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# Special Economic Zone in Kaliningrad as a Tool of Industrial Development: The Case of The Consumer Electronics Manufacturing

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## 1. Introduction

This paper considers how the establishment of a special economic zone in Kaliningrad led to the development of a significant consumer electronics manufacturing sector in Kaliningrad. The sector together with the related companies employs approximately 12,000 workers and has an increasing importance for Kaliningrad's economy.

However, the future of the sector is in doubt: its rapid development in recent years was based on the special economic regime in Kaliningrad that provides import tariff exemptions. Recent changes in the Russian import tariffs applied to some electronic components create a significant challenge for Kaliningrad's electronics sector. In a longer-term perspective, the sector should prepare for a planned expiration of the main tariff incentive in Kaliningrad in 2016.

Kaliningrad's electronics sector is making progress in terms of technological level and quality control, its value added and spillover effects on supplier industries seem to be increasing albeit slowly. However, the sector has not been able to attract foreign direct investment from leading multinational firms in the industry that are likely to be essential for its future development.

The first part of the paper describes evolution of the special economic regime in Kaliningrad and its main incentives. The next part deals with the consumer electronics sector in Kaliningrad: its origin, main players and impact on the other sectors. In the third chapter we consider prospects for the electronics sector in Kaliningrad.

The sector is not transparent and information about the sector is quite limited and difficult to verify. Even data from the state statistical office on the sector are often not very plausible. This lack of data has been a limiting factor for quality and comprehensiveness of the analysis.

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## 2. Kaliningrad's Special Economic Zone

Kaliningrad Oblast is the westernmost region of the Russian Federation. It is one of the smallest regions of Russia: its area is 15.1 thousand sq. km and population – 940 thousand (the neighboring Lithuania is approximately four times larger in terms of area and population). The break up of the Soviet Union left Kaliningrad<sup>2</sup> separated from the mainland Russia: the shortest route from Kaliningrad to Moscow involves transit through the territories of two independent states, Lithuania and Belarus.

Kaliningrad's small size, exclave location, and closeness to Central Europe made the region a natural place for economic experiments. Talks about creating a free (or special) economic zone in Kaliningrad started at the end of the 1980s even before the fall of the Soviet Union as a way to accelerate transition to the market economy and to expand foreign trade. In turn, regional authorities saw a free economic zone as a convenient tool to get more autonomy and additional funds from Moscow. This was not a phenomena limited to Kaliningrad — in early 1990s free economic zones were established in 11 Russian regions.

The free economic zone (FEZ) in Kaliningrad was created in 1990-1991 under the name of Yantar (Amber). It covered the whole territory of Kaliningrad Oblast and its main provisions included:

- Duty-free imports and exports to/from Kaliningrad
- Accelerated depreciation of fixed assets
- Tax breaks for foreign investment

The legal foundation of free economic zones in Russia proved to be quite shaky: contradictions of FEZ's regulations with other laws often caused significant legal uncertainties and many initial incentives in the Kaliningrad FEZ were later revoked or reduced in scope by subsequent legal acts. The Russian federal government started the radical market reforms in 1992 including liberalization of foreign trade and thus undermined the initial economic motives for free economic zones. Absence of quick results from such zones caused early enthusiasm with respect to FEZs to disappear. Finally, the large deficit of the federal budget and the pressure from the International

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<sup>2</sup> I will use Kaliningrad and Kaliningrad Oblast interchangeably in this text.

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Monetary Fund to increase tax revenue collection forced the federal government to cancel many tax breaks and duty free import privileges in 1995. This decision essentially abolished free economic zones in Russia including one in Kaliningrad.

However, the situation in Kaliningrad differed from that of other regions. Kaliningrad's geographical location made it strongly dependent on the transit of goods via Lithuania. This caused a significant increase in transportation and related costs in its trade with other Russian regions. Transit of goods through Lithuania has required customs clearing procedures with associated paperwork, time delays, veterinary and phytosanitary controls, additional insurance, etc.<sup>3</sup> These additional costs undoubtedly contributed to the deepening of the economic crisis in the region caused by Russia's transition from a centrally planned economy to a market one. By 1995 Kaliningrad's GRP fell to less than half of its size in 1990 – significantly more than Russia's GDP (Smorodinskaya and Zhukov, 2003).

The federal authorities recognized the special situation of Kaliningrad. Although the federal government abolished the duty-free import regime in Kaliningrad in 1995, it decided to reimburse 75% of customs duties paid by Kaliningrad's companies. Still it was a provisional solution and Kaliningrad's authorities started to lobby for a special federal law that would secure a special regime for Kaliningrad Oblast.

Such a law was adopted by the State Duma on November 15, 1995 and came into force in 1996.<sup>4</sup> It created in Kaliningrad Oblast a special economic zone (SEZ), which covered the whole territory of the province with the exception of military installations, defense companies, and offshore oil rigs. The main incentives of this law were limited to tax-free imports and exports. More specifically, the law's main provisions were the following:

- 1) Foreign goods could be imported to the SEZ tax-free (without import tariffs, VAT and excise tax).<sup>5</sup>

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<sup>3</sup> At one point in 1990s Lithuanian authorities required an armed convoy for transit shipments to/from Kaliningrad.

<sup>4</sup> Federal law №13-FZ "On the Special Economic Zone in Kaliningrad Oblast" dated January 22, 1996. The special economic regime in Kaliningrad Oblast after this law came into force was called a special economic zone.

<sup>5</sup> Excise tax exemption was later revoked.

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2) Goods manufactured in the SEZ from foreign components could be sold in the mainland Russia without paying import tariffs on foreign components and materials if these goods satisfied the rules of origin. The rules of origin contained the following criteria:

- for consumer electronics and some other consumer goods: 15% of value add plus a change in tariff nomenclature (TN VED) code's 5th digit;
- for other goods: 30% of value add and a change in tariff nomenclature code's 4th digit.

The law also included some tax breaks and other incentives but these provisions did not conform to the Russian tax legislation and they were not operational *de facto*.

The main immediate goal for the creation of the SEZ was to provide indirect compensation to Kaliningrad's residents and businesses for the costs associated with region's exclave location. The SEZ offered open access to Kaliningrad's consumer market for foreign goods with the aim of lowering prices for consumers and expanding the range of consumer goods available on the market. The second goal was to create incentives for new manufacturing investments that would use imported raw materials and components for producing finished consumer goods for the Russian market.

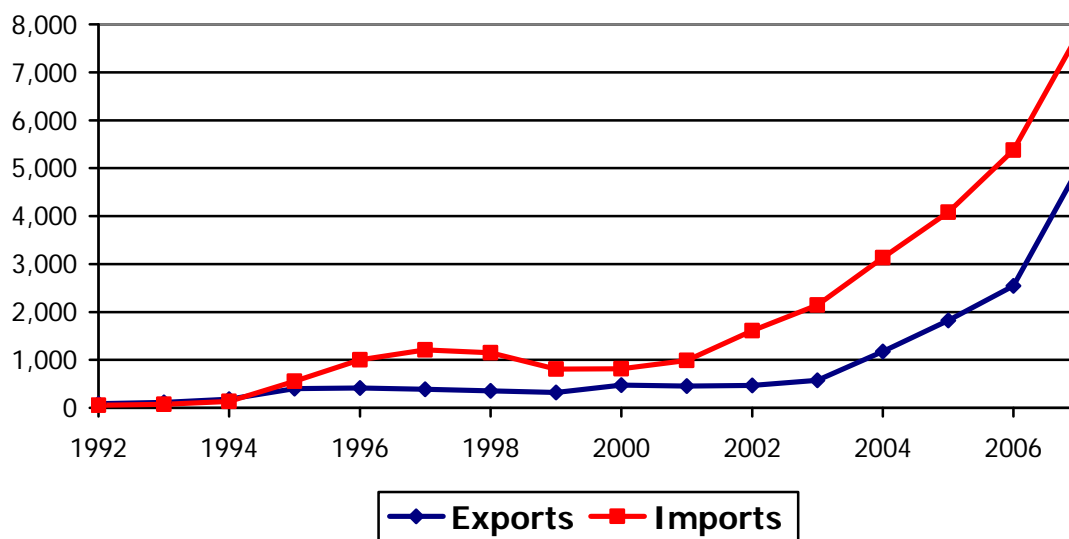
The design of the Kaliningrad SEZ differed from a typical SEZ. Normally economic zones in the WTO member states function as customs enclaves (i.e., their territory is exempt from the customs territory of their country so that import taxes have to be paid in full when transporting goods from the zone to other regions of the same country). However, the Kaliningrad SEZ is a part of the Russian customs territory and goods produced in the SEZ can be sold in Russia duty-free (Vinokurov, 2007). The main incentives in the Kaliningrad SEZ were provided for import-substitution manufacturing while traditionally the main focus in SEZs is on the development of export-processing companies. The fact that the SEZ covers the whole territory of Kaliningrad Oblast is also rather unusual – subsequent Russian legislation on special economic regimes established them for much smaller territories.

The SEZ law helped to introduce more certainty with regard to the legal foundation of the special economic regime in Kaliningrad but it did not stop constant attempts to change provisions of the law. The main opponent of the law was the Federal Ministry

of Finance that on several occasions tried to abolish the main incentives of the SEZ. This did not boost the confidence of potential foreign investors in the stability of the SEZ regime.

Despite all legal uncertainties, the Kaliningrad's FEZ (and later SEZ) provided for duty-free import of foreign goods to the region since 1991 (with some interruptions). Opening Kaliningrad's market for foreign goods had an immediate and predictable effect — imports of foreign goods (first of all, for the consumer market) surged. In five year period of 1992-1997, imports of goods to Kaliningrad increased by a factor of 23: from \$53 million in 1992 to \$1,209 million in 1997! After a fall related to the Russian financial crisis, Kaliningrad's foreign trade, particularly imports, continued to grow strongly since 2001 (see Figure 1).

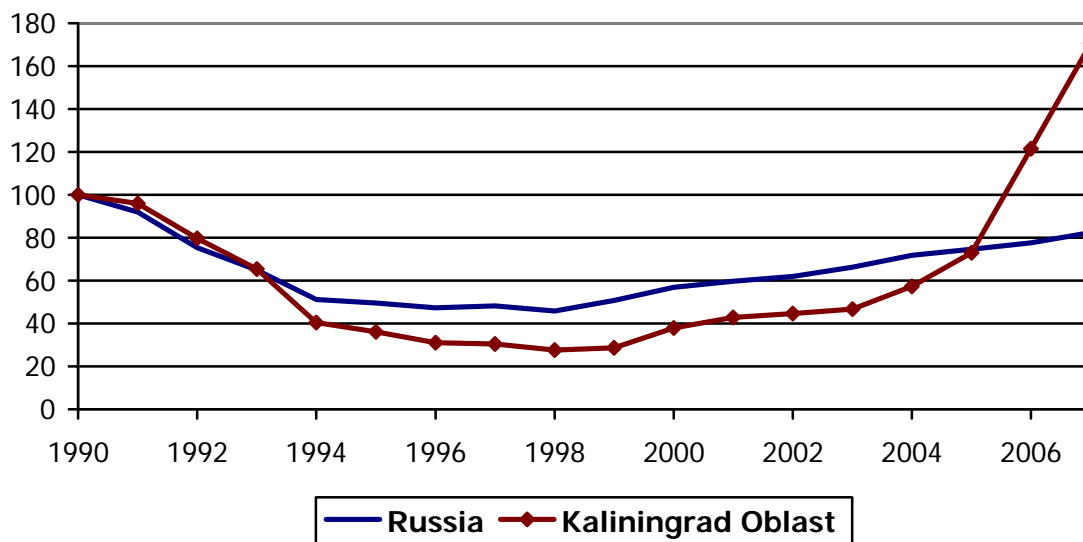
**Figure 1. Kaliningrad's Foreign Trade**



Source: *Kaliningradstat*

Foreign consumer goods easily conquered Kaliningrad's internal consumer market and to a large extent drove out domestically produced goods. On the one hand, it helped to keep consumer price inflation in check — it was closely linked to the ruble exchange rate and was generally lower than that in Russia, except for periods when the ruble depreciated rapidly (e.g. in 1998). On the other hand, this flood of imports was a major factor in a huge fall in Kaliningrad's industrial output — many local manufacturers were simply unable to compete with tax-free imports. In 1998 Kaliningrad's industrial production index fell to 27% of its level in 1990 (see Figure 2).



**Figure 2. Index of Industrial Production (1990= 100)**

Source: Rosstat, Kaliningradstat

At the same time, expectations that the FEZ(SEZ) would attract large manufacturing investments in import-processing plants proved to be unfounded in the first few years of the FEZ's existence. It seems that there were several factors contributing to the dearth of manufacturing investment in the FEZ in the first half of 1990s:

- The tax-free import provided by the Kaliningrad FEZ was not a unique advantage in Russia because many organizations had individual import tariff exemptions until most of these exemptions were revoked in 1995. Corruption at the customs led to widespread black imports (foreign goods brought to Russia without paying official taxes and duties) and weakened the attraction of FEZ incentives.
- Instability of the legal regime of the FEZ and general macroeconomic and political risks in Russia were significant detriments to any would-be investor interested in the FEZ's opportunities in the first half of the 1990s.
- The high cost and limited availability of capital in Russia at that time restrained Russian companies from any significant new investment in fixed capital.

It was only when federal law on the Kaliningrad SEZ came into force in 1996 that legal certainty regarding the SEZ improved enough to attract some investments but the real boom in import-processing manufacturing began with the Russian economic recovery in the aftermath of the financial crisis of 1998.

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The first significant attempt to use SEZ incentives for import-processing production was made by a Russian company, Avtotor, that started to assemble cars for Korean Kia in 1997; however, this project ran into problems almost from the start. The Asian financial crisis in 1997 led to the bankruptcy of Kia. Next year it was Avtotor itself that faced financial difficulties caused by massive devaluation of the ruble during the Russian crisis of 1998. As a result, car production in Kaliningrad remained well below 10,000 p.a. until 2004.

On a smaller scale many small- and medium-sized companies in food processing and furniture making started to use the SEZ mechanism to supply the Russian market with finished goods made from foreign raw materials and components. Strong growth of the Russian economy since 1999 led to the take-off of the import-processing sector in the region, especially consumer electronics manufacturing. Growth in Kaliningrad's production of some consumer goods was indeed astonishing. For example, production of TVs grew from 2001 to 2007 by a factor of 37 and production of cars in the same period by a factor of 22.

Exponential growth in Kaliningrad's import-processing caused some economic dislocations in other Russian regions that had companies whose products were competing with goods produced under the SEZ regime in Kaliningrad. This led to outcries against unfair competition from Kaliningrad's companies and lobbying efforts to restrict or restructure the SEZ incentives. Kaliningrad's import-processing companies were an easy target given the simplicity of their technological operations and low level of capital investment ('screwdriver assembly' or 'lap assembly' were the terms often used by commentators to describe import-processing manufacturing in Kaliningrad). In addition, the federal government was eager to join the WTO but conformity of the 1996 SEZ law with the WTO regulation was in doubt. As a result, the federal government decided to develop a new set of incentives for Kaliningrad more compatible with the WTO rules and based on international practice. The output of this decision was a new draft law on the SEZ in Kaliningrad that was adopted by the State Duma in December 2005 and came into force in April, 2006.<sup>6</sup>

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<sup>6</sup> Federal law №16-FZ "On the Special Economic Zone in Kaliningrad Oblast and Changes in Some Legislative Acts of the Russian Federation" dated January 10, 2006.

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The main provisions of the new law are as follows:

- The new law provides a full income and property tax holiday for SEZ residents for the first 6 years of operation. During the following 6 years the income and property tax of the residents is lowered by 50 per cent. To become a SEZ resident, a company should invest in Kaliningrad at least RUR 150 million (slightly more than €4 mn at the current exchange rate) within 3 years.
- Foreign goods can be brought to the SEZ tax free.
- The law guarantees that the total tax burden will not increase for SEZ residents and new legislative constraints will not apply to them.
- The new SEZ law will be in force for a period of 25 years.
- The law introduced the transition period until 2016. During the transition period companies can operate under the customs regime of the former SEZ with new rules of origin. For consumer electronics companies new rules required to increase value added to at least 30% (from 15% required before that) or to change 4<sup>th</sup> digit in the tariff nomenclature code during the manufacturing process.

Expiration of the transition period provided by the new SEZ law will undoubtedly have a significant negative effect on the financial results of import-processing companies in Kaliningrad as it removes the main incentive for their existence in Kaliningrad. Positive impact of income and property tax breaks on companies' financial performance will be far less than losses caused by application of import tariffs to Kaliningrad-produced goods (Gareev et al, 2005a).

In the meantime, the new SEZ law created a very convenient way to get additional benefits. The new SEZ law forces companies to opt either for the old system of customs incentives that remains valid during the transition period or the new system of investment tax breaks; however, it does not prohibit the situation in which one affiliated company uses customs incentives and the other one enjoys the investment tax holiday.

Many import-processing businesses decided to use this loophole by creating new affiliates that would invest in fixed assets and become residents of the SEZ in order to enjoy tax breaks. Then these asset holders rent out production equipment or plants to affiliated companies that are operating under the provisions of the transition period including the right to supply goods to mainland Russia tariff-free. The major part of the

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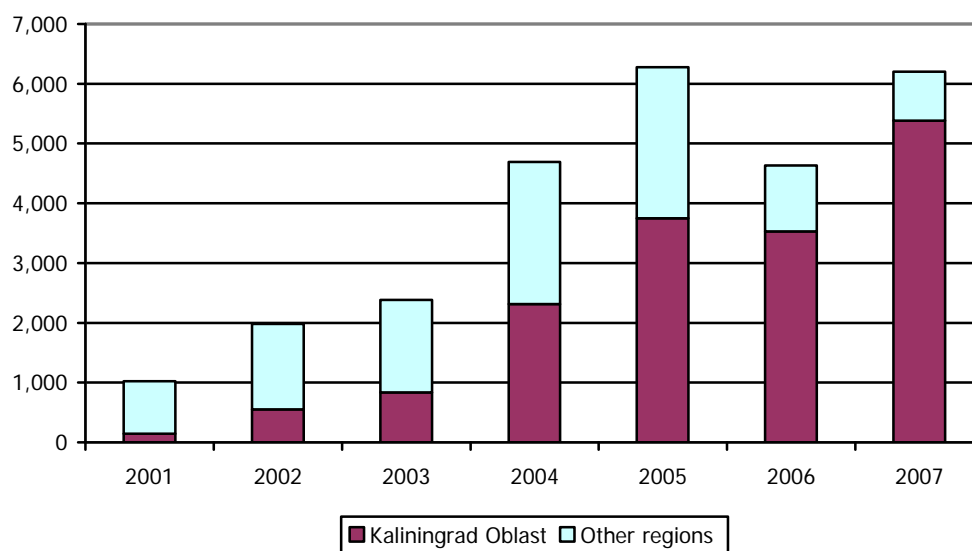
profit is transferred back to the asset holder, which enjoys SEZ income tax breaks, through high rent payments. Thus many companies in the Kaliningrad SEZ are using best of both worlds for the time being – customs and tax incentives simultaneously. While this situation apparently does not contradict the law, there is some risk that the state might not tolerate this situation for the whole duration of the transition period.

### 3. Consumer Electronics Manufacturing in Kaliningrad

Consumer electronics manufacturing has been the largest beneficiary of the SEZ incentives. This sector was a relative latecomer to the SEZ but today it (along with the auto sector) is most often associated with success or excess (depending on the commentator's view) of the Kaliningrad SEZ.

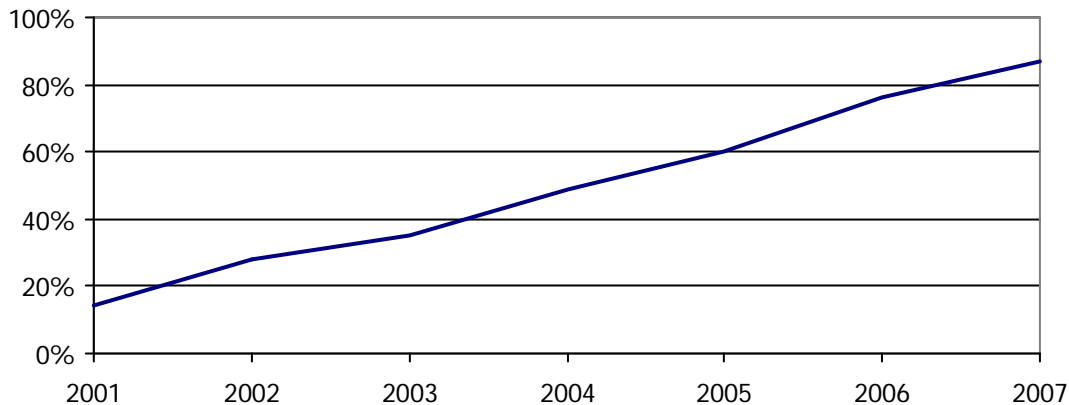
This sector made Kaliningrad Oblast an undisputed leader in production of TV sets and other consumer electronics products in Russia. Kaliningrad took this position almost overnight: until 2000 it did not produce TV sets in any noticeable amount but in 2007 it produced 87% of all TV sets in Russia.

**Figure 3. TV Production in Russia, thousand units**



Source: *Kaliningradstat, Rosstat*

The first company that started production of consumer electronics in Kaliningrad on a significant scale was Telebalt, which was created in December 1999. It was a humble beginning – the company rented old manufacturing space from a former Soviet electric equipment manufacturer. The first TV sets were produced in the spring of 2000. By the end of that year Telebalt was producing only about 2000 TVs a month and had approximately 60 employees. The company assembled TV sets under little-known brands like Erisson, Taurus, Silelis using components imported mainly from Lithuania and China.

**Figure 4. Kaliningrad's Share in Total Russia's TV Production**

Source: Kaliningradstat, Rosstat

This modest start did not stop Telebalt from growing very rapidly. In 2002 it produced 550 thousand TV sets, in 2005 – 1.8 million. To date, it remains the largest producer of consumer electronics in Kaliningrad until now. In 2007 it was included in the list of the largest Russian companies (the 200<sup>th</sup> largest in terms of revenue) by the leading business weekly, *Expert*.

The success of Telebalt was to some extent due to fortunate timing in entering the market. Russia's economy quickly recovered after the shock of the financial crisis in August 1998 and has been growing steadily since 1999. Household income has also enjoyed rapid growth. Growing consumer demand, which was helped by real appreciation of the ruble against US dollars (that made ruble prices for foreign consumer goods lower) and the development of consumer credit, led to the steadily increasing sales of consumer electronics. According to RATEK (Russian Association of Trading Companies and Manufacturers of Consumer Electronics), annual growth of the Russian TV market was 10-15% in volume terms in the last few years.<sup>7</sup> The rapidly expanding Russian market allowed Telebalt to increase production at a dramatic rate without picking tough competitive fights with other Russian manufacturers.

Nevertheless, the rapid growth of Telebalt attracted attention to the company and to the Kaliningrad SEZ from other consumer electronics companies. Since 2002 they have begun to open manufacturing facilities in the Kaliningrad SEZ. Some competitors that tried initially to resist the advance of Kaliningrad electronics companies decided that it

<sup>7</sup> The total volume of the Russian consumer electronics market was USD 27.5 billion in 2006 (including mobile phones and computers) and more than \$30 billion in 2007, according to data from Tekhnosila, one the largest Russian electronics retailers.

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would better to move their production facilities to Kaliningrad if they wanted to remain competitive. For example, in January 2007 one of the largest Russian TV producers, Rolsen, announced that it would completely relocate its assembly facilities from Voronezh to Kaliningrad.<sup>8</sup>

Another recent trend has been a gradual move by the multinational consumer electronics companies from direct imports of finished goods to their assembly in Russia. First but not particularly successful attempts in this direction were undertaken by some companies in the 1990s; however, after 2000 this trend started to gain momentum. One reason for this trend was the customs policy of the Russian authorities – Russia applies smaller import tariffs to electronic components than to finished goods. Better control over payment of customs duties made illegal schemes for customs clearing of consumer electronics goods riskier and reduced their use. In these conditions large multinational consumer electronics companies started to show interest in organizing final assembly of their products in Russia. By doing so they could avoid higher tariffs and reduce costs of their finished goods on the Russian market. International companies that refused to assemble their brands in Russia (mainly because of worries related to quality) had to pay the price in the form of a reduced market share.

Thomson became the first well-known international brand that started to place orders for contract manufacturing of its TV sets in Kaliningrad selecting Telebalt for this purpose, which started to assemble Thomson's TVs in 2001. Opening new production facilities and improving quality control and the technical level of Kaliningrad's companies increased the number of foreign producers ready to have their brands assembled in Kaliningrad. The latest entrants in this field were Sony and Panasonic (Matsushita Electric Industrial Co), traditionally conservative Japanese companies, which selected Kaliningrad's Baltmixt as their contract manufacturer.<sup>9</sup>

In the last two to three years Russian consumer demand started to move from cathode ray tube (CRT) television sets to more expensive flat-panel TVs that include both liquid crystal display (LCD) and plasma technologies. Kaliningrad's electronics companies responded to this shift by upgrading their technological equipment and they recently began to assemble flat-panel TVs: for example, in 2007 production of plasma TVs

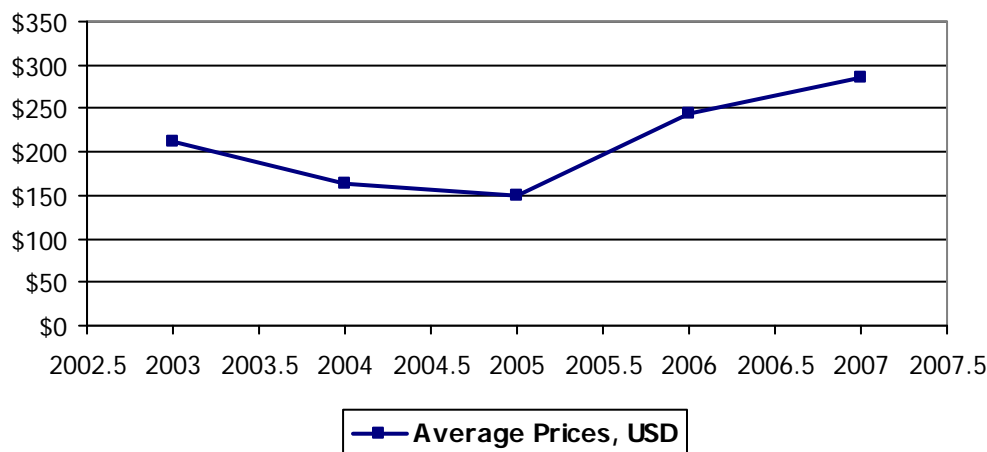
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<sup>8</sup> "Rolsen obyavil sborku v Kaliningrade" (Rolsen announced assembly operations in Kaliningrad), Kommersant, January 22, 2007

<sup>9</sup> "Panasonic vzboltaet Baltmixt" (Panasonic to shake Baltmixt), Kommersant, May 25, 2007

started at Telebalt (for Samsung).<sup>10</sup> This shift is reflected in the growing average price of a Kaliningrad-produced TV set since 2005 despite the general price deflation of consumer electronic products in recent years (see Figure 5).

**Figure 5. Average Wholesale Price for Kaliningrad's TV**



*Source: author's calculations based on the Customs statistics for value of TV shipments to the mainland Russia*

Success in production of TV sets in Kaliningrad opened a way for manufacturing other types of white and brown consumer electronics goods<sup>11</sup> from foreign components including DVD-players, microwave ovens, vacuum cleaners, etc. The same companies that produced TV sets started to produce other consumer electronics using their partnership with foreign brands achieving similar results. For example, Kaliningrad's companies manufactured 85% of all vacuum cleaners in Russia in 2005 while their share in 2000 was essentially zero (see Figure 6).

The range of consumer electronics goods that are produced or are going to be produced in Kaliningrad is constantly expanding. Projects that are currently at the implementation stage are planning to manufacture personal computers, monitors,

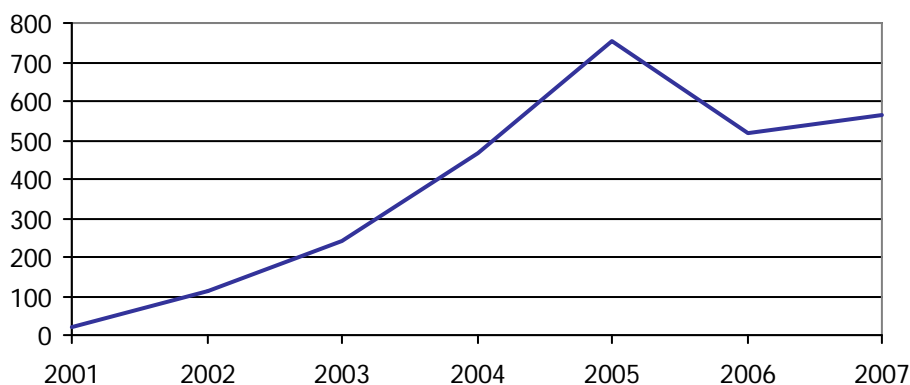
<sup>10</sup> "Pazma potechet iz Kaliningrada" (Plasma to Flow from Kaliningrad: Samsung and LG to Begin to Assemble Plasma TVs at Baltic Factories), *Kommersant*, May, 28, 2007

<sup>11</sup> White goods include refrigerators, washing machines, dishwashers, window air-conditioners, and other household appliances. Brown goods includes home audio and video equipment such as television sets, DVD players, VCR, home stereo systems, and portable audio equipment. See McKinsey Global Institute, 2003



digital still cameras, audio equipment, gaming devices, satellite TV antennas and other receiving equipment.<sup>12</sup>

**Figure 6. Production of Vacuum Cleaners in Kaliningrad Oblast, thousand units.**



Source: Kaliningradstat (2008)

All of Kaliningrad's electronics manufacturers started with very simple semi-knocked down (SKD) assembly operations. However, rapidly growing production, competition for the assembly contracts and stricter rules of origin have led some of them to increase their technological sophistication and value added in the manufacturing process. For example, some companies have started to produce electronic circuits using surface-mount technology (SMT). Another example is production of plastic parts for consumer electronics.

Many plastics parts, including TV chassis and foam plastics packaging have a low value-to-weight ratio and are quite expensive to transport long distances. Having their production close to the final assembly plant makes strong economic sense. Some of Kaliningrad's TV companies, including Radioimport-R and Sovershennaya Tekhnika, decided to produce these parts internally. Among the independent producers the largest one is Knauf-Plast that has invested about RUR 170 million in modern equipment including industrial robots for production of TV chassis, foam plastics packaging and other plastic goods. It was initially intended to be a captive producer for Telebalt but now supplies other consumer electronics producers in the region. Another large plastic plant is being built by Rosplast, near city of Kaliningrad.

<sup>12</sup> These projects are implemented by the following companies: K-Systems, United Gaming and Digital Television Systems. They were approved for the tax breaks by the SEZ Administration.

Another sector where demand from consumer electronics producers had a significant effect on new investment is logistics. Production of TVs and other electronics goods has a high seasonal variability – monthly production within a year can differ by a factor of 3 or more. Transit issues and transport capacity constraints sometimes make the duration of shipment from Kaliningrad to central Russia unpredictable. These factors call for a substantial stock of production components and finished goods. Given the high volume and bulky nature of finished goods and some of the components, space required for their storage is significant. Many producers just do not have enough space to store inventories on-site. This situation (and similar problems in other sectors) spurred investment in modern logistics centers in Kaliningrad Oblast in the last three years. Among the projects that receiving tax breaks according to the new SEZ rules are three logistic centers with a total planned investment of more than EUR 24 million.

These projects might be the rudiments of a competitive supplier base for the consumer electronics sector in Kaliningrad. Development of a strong core of suppliers and service companies is essential for the emergence of a competitive electronics cluster in Kaliningrad; however, it is unlikely to emerge without a focused government effort to attract investment, first of all, foreign direct investment (FDI).

Almost all consumer electronic goods produced by Kaliningrad's companies are sold in Russia – 99% of TVs and 98% of vacuum cleaners. The share of TVs (which represent a dominant majority of consumer electronics goods produced in Kaliningrad) in the total amount of Kaliningrad's manufacturing output produced under the SEZ regime and shipped to other Russian regions has increased from 16% in 2003 to 29% in 2007 (see table 1).

**Table 1. Kaliningrad SEZ Manufacturing Output Shipped to the Mainland Russia, mn USD**

Items	2004	2005	2006	2007
Total, including	1,802.0	2,361.0	3,105.0	5,338.0
Television sets	376.2	562.5	864.7	1,541.7
Video recorders and players	n.a.	33.4	88.8	81.6
Refrigerators	25.5	44.9	58.8	84.6

Source: North-West Customs Office, 2005-2008

According to the Kaliningrad Regional Government, there were 9 consumer electronics assembly plants in Kaliningrad and 7 supplier plants in 2008. Together they employed approximately 12,000 workers. Their total production capacity is about 10 million TV sets annually. The largest consumer electronics producers in Kaliningrad are the following:

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- *Telebalt* was the first producer of consumer electronics goods in Kaliningrad and it is still the largest with an estimated revenue in 2007 of RUR 25 billion. It has several production facilities in Kaliningrad. It produces electronics under its own brand, Ericsson, and assembles many other brands, including Thomson, JVS, Hitachi, and Samsung. It was first among Kaliningrad's electronics producers to implement ERP (enterprise resource planning) system – Microsoft Dynamics. Affiliated with Telebalt company, Technobalt, has committed an investment of RUR 844 million in the expansion of production capacity.
  - *Baltmixt* entered the contract manufacturing market in 2005 when it built a consumer electronics assembly plant to the west of Kaliningrad. The plant is managed by Advantage Group (ADG), whose main business is commercial real estate. The largest electronics retailer in Russia, Eldorado, invested in the plant and Baltmixt has produced private label electronics goods for the retailer. The company announced additional investment in expanding production capacity, upgrading equipment and building a new warehouse totaling RUR 365 million.
  - *Sovershennaya Tekhnika (Flawless Goods)/ Tovary buduschego (Goods for the Future)*. These companies are affiliates of Rolsen. Rolsen moved its production plant from Voronezh to Kaliningrad in 2007. It is the largest plant in Russia by production capacity: it can produce up to 3 million TVs a year. It is estimated that it invested USD 20 million in this plant.<sup>13</sup> It assembles consumer electronics under its own brands, Rolsen and Rubin, and was the main contract manufacturer in Russia for LG. LG was also a major shareholder in the company. Since 2006 LG started assembly of flat panel TVs in its own plant near Moscow.
  - *Radioimport-R* is one of the largest producers in Kaliningrad operating since 2002. Its production capacity is approximately 1.4 million TV sets per year. It has produced a wide range of brands including Shivaki, Daewoo, Sharp, Akai, and Elenberg (private label of Eldorado)
  - *Televolna* is located in Chernyakhovsk, east of Kaliningrad. It is a part of the Polar group of companies. In recent years Polar's share of the Russian TV market has been decreasing. The company was also slow to move to the production of flat panel TVs.

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<sup>13</sup> Kovarnaya Trubka (Tricky Tube), Sekret Firmy, №13 (196), April 9, 2007

As can be seen from Table 2 most of Kaliningrad's producers demonstrate very low profit margin – normally not exceeding 2% (only Telebalt sharply increased its margin to 7% in 2006).

**Table 2. Financial Results of Kaliningrad's Consumer Electronics Producers, RUR million**

Company	2004		2005		2006	
	Revenue	Pre-tax Profit	Revenue	Pre-tax Profit	Revenue	Pre-tax Profit
Telebalt (Телебалт)	7,817	97	10,135	152	15,908	1,094
Radioimport-R (Радиоимпорт-Р)	1,019	n/a	4,360	7	6,176	22
Stela Plus (Стела Плюс)	1,980	35	1,900	10	1,652	42
Televolna (Телеволна)	n/a	n/a	1,145	3	n/a	n/a

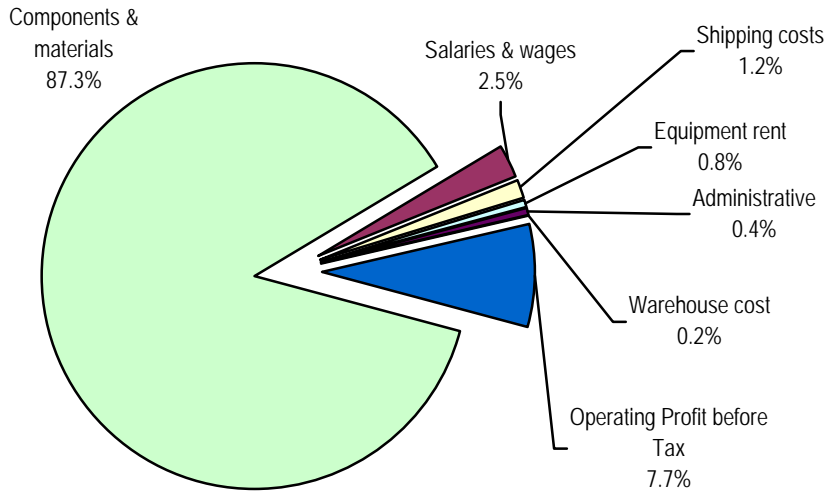
Sources: *Expert North-West magazine, Kaliningrad's Chamber of Commerce*

However, the data from Kaliningrad's Chamber of Commerce suggest that the operating profit of Kaliningrad's electronics companies might be quite substantial – the operating profit margin in the production of a typical CRT TV set was 7.7% in 2006. Operating profits represent more than half of the total value added in the manufacturing process (see Figure 7).

Despite rapid production growth in recent years, official statistical data show that consumer electronics companies in Kaliningrad do not invest much in fixed assets. According to Kaliningradstat, all investment in fixed assets in the “manufacturing of electrical, electronic and optic equipment” sector from 2003 to the end of September of 2007 were only RUR 312.3 million (EUR 8.9 million)<sup>14</sup> or 1.7% of all investment in fixed assets in manufacturing. This figure apparently does not account for all investment made by Kaliningrad's electronics producers – judging by the companies' own announcements of their investments, it should be many times bigger. However, even allowing for possible deficiencies of the state statistics, investment of electronics producers remains relatively small. Kaliningrad's three largest electronics manufacturers taken together committed to investment in the next three years RUR 2,167 million (EUR 59 million) – this is significantly less than the investment of LG Electronics alone in its newly built Russian plant for production of consumer electronics (see below). Even more troubling is the almost complete absence of foreign direct investment in the sector. The sustainable future for the sector is difficult to imagine without significant FDI from the world's leading companies in this sector.

<sup>14</sup> This figure does not include investment of small enterprises and informal economic activity

**Figure 7. Average Cost Structure for TV Produced in Kaliningrad (based on a CRT television set, average data for 1H2006)**



Source: Kaliningrad's Chamber of Commerce

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#### **4. Prospects for Electronics Manufacturing in Kaliningrad**

The rapid rise of the consumer electronics sector in Kaliningrad was not a mysterious development. It was made possible almost exclusively by the SEZ incentives and the tariff policy of the Russian government.

Russia applies a 20% import tariff to television sets. Therefore, a TV set produced in Kaliningrad from foreign components (that can be imported to the Kaliningrad SEZ free of tariff) can be 20% cheaper on the Russian market than the same TV set imported from abroad, all else being equal. This gives a major cost advantage to Kaliningrad's producers and explains why almost all major TV suppliers to the Russian market have had to start contract assembly of their TVs in Kaliningrad.

While import tariffs for components used in the assembly of TVs and other electronics are lower than for finished goods (generally 10%) they are still significant. Thus consumer electronics manufacturers located in other Russian regions are also at a disadvantage to Kaliningrad's producers with respect to the cost of components.

There are other less visible advantages that Kaliningrad's manufacturers enjoy because of their location in the Kaliningrad SEZ. Since they do not have to pay import VAT (18%) on components brought to the SEZ (until the finished goods are shipped to mainland Russia), they can reduce the amount of working capital they have to keep and thus can increase their return on investment. Another advantage is that companies located in the Kaliningrad SEZ can import foreign production machinery and equipment without paying import VAT and tariffs. This incentive was extended for 25 years in the new SEZ law (of 2006) for all companies based in Kaliningrad. Given that almost all production equipment used in TV manufacturing is imported, it is an important competitive advantage. Manufacturing companies in other Russian regions can, in some cases, use similar incentives (for example, when a foreign shareholder uses imported equipment to pay for its share of charter capital) but these incentives are more limited and less flexible than the SEZ incentives for Kaliningrad-based companies.

To some extent these advantages of Kaliningrad's electronics producers are balanced by their higher transportation and other related costs. Nevertheless, according to the

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analysis by MOST Marketing, cost of TV production in the Kaliningrad SEZ is 8-10% lower than in Central Russia.<sup>15</sup>

The SEZ tariff incentives had a similar effect on the production of other consumer goods, which have high import tariff barriers on the Russian market (food products, furniture, cars, etc) in Kaliningrad by granting an important cost advantage to the companies located in Kaliningrad.

Thus, on the one hand, the Russian government, by using relatively high customs tariff, reduced competition from imports for domestically produced consumer goods but, on other the hand, by providing an exemption from these tariffs in Kaliningrad, it encouraged the creation of new import-processing production in this region. Essentially, the import-processing sector in Kaliningrad is an example of tariff-jumping production, which is a common market entry strategy for multinationals in many developing countries that have high tariff barriers.

The SEZ managed to create new sectors in Kaliningrad's economy which are based on the import-processing business model. However, it raises two important questions. What are the costs for the Russian economy caused by the Kaliningrad SEZ incentives? And, what are the long-term prospects for the import-processing sectors?

The author is not aware of a comprehensive cost-benefit analysis of the Kaliningrad SEZ. There are several studies done by various organizations that tried to evaluate some aspects of the problem (such as loss of budget revenues due to the SEZ regime, or budgetary transfers between Kaliningrad and Moscow). They do not give the whole picture and are often quite politicized. On the conceptual level, the Kaliningrad SEZ allowed foreign goods after some processing in Kaliningrad to avoid customs tariffs. This caused loss of federal budgetary revenue and economic problems in the Russian regions that had companies unable to compete with tariff-free imports. At the same time this brought lower prices to Russian consumers and new jobs to Kaliningrad Oblast. The balance of these costs and benefits is unclear. At the same time, it should be noted that, from a narrow economic efficiency viewpoint, the Russian government could achieve similar benefits at less cost by lowering import tariffs across the whole country.

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<sup>15</sup> <http://www.kommersant.ru/doc.aspx?docsid=735778>

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There is also a geopolitical dimension of the cost-benefit calculations. The SEZ regime made Kaliningrad's economy very dependent on the Russian market and significantly strengthened economic links between Kaliningrad and the mainland. As it was mentioned above almost all output of the import-processing sector goes to mainland Russia. Given Moscow's fears of Kaliningrad's separatism such a close economic association was not an undesirable outcome.

Economic costs of the SEZ incentives will be more justified in the long-term perspective if Kaliningrad's import-processing sector can develop into competitive clusters able to survive international competition without lifeline of tax breaks or tariff protection. We will consider below some of the factors that might affect the development of the consumer electronics manufacturing in Kaliningrad.

It is obvious that the growth rate for Kaliningrad's electronics sector in the future will be lower than it was in the recent past since Kaliningrad's manufacturers already produced 87% of TVs made in Russia in 2007. The determining factor for their future expansion will be growth of the Russian electronics market and tariff policy, in particular size of import tariffs for electronics components and for finished goods, including television sets, video recorders and vacuum cleaners. Slower growth will put more competitive pressure on smaller and less efficient producers and could lead to their closures or takeovers by stronger competitors.

A recent decision by the Russian government to set zero import tariffs for components used in assembly LCD and plasma TVs (Government's decision №659 dated September 11, 2008)<sup>16</sup> is an important test case. Clearly, part of flat-panel TV production will move from Kaliningrad to other Russian regions. For example, one of the largest contract electronics manufacturers, Flextronics International, from Singapore, actively lobbied for this decision promising to invest USD 50 million in an electronics manufacturing plant in St. Petersburg. Korean companies, LG and Samsung, recently built plants for production of consumer electronics not far from Moscow and were also very interested in this decision.

Competing with these leading international companies will be a tough challenge for Kaliningrad's electronics producers. In any case the main incentive established by the SEZ law of 1996 that led to creation of the sector in the SEZ – lifting customs duties for

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<sup>16</sup> "Poshliny ischezly s ekranov" (Tariffs disappeared from screens), Kommersant, September 19, 2008



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goods produced in the SEZ from foreign components – will expire in March 2016 after the end of the transition period established by the new SEZ law. Is there a future for the sector in the SEZ after the end of the transition period? Can Kaliningrad's manufacturers move up in the value chain similar to the process that can be observed in China? These are questions that are important both for the economic development of Kaliningrad Oblast and for long-term potential investors to Kaliningrad. Below we will briefly consider some major factors that impact companies' decisions on the location of their manufacturing facilities with respect to Kaliningrad Oblast in order to get a general picture of Kaliningrad's strengths and weaknesses as an electronics manufacturing center.

The investment or business climate is one of the most important factors determining attractiveness of a particular region for domestic and foreign investment. It is a broad term describing government regulation as well as informal practices for conducting business. The main features of the investment climate in Russia are determined by the federal legislation. While opportunities for the regions to develop their own investment legislation are limited there might be quite significant differences between the regions for them in terms of ease of doing business. Normally, business climate in Kaliningrad Oblast tend be rated as above the average. For example, according to the Russian edition of Forbes, city of Kaliningrad has the best business climate among Russian cities and was second best for doing business in general (after Krasnodar).<sup>17</sup>

Kaliningrad has a special fiscal regime and even after expiration of the transition period companies investing in the Kaliningrad SEZ will have significant tax breaks. There is also regional investment legislation that provides interest rate subsidies for investors and support in getting necessary approvals and licenses.

The rating agency, Expert RA, assessed investment risk in Kaliningrad as low<sup>18</sup> but in our view this is too optimistic an assessment. The special fiscal regime in Kaliningrad is in itself a source of additional legislative risks for companies whose business is based on the SEZ incentives. First, some issues related to the new SEZ law, such as the list of goods prohibited for duty free imports to the SEZ or the list of simple technological operations (these operations do not satisfy the SEZ rules of origin), are

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<sup>17</sup> Forbes' rating excluded Moscow and St. Petersburg and some cities from North Caucasus from consideration, Forbes (Russian Edition), June 2008.

<sup>18</sup> [http://www.raexpert.ru/rankingtable/?table\\_folder=/region\\_climat/2007/tab1/](http://www.raexpert.ru/rankingtable/?table_folder=/region_climat/2007/tab1/) (as of Sep 23, 2008)

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regulated by the federal government and can be easily changed in a way that negatively affects business operations in Kaliningrad. Second, reduction of import tariffs expected in the course of Russia's accession to the WTO will have a negative effect on profitability of contract electronics manufacturing in Kaliningrad.

At the same time it should be noted that the implementation of the new SEZ law has been going on relatively smoothly so far (with an exception of the situation around Kaliningrad's automaker, Avtotor). The law itself has an article that guarantees the SEZ residents that their tax burdens will not increase.

Kaliningrad Oblast does not have a particular competitive advantage in terms of its geographical location for serving the mainland Russian market (with Moscow as the main consumption and distribution center). The main strength of Kaliningrad's location is the existence of ice-free sea ports that simplifies and makes less costly delivery of goods from other countries. Another of Kaliningrad's advantages is the well-developed transport infrastructure in Kaliningrad itself (by Russian standards) and in neighboring countries including car and railway roads, border crossing points, etc.

Nevertheless, the weaknesses of Kaliningrad's location outweigh its strengths. Kaliningrad is relatively far from Moscow – the distance between them is more than 1200 km. However, the main and fundamental disadvantage is Kaliningrad's exclave location, its separation from the mainland Russia. Exclavity creates additional costs for the Kaliningrad's economy mainly related to the additional transportation and transit expenses (Vinokurov, 2007):

- higher costs of energy (natural gas, electricity, etc.) due to longer distances and costs of transit through the foreign territory;<sup>19</sup>
- higher cargo tariff for Lithuanian and Byelorussian transit;
- time losses due to customs clearing and the passage of borders;
- additional expenses for foreign transit (insurance, environmental duties, delivery guarantee, veterinary and phytosanitary controls, etc.).

According to the estimates of the Kaliningrad Regional Administration, total economic losses and costs of exclavity in 2004 reached 10.5 billion roubles (€309 million) or 12%

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<sup>19</sup> Planned construction of a large nuclear power station in Kaliningrad can improve the situation with the cost and reliability of electricity supply in the region

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of Kaliningrad's GRP in that year.<sup>20</sup> For example, the prices of the main fuels, delivered by railway, were 10-15% higher for Kaliningrad consumers compared with average prices for consumers in mainland Russia (Vinokurov, 2007).

In addition to the direct exclave costs, there is the potentially significant indirect cost that is difficult to quantify. For example, worsening of relationships between Russia and Lithuania can easily lead to additional costs and time losses for transportation of goods to/from Kaliningrad. This vulnerability of transport flows between Kaliningrad and mainland Russia represents additional risk for investors in Kaliningrad.

Infrastructure conditions for business in Kaliningrad correspond to the average level in the European part of Russia: the higher cost of energy and difficulties with access to electricity supply is somewhat balanced by more developed road infrastructure.

Kaliningrad has a low level of unemployment – at the end of 2007 the unemployment rate in Kaliningrad was just 3.4% vs. 6.1% for Russia. Availability of human resources in the region is becoming more and more limited. Many companies note that recruitment of adequate personnel is getting more difficult especially in the city of Kaliningrad and neighboring districts. Commercial and industrial activity in the region is heavily concentrated in the city of Kaliningrad: it represents more than 2/3 of industrial output but it has only 45% of the region's population. In more distant from the city districts there is often significant unemployment and wage levels may be 2-3 times lower than in Kaliningrad. This situation encourages companies either to set up new manufacturing facilities further from the city of Kaliningrad or use these more remote districts as a source of labour force.

Growing demand for labour is reflected in rapidly rising wages and salaries. If in 2000 the average wage in Kaliningrad was 79% of the average level in Russia, in 2007 it grew to 94%. Increase in an average monthly wage measured at the current exchange rate in US dollars was even more impressive – it went up from \$89 in 2001 to \$498 in 2007. Although the average wage in Kaliningrad is still lower than the average wage in Russia, it is already higher than wages in central regions of European Russia, which are often considered as locations for manufacturing FDI and, in this sense, the main competitors for Kaliningrad.

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<sup>20</sup> In author's personal view these figures are likely to be significantly overestimated. Kaliningrad Regional Administration was interested in exaggerating exclave cost to get more funds and fiscal incentives for Kaliningrad from Moscow. However, author is not aware of any other quantitative estimate of exclave cost for Kaliningrad.

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A positive factor for further development of the consumer electronics sector in Kaliningrad is the existing high concentration of enterprises from this sector in the region. Although this concentration is a direct result of the special fiscal regime in Kaliningrad, it creates several opportunities for developing a sustainable competitive advantage for the sector in Kaliningrad. First, such geographical proximity of firms working in one sector facilitates flow of successful business practices, management know-how, technologies and talent, which in turn contribute to the improved effectiveness of all companies (Porter, 1998).

Second, it creates significant demand for many jointly used resources and infrastructure and helps suppliers of these resources achieve the minimum efficient scale more easily if they locate their production in the same region. For example, if a TV component supplier decides to locate its production facility in the Kaliningrad SEZ it will get ready access to a large market and can cut cost of distribution and logistics. As it was noted above, the demand from TV manufacturers has played an essential role in the establishment of logistics centers and suppliers of plastic part for TVs in Kaliningrad.

Finally, such a concentration helps to develop a pool of specialized skilled labour that, again, can benefit all firms in the sector. To summarize it all, existing geographical proximity of consumer electronics companies encourages development of related and supporting industries and is an important precondition for developing the competitive cluster in this sector in Kaliningrad.

Government policies can play an important role in the development of the cluster. To what extent the Kaliningrad Regional Government sees the development of the consumer electronics sector as a priority? It looks as if it does not believe in the long-term prospects for the sector in the region. The chapter in its Socio-Economic Development Programme devoted to industrial policy notes that the regional authorities will provide administrative and legal help in the development of clusters in the following manufacturing sectors:

- Food processing
- Furniture making
- Construction materials manufacturing
- Shipbuilding and shiprepair

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- Amber mining, processing and design

The consumer electronics sector was not included in this list. Although in other chapters the programme emphasizes the importance of successful implementation of several “flagship” investment projects, which include construction of new plants by two consumer electronics companies, Tekhnobalt and Investproekt, but it does list any practical measures for their support. On the whole, in our view, the attitude of regional government can be summarized as follows – existence of consumer electronics companies in the region is a positive factor for the economic development and job creation but the development of successful and competitive cluster in consumer electronics is either too complex or simply an unrealistic task.

So far no multinational company has decided to invest in its own consumer electronics production facility in Kaliningrad. For example, the Korean company, LG Electronics, together with its suppliers invested approximately US \$150 million in a new plant in Ruzha (100 km west of Moscow), which was opened in the autumn of 2006 in the presence of the Russian Prime-Minister.<sup>21, 22</sup>

Samsung has considered Kaliningrad Oblast as a possible location for its new plant and had negotiations on this subject with the Kaliningrad regional government but in the end it decided to build the plant, which will manufacture mainly LCD and plasma TVs, near Kaluga, in the industrial park, Vorsino. Total investment in the plant should be approximately RUR 3.5 billion. It is expected that the plant will create about 2,000 new jobs.<sup>23</sup> The first stage of the plant was opened in September 2008.<sup>24</sup> It plans to produce 1.5 million TVs in 2009. When the plant is fully completed in 2011 it will have the production capacity of 2.8 million TVs.<sup>25</sup>

In summary, prospects for the Kaliningrad electronics sector do not look very bright. Kaliningrad does not have any particular strong competitive advantage to be an

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<sup>21</sup> LG Electronics Completes Construction of Russian Plant, Sep 6, 2006  
[http://www.lge.com/ir/news\\_ir/detail/PRE%7CMENU%5EPRER%7CMENU\\_20248\\_PRER%7CMENU.jhtml](http://www.lge.com/ir/news_ir/detail/PRE%7CMENU%5EPRER%7CMENU_20248_PRER%7CMENU.jhtml)

<sup>22</sup> LG continued to place orders for assembly of its TVs to Kaliningrad’s companies even after it opened its own plant.

<sup>23</sup> <http://top.rbc.ru/retail/05/09/2007/117249.shtml>

<sup>24</sup> “Samsung soberut v Kaluge” (Samsung will be assembled in Kaluga), RBK Daily, Sep 5, 2008

<sup>25</sup> <http://top.rbc.ru/retail/05/09/2007/117249.shtml>

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electronics manufacturing center. To serve the Russian market it is disadvantaged by its exclave location. Focus on the European market is hindered by Kaliningrad's position outside the common EU market and the EU trade barriers. Lack of investment from multinationals so far supports this assessment.

However, it does not mean that the electronics sector in Kaliningrad does not have any chance for the future after 2016. Kaliningrad's main advantage is the current high concentration of electronics assembly companies that could lead to the positive effects for the sector development. To compensate for their exclave location Kaliningrad's companies can start focusing on goods with high value to weight ratio, such as laptop computers, mobile phones, portable radios, etc. which are less expensive to ship. The Kaliningrad Regional Government can provide support to the sector by financing training programs for workers, working on the improvement of transport infrastructure and attracting investment from leading electronics companies and their suppliers.

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## 5. Conclusion

The tariff incentives (under the special economic zone regime) have been able to create in Kaliningrad a significant consumer electronic sector. Within few years Kaliningrad's share in TV production in Russia rose from zero to almost 90%. While growth of the consumer electronics sector in Kaliningrad is impressive but the economic rationale for the significant consumer electronics sector in Kaliningrad is unclear – the region is located quite far the main consumption centers in mainland Russia and is separated by Lithuania and Belarus. The existing consumer electronics enterprises carry out mainly simple assembly operations and their value add and spillover effects for other sectors of the regional economy are limited. Foreign direct investment in the sector is essentially absent. The recent changes in the Russian import tariff policy and expiration of the old SEZ transition period in 2016 can easily kill the sector.

Nevertheless such a concentration of consumer electronics manufacturers provides important preconditions and potential for the future development of the sector. It encourages location in the region suppliers of components for consumer electronics products, development of a qualified labour force, flow of best business practices and know-how.

To realize this potential it is hugely important for Kaliningrad to attract foreign investors with technological know-how. So far consumer electronics multinationals avoided investment in Kaliningrad. The Kaliningrad Regional Government should make this as priority if it wants to ensure long-term future for the consumer electronics sector in Kaliningrad even in a reduced form.

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