New trends and growth points of the basic industries of the industrial region

Olga A. Romanova
Institute of Economics of The Ural Branch of the Russian Academy of Sciences
Structure of the report

- Current situation
- Trends in the development of metallurgy
- Opportunities and threats of the development
- Modernization of traditional industries
- Identifying strategic priorities for the development of metallurgy
- Vector of development and growth points of the regional economy
- Industrial policy as an instrument of regional development strategy
Ural Federal District
1. Sverdlovsk Region
2. Kurgan Region
3. Tyumen Region
4. Khanty-Mansi Autonomous Area
5. Chelyabinsk Region
6. Yamalo-Nenets Autonomous Area

Federal subject | Administrative center
--- | ---
Sverdlovsk Region | Yekaterinburg
Kurgan Region | Kurgan
Tyumen Region | Tyumen
Khanty-Mansi Autonomous Area | Khanty-Mansiysk
Chelyabinsk Region | Chelyabinsk
Yamalo-Nenets Autonomous Area | Salekhard
Current situation

GRP structure of the Sverdlovsk region

Index of GRP volume of the Sverdlovsk region and GDP of the Russian Federation
The index of industrial production in the Sverdlovsk region of relatively average values in 2007
Scheme of the location of metallurgical enterprises in the Sverdlovsk region

Sverdlovsk region

Area - 194,300 km² (17th place among the regions of Russia)
Population - 4.4 million (2009, 5th place among the regions of Russia)
GRP - 835 billion rubles (2009, 6th rank among the regions of Russia)

Administrative Center - Yekaterinburg (1.3 million people, 2009 - 4th place among the cities of Russia)

The structure of the regional economy historically dominated by the mining industry, ferrous and nonferrous metallurgy, machine building.
Production of iron, thousands of tons per year

Current situation

<table>
<thead>
<tr>
<th>Year</th>
<th>Production in all</th>
<th>Production including OJSC Nizhniy Tagil Iron and Steel Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4994,2</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>5346,3</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>5294,4</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>4501,5</td>
<td></td>
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</tbody>
</table>
Steel production, thousands of tons per year

- in all

- including OJSC Nizhniy Tagil Iron and Steel Works
Production of primary aluminum and refined copper, thousands of tons per year.

Nickel product, thousands of tons per year.

Current situation

- Aluminium
- Copper
- Nickel
The volume of investments in the mining and metallurgical complex of the Sverdlovsk region (2010 – expected)
The share of metallurgy production of the Sverdlovsk region in the Russian volume of production

<table>
<thead>
<tr>
<th>Indicators names</th>
<th>Indicators values, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>- steel</td>
<td>10,2</td>
</tr>
<tr>
<td>- rolled metal</td>
<td>11,3</td>
</tr>
<tr>
<td>- steel pipes</td>
<td>26,0</td>
</tr>
<tr>
<td>- refined copper</td>
<td>38,0</td>
</tr>
<tr>
<td>- titanium products</td>
<td>≈ 100</td>
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<tr>
<td></td>
<td>(27% of the world market)</td>
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</tbody>
</table>
The role of metallurgy in the economy of Russia and its regions

- In production output of manufacturing activities
- In export
- In the balanced financial result

- Russia: 20% (production), 15% (export), 6% (financial)
- Ural Federal District: 40% (production), 18% (export), 12% (financial)
- Sverdlovsk region: 62% (production), 60% (export), 42% (balanced financial result)
Foreign trade turnover of the Sverdlovsk region in 1998-2009, billions of dollars (at current prices)
Commodity composition of export output of the Sverdlovsk region in 2009, %
Structure of foreign trade relations of Sverdlovsk region, 2009

Current situation
The dynamics of innovation activity in organizations of Russia and Sverdlovsk region

A) Proportion of organizations engaged in technological innovation, % of organizations

B) The share of innovative products in total volume, %
Tendencies of the world metallurgy development:

- increased expansion of China and other Asian countries in world metal production markets;
- reducing of the European and American metallurgy influence on the development of world metal market;
- increased competition for raw material assets;
- the increasing role of innovations in the technological development of the metallurgy and activization of the modernization processes of the industry;
- the increasing role of rare metals in the development of high-quality metallurgy and high-tech products manufacturing;
- tightening the requirements for ecological compatibility growth of the metallurgical processes, particularly because of the threats of climate warming.
Tendencies of domestic metallurgy development:

• concentration of specialized production in the domestic market;
• integration of metallurgical enterprises in the domestic and foreign markets along with the acquisition of assets of rerolling production in foreign countries;
• transition of the industry to IPO;
• active development of the processes of restructuring and outsourcing; updating of the problems of development of mini-plants;
• acquisition of related industries assets by the companies;
• diversification of integrated companies and holdings investments into other types of production – to the consumers of metal production
## SWOT analysis of metallurgy development in Sverdlovsk region (samples)

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
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<tbody>
<tr>
<td>1. Own mineral resources</td>
<td>1. Low level of extraction of useful components</td>
</tr>
<tr>
<td>2. Successful large-scale reconstruction</td>
<td>2. High depreciation of fixed assets in traditional industries</td>
</tr>
<tr>
<td>3. Scientific, project and human resource capacity</td>
<td>3. Low innovation activity</td>
</tr>
<tr>
<td>4. Prepared research and development, new technological solutions</td>
<td>4. Increased material and energy consumption of production</td>
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<td>5. Low level of recycling</td>
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### Opportunities

<table>
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<tbody>
<tr>
<td>1. Expected increase in domestic consumption of steel products</td>
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<tr>
<td>2. Emergence of competitive integrated structures</td>
</tr>
<tr>
<td>3. Presence of the prerequisites for the production of high-tech metal</td>
</tr>
<tr>
<td>4. Scientific potential of academic, industry and university science</td>
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<tr>
<td>5. Presence of non-ferrous and rare metals</td>
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### Threats

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<tr>
<td>1. Depending on conditions in world prices</td>
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<tr>
<td>2. Low domestic demand for steel products</td>
</tr>
<tr>
<td>3. Expansion of China in world metal markets</td>
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<td>4. High import volumes of metal, machinery and equipment</td>
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<td>5. Lack of state support of innovative development of metallurgy</td>
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Sverdlovsk Region
System of Education and Science

- 22 Institutes of the Russian Academy of Sciences
- 32 higher education institutions
- 92 industrial, research and design institutes

In April, 2010 the Ural Federal University is created
DEVELOPMENT STRATEGY OF MINING COMPLEX IN SVERDLOVSK REGION FOR THE PERIOD TILL 2020

Purpose: transformation of the metallurgical industry into the high-tech and competitive industry, integrated into the global steel industry

- Innovative development of the industry (the practice of open innovations, mechanisms of «innovative elevator»)
- Production of new high-tech products
- The formation of «new» sector of economy
Identifying strategic priorities for the development of metallurgy

Methodological framework - FORESIGHT

Blocks of questions:
1) General characteristics of technology
2) Expected socio-economic effect
3) Life cycle assessment of technologies based on their feasibility and availability of economic, scientific and political security
4) Prioritization of the measures of public and private support
Specific priorities

Nanotechnology development (program «Development of nanotechnology and innovations infrastructure in the Sverdlovsk region in 2011-2015»)

Environmentally friendly production of metals and alloys, including rare-earth ones, made of the unique multi-component mineral raw materials of the Urals
Goals of creating a special economic zone «Titanium Valley»

- Increasing Russia's share in world manufacturing of titanium alloys products from 27% to 32-35%
- Attracting foreign direct investment in the sum nearby 3 billion dollars
- Strengthening of the position in the market of final products made from titanium (aircraft fasteners, medical implants, etc.)
- Substitution of imports of spare parts for metallurgical industry
Open Joint-Stock Company «Russian magnesium»

Company capacity of the first stage of the plant, thousands tons per year

1. Magnesium metal – 22.3
2. Precipitated silica – 29.9
3. Iron-nickel concentrate – 11.8
4. Salt cake – 19.2
Cargo electric locomotive 2EC6

advantages of the new locomotive:

• Increase of the turnaround by 50%
• Lowering of the operating costs:
  - energy savings up to 10-15%;
  - decrease in labor repair up to 15%.

Vector of development and growth points of the regional economy
Participants of a pharmaceutical cluster in the Sverdlovsk Region

12 pharmaceutical companies in the region including:
- Pharmaceutical Plant «Medsintez», Novouralsk;
- Irbit Chemical and Pharmaceutical Plant, Irbit;
- Uralbiopharm, Yekaterinburg;
- Berezovskiy Pharmaceutical Plant, Berezovskiy;
- UralDial, Yekaterinburg;
- Ural Glassworks, Ufimskiy;
- Scientific and Production Company ChemSynthesis, Yekaterinburg;

Ural Federal University after First President of Russia Boris N. Yeltsin;
Ural Medical Academy

5 institutes of the Ural Branch of the Russian Academy of Sciences;
7 research institutes

Hospitals and clinics of the Sverdlovsk Region;
System of dialysis centers;
Ural medical nuclear center
Oil refining factory

Volume of total investment 2.4 billion dollars

Processing capacity:
- 3 million tons of oil per year
- 3 billion cubic meters of gas per year

The main products:
- motor fuel,
- ethylene, propylene

The annual turnover: 81 billion rubles
the "Washington Consensus"

(liberalization of foreign trade; deregulation of economy; free buying and selling of national resources, etc.)

the "Beijing Consensus"

(consistent institutional and structural policies of economy adjustment, preservation of state's leading role in determining the country's development strategy; dominance of the companies with state participation in the industry; active state participation in the global economy)
Theoretical Foundations of Industrial Policy of Russia

Synthesis of propositions of:

- the institutional economic theory;
- the theory of long-term techno-economic development;
- the economic synergetics.
Thank you for your attention!