier issuers. Positive factors for these companies are that they receive state support and that as a rule they are on the list of strategic companies of Russia, which means they cannot go bankrupt.

That said there are more negative factors for these companies: these issuers are very dependent on their customers, their revenue structure is characterized by low diversification (as a rule they have a very narrow product line made up of 1-2 core models). The given companies have a small business size (annual revenue equals about \$100 mn with assets equaling \$200 mn), while revenue is received in an irregular fashion, thus financial reporting within the year for these companies is not very representative. These issuers also have high leverage as a rule.

## Equipment producers, \$ mn (page 1 of 2)

Indicator	United Machine Building Plants Group (OMZ Group)	Energomash Group (GT-CHP Energo)	Motovilikhinskie Zavody Group	Hydraulic Machines and Systems Group	OZNA Group	Volgaburmash Group	Cryogenmash Group
Tier	2 <sup>nd</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>
Rating	S&P: CCC+/Developing; National Rating Agency: BBB	Expert RA: B+; National Rating Agency: BBB-	National Rating Agency: BBB+; AK&M: A / Stable	-	-	National Rating Agency: BBB-	-
Business Type	Production of equipment and metal products	Production of equipment and metal products	Production of equipment and metal products	Production of oil and gas equipment	Production of oil and gas equipment	Production of drilling tools	Production of chemical equipment and gases
Financial Reporting	2007 IFRS	2007 RAS	1H08 RAS	2007 Consolidated RAS	2007 RAS	1H08 RAS	2007 IFRS
Revenue	829.4	39.0	21.7	445.3	140.6	60.3	166.2
Gross Profit	71.4	0.8	0.4	38.2	8.9	3.6	32.5
Net Profit	33.1	3.7	-0.1	18.0	1.5	-2.2	22.8
Assets	1 377.0	1 248.4	1 274.2	426.9	169.1	201.9	106.0
Financial Debt	350.0	734.4	668.2	173.5	101.2	129.4	35.3
Shareholders' Equity	498.8	357.4	381.8	143.3	7.3	5.6	52.5
Financial Debt/Assets	25.4%	58.8%	52.4%	40.6%	59.8%	64.1%	33.3%
Financial Debt/Gross Profit	4.9	938.3	799.2	4.5	11.3	17.8	1.1
Gross Profit Margin	8.6%	2.0%	1.9%	8.6%	6.3%	6.0%	19.6%
							25.4%
							22.9%
							15.5%

## Equipment producers, \$ mn (page 2 of 2)

Indicator	LOMO		PO UOMZ		EM Alliance	IzhMash	European Bearing Corp Group (EPK Group)
Tier	3 <sup>rd</sup>		3 <sup>rd</sup>		3 <sup>rd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>
Business Type	Optical equipment production		Optical equipment production		Energy equipment production	Weapons production	Bearing production
Rating	-		-		-	-	-
Financial Reporting	2007 IFRS	1H08 RAS	2007 RAS	1H08 RAS	2007 management accounts	2006 management accounts	2006 IFRS
Revenue	61.3	36.2	128.1	59.3	130.0	112.3	302.0
Gross Profit	0.9	7.5	20.5	9.6	EBITDA: 18.9	33.7	59.0
Net Profit	-34.4	2.0	1.4	0.7	4.8	1.5	28.0
Assets	203.8	232.1	228.2	261.8	N/A	342.0	438.0
Financial Debt	170.1	187.1	108.5	131.9	N/A	133.5	224.0
Shareholders' Equity	8.6	14.5	52.2	56.4	N/A	107.1	164.0
Financial Debt/Assets	83.5%	80.6%	47.5%	50.4%	-	39.0%	51%
Financial Debt/Gross Profit	189.0	12.4	5.3	6.9	-	4.0x	3.8x
Gross Profit Margin	1.5%	20.8%	16.0%	16.2%	-	30.0%	19.5%

OMZ is a second-tier issuer. OMZ is a multi-profiled holding with its own metallurgic base; positive characteristics of the company include strong positions on sales markets, a diversified base of consumers both in terms of different sectors and in geographic terms. The company possesses its own steel pouring production, and has good information transparency (ratings and IFRS financials), and is the only producer in Russia of atomic equipment. Motovilikhinskie Zavody, Hydraulic Machines and Systems, OZNA, Volgaburmash, Cryogenmash, and EBC are all 3rd-tier issuers: these issuers have a small business size; as a rule these companies have high leverage and weak information transparency, and are dependent on raw materials prices.

## Vehicle manufacturers, \$ mn

Indicator	AvtoVAZ	GAZ	KAMAZ	Sollers	IzhAvto	Tractornie Zavody	Kirovsky Zavod	Kurganmashzavod	Zavod Avtopribor
Tier	1-й	1-й	1-й	2-й	2-й	2-й	2-й	3-й	3-й
Рейтинги	AK&M: A/Стабильный; Национальное рейтинговое агентство: BBB+	-	-	-	-	-	-	-	-
Business Type	Car design and manufacturing	Design and production of cars, LCVs and engines	Design and production of trucks, special equipment and engines	Assembly of ISUZU, UAZ, SsangYong, FIAT cars	Assembly of KIA, VAZ, IzhAvto cars	Tractor production	Tractor production	Military hardware production	Automotive component production
Financial Reporting	2007 IFRS	2007 IFRS	2007 IFRS	2006 IFRS	1H08 IFRS	2007 RAS	1H08 RAS	2007 RAS	1H08 RAS
Revenue	7 339.9	5 979.4	3 805.2	1 921.0	1 262.0	902.8	538.0	271.4	188.6
Gross Profit	342.4	EBITDA: 606.6	EBITDA: 428.1	242.0	152.0	34.9	20.9	454.2	183.4
Net Profit	143.6	281.8	307.9	102.0	81.0	11.7	7.5	22.7	142.9
Assets	7 143.3	2 852.2	2 674.3	1 550.0	2 050.0	686.4	680.7	266.4	95.6
Financial Debt	1 520.1	1 078.4	499.0	352.0	584.0	410.2	378.2	125.0	57.7
Shareholders' Equity	3 388.3	878.3	1 349.5	751.0	816.0	155.9	170.9	113.1	21.3
Financial Debt/Assets	21.3%	37.8%	18.7%	22.7%	28.5%	59.8%	55.6%	46.9%	3.2
Financial Debt/Gross Profit	4.4	Financial Debt/EBITDA: 1.8	Financial Debt/EBITDA: 1.2	1.5x	1.9	11.7	9.1	2.4	2.2x
Gross Profit Margin	4.7%	EBITDA Margin: 10.1%	EBITDA Margin: 11.3%	12.6%	12.0%	3.9%	3.9%	16.0%	5.9
								EBITDA Margin: 7.8%	6.5
								11.6%	5.5%

AvtoVAZ, GAZ, and KAMAZ are first-tier issuers with a full production cycle, including their own metal pouring production units, research and design centers, and testing facilities. First-tier issuers have a large business size, strong financial results, and a high level of informational transparency: these companies provide financial reporting under IFRS and have a transparent business and ownership structures.

Severstal-Avto, IzhAvto and Tractor Plants are second-tier issuers. The first two have assembly production, and put together automobiles using car assembly kits imported from abroad. These companies do not have their own research and development, and do not design new models. Tractor Plants is a second-tier issuer due to the fact that it has weak informational transparency (the Group does not publish IFRS financials). There is also a weak link between the Group's subholdings. Finally, Tractor Plants has a rather high debt level. Kirovsky Zavod is located on the borderline between the second and third tiers in terms of business size, but has been put in the second tier thanks to its strong debt position. If the company's leverage will increase then we will change our position on Kirovsky Zavod.

Kurganmashzavod and Avtopribor are third-tier issuers for the most part because of their small business size as well as the fact that they are quite dependent on their consumers.

## Rolling stock producers (railway machine-building) \$ mn

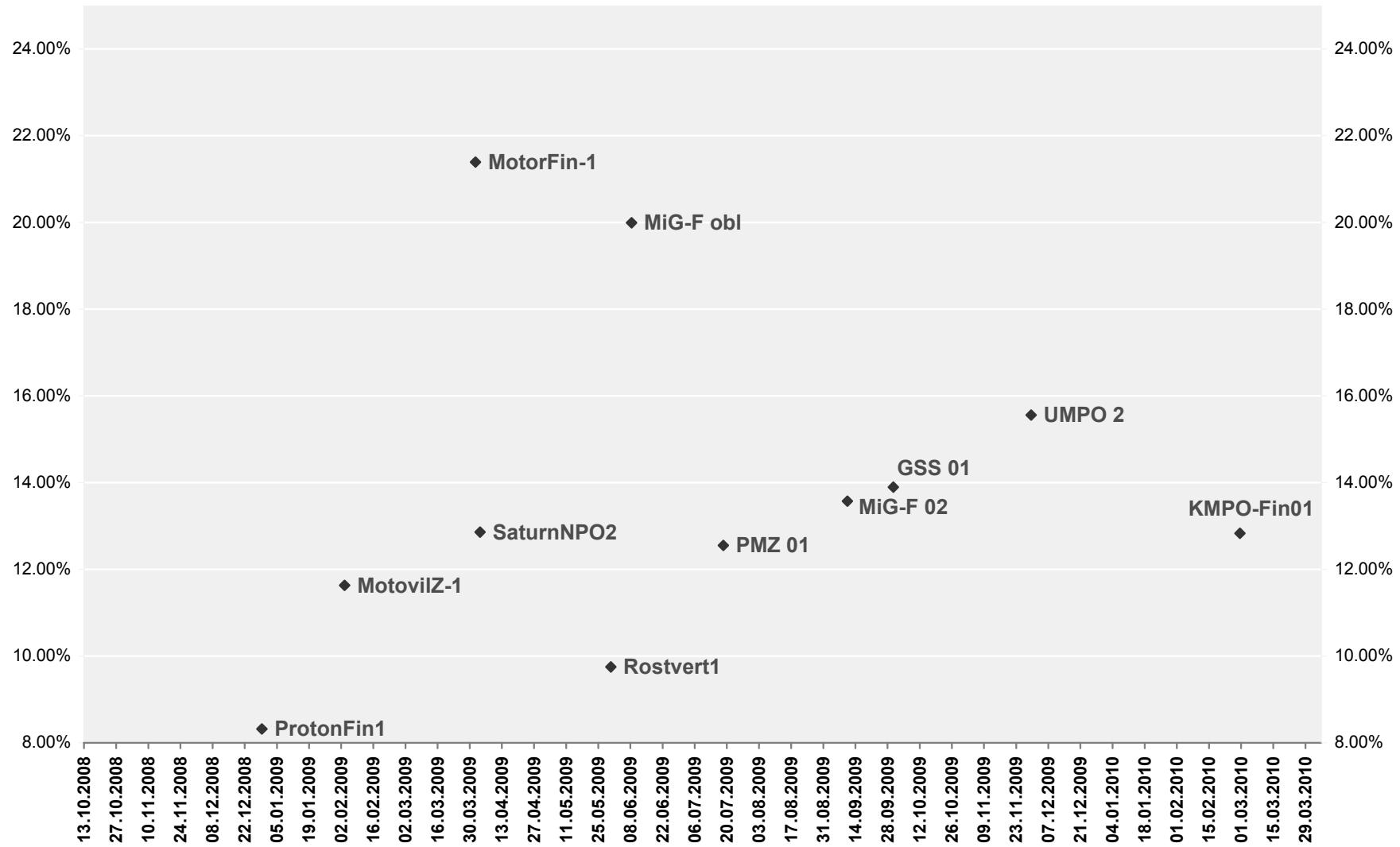
Indicator	Transmashholding		Uralvagonzavod	Tverskoy Vagonostroiteльnyi zavod	RuzHimMash (RTKM Holding)	Vagonmash		
Tier	2 <sup>nd</sup>		2 <sup>nd</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	3 <sup>rd</sup>		
Rating	-		-	-	-	Expert RA: B+		
Business Type	Production of rolling stock		Production of rolling stock and military equipment	Production of rolling stock	Production of rolling stock	Production of rolling stock		
Financial Reporting	2007 RAS	1H08 RAS	2007 RAS	2007 RAS	2007 RAS	1H08 RAS	2007 RAS	1H08 RAS
Revenue	1 768.8	1 090.6	1 549.6	692.5	335.8	188.9	91.2	42.9
Gross Profit	44.6	45.2	26.5	35.7	-17.4	9.8	10.6	6.5
Net Profit	10.8	27.1	N/A	8.3	6.6	2.0	3.2	3.0
Assets	858.0	980.5	N/A	301.4	197.7	287.9	67.2	88.6
Financial Debt	240.1	247.1	643.4	112.0	86.1	126.3	51.1	64.8
Shareholders' Equity	73.3	105.4	N/A	56.3	43.2	48.2	4.3	5.0
Financial Debt/Assets	28.0%	25.2%	N/A	37.2%	43.5%	43.9%	76.0%	73.1%
Financial Debt/Gross Profit	5.4	2.7	24.2	3.1	-	6.4	4.8	5.0
Gross Profit Margin	2.5%	4.1%	1.7%	5.1%	-	5.2%	11.7%	15.1%

Transmashholding, Uralvagonzavod Federal State Unitary Company, and Tver Wagon-Building Plant are 2<sup>nd</sup>-tier issuers. These companies have a medium-sized business, a leading position in their market segments and in the sector as a whole, use a high share of their own components in the goods they produce, and have state capital (the state owns either a blocking or a controlling stake in these companies).

Ruzkhimmash and Vagonmash are third-tier issuers. These companies have a small business size, fill "niche" positions on the market, and are controlled by private capital. A significant risk for these companies comes from the fact that there are no consolidated financials published by the holdings to which they belong. As a result these companies' financial results can be distorted by inter-group operations.

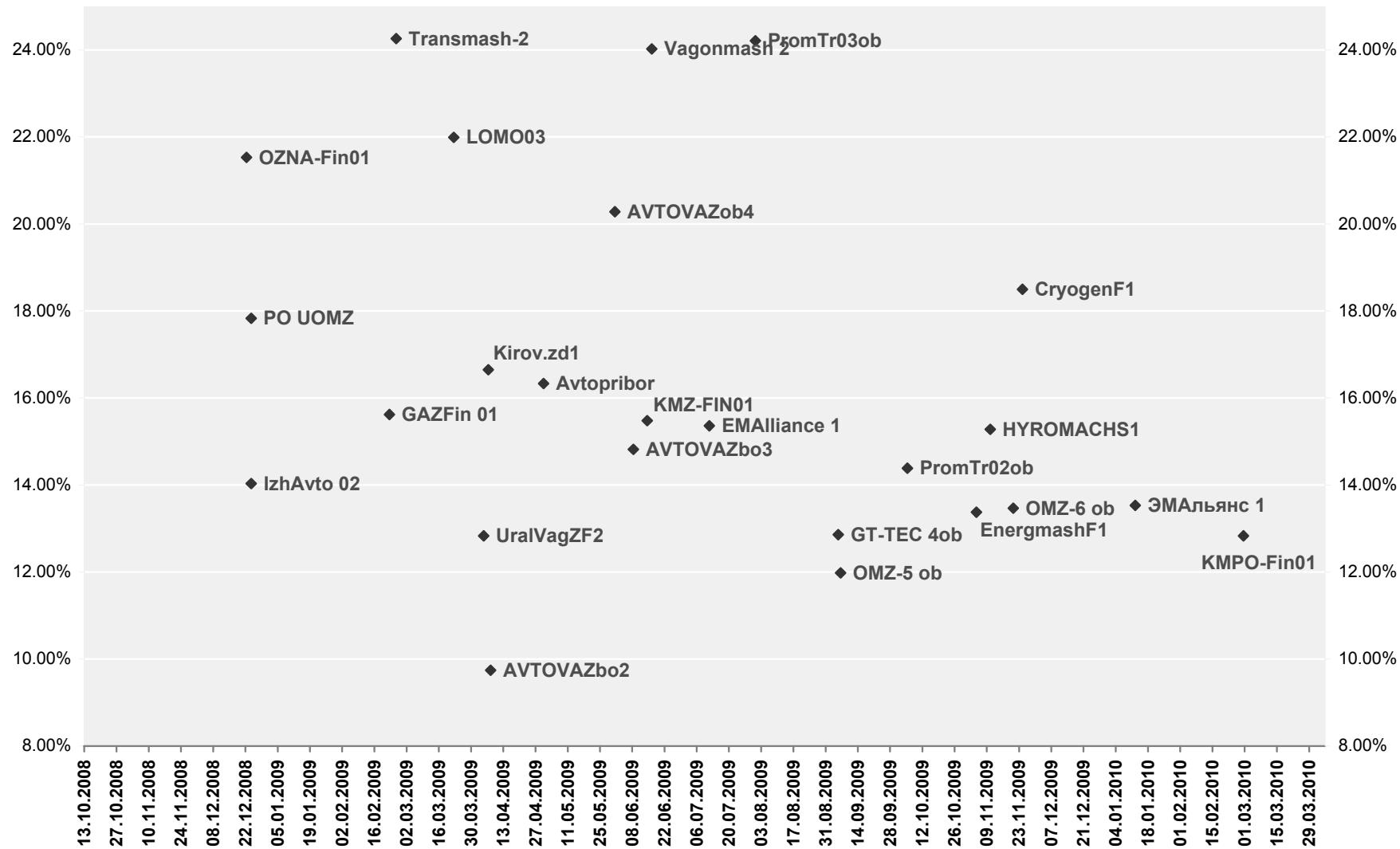
## Machinery Sector Issuers Yield Curve

(AIRCRAFT PRODUCERS, AIRCRAFT ENGINE PRODUCERS, ROCKET ENGINE PRODUCERS)



## Machinery Sector Issuers Yield Curve

(EQUIPMENT PRODUCERS, CAR MANUFACTURERS, ROLLING STOCK PRODUCERS (RAILWAY MACHINE-BUILDING))



## Update history:

Version	Date	Changes
		<ul style="list-style-type: none"> <li>- The RUR to USD exchange rate in the financial reports of the following companies was corrected:           <ul style="list-style-type: none"> <li>• NPO Saturn Group</li> <li>• UMPO</li> <li>• KMPO</li> </ul> </li> </ul>
<b>Mch1.00-1e</b>	<b>08.02.08</b>	<ul style="list-style-type: none"> <li>- The RUR to USD exchange rate in the financial reports of the following companies was corrected:           <ul style="list-style-type: none"> <li>• NPO Saturn Group</li> <li>• UMPO</li> <li>• KMPO</li> </ul> </li> </ul>
<b>Mch1.01e</b>	<b>19.02.08</b>	<ul style="list-style-type: none"> <li>- Reviews of the following companies from the rocket engine production sector were added:           <ul style="list-style-type: none"> <li>• Motorostroitel</li> <li>• Proton – Perm Motors</li> <li>• NPO Energomash in the name of Academic V.P. Glushko</li> </ul> </li> <li>- The market map and table with issue parameters were updated</li> <li>- The summary and recommendations were updated</li> </ul>
<b>Mch1.02e</b>	<b>12.03.08</b>	<ul style="list-style-type: none"> <li>- Surveys of equipment production companies were added:           <ul style="list-style-type: none"> <li>• United Machine-Building Plants Group (OMZ Group)</li> <li>• October Plant of Oil Automatics Group (OZNA Group)</li> <li>• Volgaburmash Group</li> <li>• European Bearing Corporation Group (EPK Group)</li> <li>• Cryogenmash Group</li> <li>• Motovilikhinskie Zavody Group</li> <li>• Hydraulic Machines and Systems Group</li> </ul> </li> <li>Information was added on the following companies:           <ul style="list-style-type: none"> <li>• Irkut Group (the share of the state's non-direct participation in the Group's capital was added)</li> <li>• PMZ Group - (was sold to the Oboronprom Holding and about the signing of a three-year contract)</li> </ul> </li> <li>- The market map and table with bond issue parameters was updated</li> <li>- The conclusions and recommendation were updated</li> </ul>
<b>Mch1.03e</b>	<b>09.04.08</b>	<ul style="list-style-type: none"> <li>- The following reviews of car manufacturing sector companies were added:           <ul style="list-style-type: none"> <li>▪ AvtoVAZ Group</li> <li>▪ GAZ Group</li> <li>▪ KAMAZ Group</li> <li>▪ Severstal-Avto Group</li> <li>▪ SOK Group</li> <li>▪ IzhAvto Group</li> <li>▪ Tractor Plants Concern</li> <li>▪ Kirovsky Zavod Group</li> <li>▪ Kurganmashzavod</li> <li>▪ Avtopribor Zavod</li> </ul> </li> <li>-The following reviews of railway equipment producers (railway machine-building) were added:           <ul style="list-style-type: none"> <li>▪ Transmashholding Group</li> <li>▪ NPK Uralvagonzavod</li> <li>▪ Tver Wagon-Building Plant</li> <li>▪ Ruzkhimmash</li> </ul> </li> </ul>

Version	Date	Changes
		<ul style="list-style-type: none"> <li>▪ Vagonmash Group</li> <li>Significant information was added to the section:</li> <li>▪ Main features of the aircraft and aircraft engine production sector (the Russian government's plans for developing an aircraft engine-building holding have been brought up to date)</li> <li>- The market map and table with issue parameters have been brought up to date</li> <li>- The conclusions and recommendations have been updated</li> </ul>
<b>Mch1.04e</b>	<b>21.04.08</b>	<ul style="list-style-type: none"> <li>- The following reviews of equipment production companies were added: <ul style="list-style-type: none"> <li>▪ Ural Optical and Mechanical Plant produces optical-electronic devices</li> <li>▪ LOMO</li> <li>▪ EM-Alliance Group</li> <li>▪ Energomash Group (GT-CHP Energo)</li> <li>▪ Izhevsk Arms</li> </ul> </li> <li>- Severstal-Avto Financials for 2007 were added and its bond fair price was reviewed</li> <li>- The market map and table with issue parameters have been brought up to date</li> <li>- The conclusions and recommendations have been updated</li> </ul>
<b>Mch1.05</b>	<b>03.10.08</b>	<ul style="list-style-type: none"> <li>- Financials for 2007 and 1H08 were added for all issuers with bonds in circulation, text and reference data was updated. All new and updated data was highlighted in color.</li> <li>- Market maps were updated;</li> <li>- Conclusions were updated.</li> </ul>

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