



**Asia-Pacific
Economic Cooperation**

Sustainable Development of Mining Sector in APEC

Final Report

APEC Mining Task Force

SOM Steering Committee on Economic and Technical Cooperation

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I. PREAMBLE (TERMS AND DEFINITIONS)

Sustainable development – the combination of economic, social, ecological approaches on local, national, regional and global levels which provides preservation the world's natural wealth for future generations.

Also we are based here on UN motto “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

Mining – the sector of economy that includes the extraction of raw materials for ferrous and non-ferrous metallurgy (including metallic and nonmetallic resources, coal), the production of steel and non-ferrous base metals (Aluminum, Copper, Lead, Tin, Zinc, Nickel) and supporting processes as well like recycling and scrap collection. Mining doesn't include energy resources like oil and gas, or uranium. Also it doesn't include rare and precious metals.

ABARE – Australian Bureau of Agriculture and Resource Economics

CRC – Cold Rolled Coils

HRC – Hot Rolled Coils

IMF – International Monetary Fund

IORM – Iron Ore Raw Materials

PPP – Purchasing Power Parity

UNCSD – United Nations Commission on Sustainable Development

WTO – World Trade Organization

Data sources: The reference list is enclosed at the end of the report. Also main data sources are mentioned in data tables and pictures. General data sources are specified in footnotes for each part if necessary.

All the data in this report are cited by the project team from various sources for research but haven't been officially confirmed by authorities of the APEC Member Economies, so these data are all for references only.

1. SUSTAINABLE DEVELOPMENT ISSUES AT THE PRESENT STAGE. DEVELOPMENT OF MINING SECTOR - FOUNDATION OF SUSTAINABLE DEVELOPMENT OF APEC ECONOMIES

1.1 Introduction: History of New Development Strategy for Humankind

Term “Sustainable Development” first was applied in 1986 in a book named "Our Common Future" which was published in Copenhagen by UN Commission chaired by Mrs. Gro Harlem Brundtland who was at that time the Prime Minister of Norway. This Commission before publishing this report for over a year was visiting capitals of major world economies studying their economic, social and environmental situation. The results of this work were presented in the mentioned book which was published in six languages. The term “sustainable development” is applied for summing the conditions following which humankind can avoid crises which are impending in the end of the 20th century.

Sustainable development is a model of development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Study and assurance of sustained development were defined as one of priority tasks of UNESCO in the 90s, which were supported in 1990-1991, 1992-1993, 1994-1995 programs. General Conference of UNESCO in 1991 supported project named "Models, methods and software for analysis of global and regional sustainable development”.

In 1989 UN General Assembly adopted resolution 44/428 that called for a conference at the level of leaders of economies and governments to address strategy of sustainable, environmentally acceptable economic development of civilization.

The issue was further addressed at the Second Conference on Environment and Development in Rio de Janeiro in 1992. Representatives of over 180 economies participated at the conference; some delegations were headed by leaders of governments. The conference was held for seven days and dealt with discussion of conditions that are required to ensure that civilization created by humankind will overcome imminent crisis and continue balanced sustainable development. A range of fundamental documents was adopted, one of them is Agenda 21. Maurice Strong, the Conference Secretary-General, at the opening ceremony said that hopes and aspirations born in global community by decisions taken at Stockholm Conference in 1972 were still mostly unrealized as global disturbances in natural environment continue to grow. “Central issues of the problem that we will address is a character of production and consumption in the industrially developed part of the world, which undermines the systems that support life on the Earth”, he said. ...The system that considers unlimited growth as progress”.

The conference adopted declaration named Rio Declaration on Environment and Development. It declares 27 principles following which will allow to move towards goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among Economies, key sectors of societies and people, working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system and recognizing the integral and interdependent nature of the Earth, our home (UN document A/CONF.151/26/Rev.1 (Vol. I), pp. 3-7).

1.2 Natural Resources - Competition is Ahead

Since 2000 the vector of development of global mining industry has been gradually shifting towards Asia-Pacific region – APEC region. At the turn of the century a mining alliance is emerging with its center constituted by Japan and China as main producers of steel and consumers of raw and energy resources, Australia and Brazil as suppliers of raw materials and the USA being the main market for end products. In 2004 global steel production exceeds one billion tons for the first time in human history. In 2007 China produces over half a billion tons of steel.

Starting from 2H 2008 the world does not need so much steel. The USA and Middle East that are main consumers of Chinese steel reduced consumption considerably. Global Mining industry slides into recession immediately. Steel and raw material prices in some cases fell below profitability level. Who will drive market further? Concept of sustainable development gains new life today.

Can emerging economies increase their own consumption per capita adequately to the level of developed economies? Consumption will increase in 40 times by 2040-2030.

We should not hope that new technologies will be developed that will reduce consumption of natural resources in 40 times. A competition for resources is coming up and market forces will only heat it up.

Development and implementation of new paradigm of global, regional and national development at sustainable development of civilization were defined by the UN as the most important tasks at the end of the 20th and beginning of the 21st century. They are especially critical for APEC economies which have huge material and intellectual resources and have the strongest potential for transition to sustainable development despite current global crisis.

1.3 New Development Paradigm and Strategy of Transition of APEC Economies to Sustainable Development

New development paradigm and strategy of transition of APEC economies to sustainable development should form a common consolidated platform of public mind, if possible, invariant relative to political preferences, views of different parties and movements, affiliation or non-affiliation with power or social communities and containing objective purely scientific and moral arguments, principles and results.

The point of new development paradigm of APEC economies and entire global civilization is transition to the society of high ethical standards, life quality and sustainable development (humankind, nature and technosphere).

It is necessary to formulate principles, ethics, criteria of this radically transformed society (and state) aimed at implementation of new development paradigm in the 21st century which will require fundamental transformation of the life of humankind and its attitude to nature.

It is “creation of the sphere of mind of humankind as a result of fundamental change of traditional development” (Academician A. L. Yanshin).

The end of millennium was marked by the second industrial revolution in our history. Market economy, liberal ideology unleashed energy that sleeps in people (sometimes to the injury of public interests).

In the interpretation of Adam Smith market economy ideally organizes people. Individual freedom has maximum level. Market force transformed the world in two-three centuries.

Market organization of economy led to consumer society. If there is a demand to satisfy which people are ready to pay market economy immediately organizes production.

But consumer society leads both to environmental disaster (consumption of growing amount of natural resources) and to social catastrophe – stratification of the world into the rich

and poor, rich and poor economies. Global threats to development emerged about which U. Tan, UN General Secretary, spoke back in 1969:

"I do not want to seem as overdramatizing the situation but based on the information to which I have access as General Secretary, I can only conclude that UN-member economies have, probably, 10 years to reconcile long existing controversies between them and lay the foundation for global partnership aimed at limitation of arms race, explosive growth of population, improvement of human environment and supporting efforts that ensure development. If this global partnership is not implemented within the next ten years then I have strong concerns that it will be beyond our capacity to control the mentioned problems".

Studies conducted after that using mathematic modeling provided quantitative assessments of global crisis and growth limits in the 21st century and estimated time for preemption and prevention of adverse consequences. The identified threats are so serious that it was proposed to introduce serious birth rate limitation, limit industrial production per capita, reduce consumption of non-renewable resources and pollution per unit of output. Disastrous consequences were predicted by the middle of the 21st century in case these measures are delayed.

The UN forum of leaders of economies and governments in Rio de Janeiro in 1992 recommended shifting from former development strategy to sustainable development strategy. But in 1997 Special Session of the UN General Assembly acknowledged that no measures were adopted. The threats are growing.

Deep driving force of human nature is the aspiration to be content with life, pursuit of happiness. The next layer is the desire to occupy dignified place in human hierarchy and to feel needed. The third layer is the pursuit of wealth that is called market force. This is the force that is focused on gaining wealth, place in life by any means sometimes even at the expense of nature, economy, society, state.

Sustainable development can be achieved only under one of the following scenarios:

1) Consumer society will survive and will dominate while Earth's population will be dropping at significant rates. This scenario is not very realistic because consumer society with all its cruelty still cannot make antihumanism its dominant ideology.

2) New society will emerge in which purely materialistic element will develop until it reaches agreed limits while the main growth will be taking place in spiritual, intellectual and moral sphere. At the same time global population will stabilize or it even can grow within reasonable limits. Scenario should be developed by the best minds of humankind. There is no reason to expect the society of liberal individual freedom will come to this scenario on its own. High rectitude is the priority for the society of sustainable development. It is a society of sustainable development, life quality, ethics, positive development, it is not a society of maximum consumption. Life quality package is not bought, it is earned. This is a guarantee of competitiveness of new society, its survival and victory in historical evolution process.

Life quality society will maintain high quality of life at much lower expenses than consumer society.

Modern theories of state must be subjected to serious revision. Transition from consumer society to society of high moral standards, life quality and sustainable development is inevitable in the historical perspective. Economies play a key role here. Economic driving force should gradually transform into competitive pursuance of high life quality and sustainable development.

Main goals and functions of state in connection to that are as follows:

1) State acknowledges that group and public interests are equally important as individual interests of its citizens.

2) Criteria of survival, high moral standards, life quality and sustainable development are deemed as top priorities by state.

3) Adjustment of individual preferences is an important function of state and it undertakes to perform it in line with ethical rules of sustainable development society.

4) State is committed to principles of virtue, justice, responsibility and limitation of consumption of some vitally important goods.

5) State creates and improves a model of growth and entry into independent life for young men (upbringing, education, securing of life quality and employment).

6) State is a source of new driving force for economy and society: creation of competitive environment pursuing high life quality.

7) Development of standards and strenuous support of aspiration to high quality life is state's commitment.

8) Environmental and ethical imperatives, responsibility for survival and co-development of nature and society have maximum support of state.

Self-organization and sustainable development led by state ensure high life quality and moral standards which characterize perfect society.

We all travel together on our space ship Earth. Its noosphere should be self-organizing system. It can comprise self-adjusting system for controlling global processes in real time with a reference model that allows for prediction of global threats, assessment of global disaster risks and real-time management of nature, society and technosphere development and interaction processes (co-development).

Growing risk of global catastrophe requires global level development management, creation and implementation of sustainable development strategy with the UN and governments' support based on priority of ethical and spiritual principles (personality, society and state), responsibility for survival, high life quality and limitation of consumption.

The challenge requires development of extremely complex, sophisticated and deep upbringing, education and cultural programs focused on the high moral standards, life quality and sustainable development. UNESCO Medium-Term Strategy, Ethical Mission and intellectual role can provide a foundation for implementation of such ethics in the 21st century.

"UNESCO Medium-Term Strategy 1996-2001" formed general vision at planetary scale on main objectives and priorities of actions and highlighted many of existing global threats:

- Growth of poverty in almost all societies and concomitant processes of violence, emigration and exclusion.
- Continuing degradation of environment that creates vicious circle with immeasurable consequences.
- Shame and frustration as millions of people do not have access to education.
- Inability to satisfy demands and aspirations of youth.

It defined decisions which should be adopted both at the global level and at the level of each economy: Promoting education, ensuring that science serves development, strengthening of ethics of scientific knowledge and technology, revitalizing of heritage, ensuring that new information and communication technologies serve everyone. It is necessary to predict, preempt thinking about future generations. It is necessary to mobilize political will of governments and parliaments to increase GDP share of education spending, revision of budget priorities. It is necessary to prioritize elimination of poverty, especially, extreme poverty in the interests of the world and sustainable development for everyone. Emphasis on the important role of women and youth as fully-fledged participants of the process of implementation of peace bolstering and development strategies

UNESCO ETHICAL MISSION AND INTELLECTUAL ROLE One of the priorities of UNESCO is setting ethical guidelines and playing the role of ethical watchdog. UNESCO's capability to ensure proper revision and updating of approaches in fields which are essential for the future of societies:development of elements... declarations and programs of actions related to culture of piece, ... promoting education and upbringing in the spirit of human rights.

Universal Declaration of Human Rights was proclaimed 50 years ago "to the end that every individual and every organ of society ... shall strive by teaching and education to promote respect for these rights and freedoms".

UNESCO carries a rights protection mission from offences against rights of members of intellectual community: Teachers, scientists, creative artists and journalists. Violence on the screen is just one of many aspects of numerous ethical problems which emerge in connection to formation of information society. One of the new fields of endeavor opening up to UNESCO is the promotion, at the international level, of a wide-ranging reflection on the ethical, legal, educational and cultural impact of the new information and communication technologies, identifying the priorities for the action to be taken and determining the ethical principles". (F. Mayor. UNESCO Programme and Budget for 1998-1999. Foreword).

2. OVERVIEW OF STUDIES AND WORK COMPLETED WITHIN APEC WITH RESPECT TO SUSTAINABLE DEVELOPMENT IN MINING SECTOR OF REGION. ROLE OF MINING AND MINING SECTOR IN SUSTAINABLE DEVELOPMENT OF ECONOMIES OF REGION AND ECONOMIES OF APEC

APEC was established in 1989 in Canberra at the initiative of Prime Ministers of Australia and New Zealand. Main goal of the organization is facilitation of free and open trade and strengthening of regional cooperation.

In 1992 United Nations Commission on Sustainable Development (UNCSD) was established. The objectives of the commission include monitoring and analysis of implementation of decisions taken by World Forum at the local, regional and global level.

From the moment of adoption APEC Economic Vision Statement in 1993 at the meeting at Blake Island, Seattle, USA, that among other issues, stated that "our environment is improved as we protect the quality of our air, water and green spaces and manage our energy sources and renewable resources to ensure sustainable growth and provide a more secure future for our people", APEC's commitment to the idea of promotion of sustainable development in the region was confirmed many times. APEC leaders' statements were not limited only by environmental issues. Sustainable development concept was reflected in the intention of economies to reduce trade barriers, expand economic cooperation and diversification. Economical potential of the region, in the opinion of the leaders of economies, should facilitate growth of investment inflow, improvement of the level of education, growth of professional skills and mobility of labor resources.

It should be noted that before the start of financial crisis in the second half of 2008 APEC region accounted for 47% of world trade, 40% of labor resources and 60% of global GDP. Economies saw progressive growth trends in line with provisions formulated in 1993.

Later, sustainable development concept was supported at the meetings of APEC economic leaders and ministers in charge for sustainable development.

The following issues were addressed in details:

- Sustainable cities and urban management systems
- Environmentally friendly operations and technologies
- Sustainability of marine and water resources

At the meeting of ministers responsible for sustainable development of APEC economies at Philippines in July 1996 it was decided that sustainable development concept will play a prevailing role in APEC. Ministers responsible for sustainable development made a decision that APEC Secretariat was tasked to compile an annual overview of sustainable development work to ensure more active development and implementation of this concept in APEC economies.

Detailed discussions of the problem of sustainable development with respect to economic, social and environmental aspects were held at each following meeting of APEC economic leaders and were reflected in final communiqués. (http://www.apec.org/apec/leaders__declaration.html)

Environmentally sustainable development became a priority for SOM Steering Committee on Economic and Technical Cooperation (ECOTECH) since 1996 when three leading sustainable development programs were incorporated in ECOTECH.

Representatives of most of APEC economies took part in World Summit on Sustainable Development in Johannesburg that adopted Johannesburg Declaration on Sustainable Development which up to present time is one of the basic elements of this development concept.

The first meeting of APEC ministers responsible for mining took place in Chile in June 2004. The issues of mining sector of APEC economies were for the first time dealt at such level. The meeting addressed main issues of sustainable development in APEC mining sector. The focus was on facilitating cleaner and more efficient mining, its development outlooks, employment of population and implementation of advanced technologies. Serious attention was also paid to the issues of liberalization of global trade and investments in mining sector of APEC economies. Expansion of cultural interaction of miners with local population for explaining the concept of modern enterprise, impact of businesses on cultural, social sphere and environment was regarded by ministers as very important issue. At the meeting it was again stressed that mutual understanding can be achieved only through an open dialogue and awareness. Ministers agreed that "that the sustainable development of the mining and metals industry in the APEC Region enhances wealth creation, environmental outcomes and socially responsible development and result in enhanced value for society". Among the first actions was the need "to support and promote initiatives that contribute to meet sustainable development in the mining and metals industry".

One of the projects within the framework of sustainable development concept was a study that was initiated by Chile in 2005. Workshop based on the results of this study "Voluntary Initiatives for Sustainable Production, Trade and Consumption". Presentation of the project was held on September 26-27, 2005, in Santiago.

The study focused on the analysis of real contribution of voluntary commitments and initiatives in the area of sustainable development. Mining is one of the areas of the study. The examples of commitments included environmental certification, ISO 14001 certification, corporate social responsibility covenants.

The meeting of ministers in Chile in 2004 and the following meeting in Korea in October 2005 that addressed objectives in the area of encouragement of "information exchange and cooperation on environment-friendly mining technology, such as energy efficient technology, and mining pollution control technology as well as after-mining land management" prepared ground for the meeting of APEC economic leaders that dealt specifically with sustainable development issues. Leaders' meeting took place in Santiago (Chile) in July 2006. Conclusions and recommendations of the meeting included:

- To encourage APEC Working Groups to coordinate their work on sustainable development through the exchange of information and ongoing cooperation between and among APEC economies.
- To improve the exchange of information between APEC and other international organizations, such as UNCSD, WTO, OECD, and the World Bank.
- To consider civil society participation and dialogue in future work on sustainable development.

The third meeting of APEC ministers responsible for mining was held in Perth (Australia). During preparation and development of comprehensive program Australian Bureau of Agricultural and Resource Economies (ABARE) provided a research focusing on sustainable development of APEC minerals sector.

The sustainable development of mineral resources is a fundamental platform for continued economic growth in the APEC region. The region has vast mineral resources, available high skilled personnel and cutting edge technologies. Region encompasses global leaders in mining and production of minerals and the most dynamic economies, world leaders in production and consumption of mining sector products.

According to experts, on the one hand, these factors guarantee successful implementation of the concept of sustainable development, on the other hand, there is a serious risk related to the

fact the today economic growth of the sector provides no guarantee for the future. The future strongly depends on the condition of the global economy, level of the social development of society, efficient environment management.

According to ABARE experts, the key issues of sustainable development in minerals sector include:

- Liberalization of trade and investments, that requires
 - removal of nontariff trade barriers,
 - development of an integrated approach to respond to, and avoid, trade restrictive measures based on environmental, social and other nontrade objectives,
- Business facilitation and support.
 - Clear legislation
 - Minimization of involvement of state.
 - Creation of stable investment climate for investors.
- In the presence of limited government resources, exploring opportunities for partnerships with private capital, etc.
- Close cooperation in the field of economy and advanced technologies.
 - Clear and environmental legislation.
 - Application of leading practices in the field on advanced technologies.
 - Promotion of long term investments in the development of cutting edge technologies.

At the meeting in Perth Ministers decided to set up the Mining Task Force (MTF, introduced by establishment of Mining Special Commission) which only underlined the great role played by mining industry in the economic growth of the region.

At the meeting Ministers agreed to the 10 APEC Mining Policy Principles:

Recognising the importance of mining and metals to the growing integration of APEC economies, Ministers agreed to the 10 APEC Mining Policy Principles. Our agreement to the APEC Mining Policy Principles recognises that application of these principles will be dependent on the specific circumstances of each Member Economy

Pursue policies that enhance the sustainable production, trade and consumption of minerals and metals thereby improving the economic and social wellbeing of our people.

Foster regular exchange between member economies about experiences with regulations, policies and practices and about significant developments in each economy's minerals and metals sector.

Promote the best possible functioning of global markets for minerals and metals, through support for market transparency and facilitation of trade. Export restrictions should be employed only in exceptional cases, and in accordance with WTO rules.

Foster investment certainty in the APEC minerals sector through the pursuit of open minerals and metals markets and the articulation of clear and predictable investment policies.

Promote cost effective, evidence based, transparent and objective-based measures which improve the efficiency in the regulation of the minerals industry to contribute to economic, environment and social development outcomes.

Encourage, support and promote initiatives by the minerals and metals industry and stakeholders that contribute to national and international sustainable development goals.

Encourage research to develop and apply new minerals exploration, extraction, and pollution control technologies that are more cost effective, efficient, economically sound, environmentally responsible and socially acceptable. Promote information exchange and cooperation on such technologies.

In partnership with all life cycle participants, ensure that materials and products made from minerals and metals are produced, consumed, recycled or disposed of in a responsible manner.

Encourage all participants in the life cycle of a material or product to take direct responsibility for their area of action, and a shared concern over other stages of the life cycle.

Support capacity building activities for sustainable development so that all APEC Economies are able to maximise the benefits and minimise the impacts from minerals resource development.

We agreed to study the impediments to greater trade and barriers to investment in the minerals and mining industry. This study should:

- explore practical actions to deliver free trade and investment for minerals and metals in the APEC region;
- link to other APEC fora, as appropriate, for input to the overarching analysis to be conducted by APEC Senior Officials (SOM) for regional economic integration; and
- include the Mining Industry Forum recommendations.

In the study “Mineral Exploration in APEC economies“, ABARE research report, December 2007) experts evaluate ability of the region to attract investments in mining sector and processing of mineral resources. It is noted that APEC region which encompasses eight economies ranking in the list of top 10 players in the market of mineral resource mining, processing, production and trading is quite attractive taking into consideration future growth outlooks in this sector. The research was conducted as APEC minerals sector investing guideline.

The authors believe that sustainable development concept is critically important even at the stage of planning field development or production. This is the stage at which it is important to implement all principles of this concept for reaching understanding with social groups in local communities. Many companies have growing understanding that mining projects have the most significant economic, social and environment impact on society. The earlier the society is involved in the project and the earlier the implementation of principles of sustainable development the bigger are commercial benefits that will be finally gained.

Experts focused on the following issues:

- Identification of key positive and adverse factors of investing in exploration and development of mineral deposits.
- Overview of mineral resources of APEC economies.
- Analysis of mining laws.
- Identification of some issues of sustainable development concept that significantly increased their influence on investment projects.
- Overview of examples of the most successful projects and recommendations on reliable and controllable investments in APEC mining sector.

In 2000 - 2006 Global Reporting Initiative (GRI, Global Reporting Initiative PO Box 10039, 1001 EA Amsterdam, The Netherlands) developed sustainability reporting guidelines for companies. These guidelines set out sequence of actions and propose a range of quantitative and qualitative parameters which allow providing balanced and supported company performance report for defined period of time.

However, we believe that filling in such report will require serious concentration of company's efforts and resources. But in the present economic situation when companies have to focus on the current economic problems it is necessary to simplify company (economy, region) sustainability appraisal.

The 16th APEC economic leaders' meeting took place in November 2008. The main item on the agenda was economic situation in the world, impact of global economic downturn on the region and its members.

Global economic crisis had a quite significant impact on mining sector. As it was mentioned above, significant part of APEC economies is deeply involved in mining and processing of minerals. Declining consumption led to reduction of ore production, scaling down of investments, production decline, temporary shutdown of excessive production capacities, freezing of construction and designing of new facilities. Therefore, presently, most of the companies think more about survival rather than about development. The focus of sustainable development concept can shift towards economic components. Social component resolves itself to retaining skilled personnel, while environmental projects are frozen, at least, in the short-term.

List of reports and publications covering the issues of sustainable development in APEC economies:

Report (review) name	Authors, publication details and contact details
Australia	
<i>Sustainable Development of the Minerals Sector in the APEC Region,</i>	Australian Bureau of Agriculture and Resource Economics (ABARE) www.abare.gov.au
<i>Australian Energy: Market Developments and Projections to 2014-15, 1999</i>	ABARE, www.abare.gov.au
<i>Productivity in the Mining Industry, 2008</i>	Productivity Commission www.pc.gov.au/ data/assets/
<i>Australia Coal Exports: Outlook to 2025 and the role of Infrastructure, ABARE Research Report 06.15, Canberra, October.</i>	Fairhead, L., Curtotti, R., Rumley, C. and Melanie, J. 2006, ABARE, www.abare.gov.au
<i>The Sustainability of Mining in Australia: Key Production Trends and Their Environmental Implications for the Future, Research Report No. RR5</i>	Mudd, G.M. 2007, Department of Civil Engineering, Monash University and Mineral Policy Institute www.monash.edu.au
<i>Regional synergies for sustainable resource processing: a status report.</i>	Bosillkov, A. Centre for Sustainable Resource Processing, Perth, Australia. 2005.
<i>Enduring Value- The Australian Mining Industry's Framework for Sustainable Development.</i>	Minerals Council of Australia, 2004. www.minerals.org.au
<i>Sustainability as a framework for innovation in minerals processing.</i>	van Berkel, A et al. The AusIMM Bulletin: The Journal of the Australian Institute of Mining and Metallurgy, Cairns, Australia. 2002. www.ausimm.com.au/
<i>Emerging Models of community engagement in the Australian</i>	Harvey, B and Brereton, D, 2005, International Conference on Engaging Communities, Brisbane , Australia.

minerals industry

Canada	
<i>See reports under Q1. The International Institute for Sustainable Development, which was created by the Government of Canada does a range of work related to sustainable development in Canada and abroad</i>	International Institute for Sustainable Development
Korea	
<i>Fundamental (5 years) and execution (1 year) plans for reclamation of mine hazards</i>	Ministry of Knowledge and Economy
Japan	
<i>Mine Closure and Sustainable Development</i>	Mining Department, the World Bank Group Metal Mining Agency of Japan, former JOGMEC Mining Journal Books Ltd, 2000
<i>Review of Legal and Fiscal Frameworks for Exploration and Mining</i>	Koh Naito, Felix Remy and John P. Williams Mining Journal Books Ltd, 2001
<i>World Trend and Major Activity for Sustainable Development in Mining Industry</i>	JOGMEC E-Square Inc. http://www.jogmec.go.jp/mric_web/environment/report/SDindex.html (in Japanese) June 2005
<i>Trend Survey of Stakeholder for Sustainable Development in Mining Industry</i>	JOGMEC E-Square Inc. http://www.jogmec.go.jp/mric_web/environment/report/2006_src.html (in Japanese) June 2006
<i>CSR and EHS regulation in Mining Industry</i>	JOGMEC E-Square Inc http://www.jogmec.go.jp/mric_web/report/restriction/restriction.html (in Japanese), June 2007
<i>One-Stop Framework for Securing Mineral Resources from Abroad to Japan</i>	METI, JOGMEC, JBIC, NEXI, JICA http://www.enecho.meti.go.jp/policy/mineral/mineral00.htm (in Japanese) October 2008
Malaysia	
<i>Sustainability Evaluation of Limestone Resource Consumption in the State of Perak</i>	Ir Selamat Aliman sba2@streamyx.com.my Tel:+6019-5572465 Fax:+605-3136037
<i>Addressing Gaps in Ecosystem Health Assessment: The Case of Mineral Resources Study for the Development of the highlands in Peninsula Malaysia</i>	Pereira, J.J & Ibrahim Komo Institute of Environment & Development (LESTARI), Universiti Kebangsaan Malaysia (UKM) Economic Planning Unit, Prime Minister's Department Tel:+603-88883333

Fax:+603-88883755

Chile

*Economy Memorandum for the
OECD Environmental
Performance Review
Economy Report: State of the
Environment*

Organisation for Economic Co-Operation and
Development (OECD)
www.oecd.org
University of Chile's Institute of Public Affairs
<http://www.inap.uchile.cl/politicaspUBLICAS/informepais2006.pdf> nligo@uchile.cl

Chinese Taipei

Mine Tourism

Department of Mines

People's Republic of China

*International Theory and
Practice on the Study of
Sustainable Development of
Land and Resources
Annual Research Report on
Sustainable Development of
Land and Resources in China
(2004, 2005, 2006-2007)*

Information Center of Ministry of Land and Resources of
China

Information Center of Ministry of Land and Resources of
China

Thailand

Sustainability Report

The Siam Cement Group PTT Group
http://www.siamcement.com/en/05sustainability_development/03_sustainability_report.html
http://www.pttplc.com/en/ap_qs_en.aspx?

*Sustainable Development
Indicator: Thailand
(Document type: Presentation
Slide)*

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*Performance guarantee schemes
in the minerals industry for
sustainable development: The
case of Thailand
(Document type: Article)*

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1994

3 ANALYSIS OF MAIN TRENDS AND FACTORS FACILITATING/HINDERING SUSTAINABLE DEVELOPMENT IN APEC MINING SECTOR AT THE PRESENT STAGE

3.1 Factors and Trends in APEC Mining Sector as Applied to Sustainable Development Concept

Viewing the concept of sustainable development in mining sector of APEC economies in line with the definition given by the United Nations Commission on Sustainable Development (UNCSD) that described it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" the following assumptions need to be considered:

1. Mining is a backbone sector almost in all economies of the region. Contribution of this sector to the GDP of Chinese, US, Canadian, Australian, Japanese and Russian economies is very significant. Sustainable development of mining industry in developed economies provides support for emerging economies of the region through the transfer of new technologies, regulation of environmental requirements, introduction of higher standards and corporate culture, improvement of working conditions and growth of life standards, reduction of occupational diseases, etc.
2. In contrast with food industry or services or health sector, contribution of mining sector to development of a particular economy manifests itself at the global level while individuals or groups of people do not necessarily see it. Population represented by individuals is not a direct consumer of mining sector products; therefore, it is not able to evaluate contribution of the industry to its life. Additionally, any changes in mining sector are rather slow therefore they very slowly produce impact on social environment, health and environmental situation while the changes in these spheres are the most visible from the point of view of an individual.
3. Degree of globalization in mining sector is extremely high. Quite often goals, objectives, economic parameters, development strategy and its transformation for a specific company or corporation do not correspond to expectations of the government or population of a given economy or entire region. Amid economic growth global corporations are ready to reckon with the opinion of local economies, but in the current situation internal problems become top priority for companies. The objectives of sustainable development of the region are set aside. This is one of the most significant issues of sustainable development of mining sector, particularly, for APEC economies.
4. Availability of mineral resources for mining sector is a fundamental problem for ensure sustainable development. Main resources consumed (mined) by the industry are non-renewable resources for future generations. Up to present time any serious speculations about reduction of the role of mined resources in the life of humankind are out of the question. Metal ore, coal, oil and gas, steel for now do not have any serious real alternatives.
5. The magnitude of almost all mining operations and sector output do have and will have serious impact on environmental and social sphere. We should clearly understand that

irrespective of the need to preserve biosphere of our planet it is impossible to eliminate harmful emissions of mining enterprises. The amount of jobs in the sector is also significant for each economy of the region and for entire world.

From all that was said above it follows that the problem of sustainable development of APEC mining sector should not be considered as some constant with a definite value. It is a complex multiple-factor process and approaches to its implementation must change under the impact of specific present conditions. For example, it is senseless to speak about increasing the number of jobs in the sector today while social support programs are quite relevant.

Sustainable development is really about making the best decisions. It is often a compromise between competing views and philosophies. As all human activities have an impact on the environment, decisions try to mitigate those impacts.

One of the challenges is that the concept of sustainable development is continuously evolving. A second it that society is also evolving, making it difficult to evaluate the needs of future generations, a key component of sustainable development. A third is ever-changing technology, bring both benefits (e.g., anti-pollution equipment) and new challenges (e.g, nanotechnology). As a result, the identification of indicators for SD, particularly in the mining sector, is so difficult.

Our project “Sustainable Development of Mining Sector in APEC” included analysis of experts’ opinions from APEC economies with respect to main trends and factors which in their view have significant impact on the processes of sustainable development in mining sector. Both facilitating and hindering factors were taken into consideration.

Unfortunately, experts from some economies did not send us their opinions about these factors.

Experts’ opinions were structured based on main spheres that determine sustainable development of mining sector.

In the first place, economic factors and trends were analyzed. We believe that at the present stage economic development trends play a determining role for the region, for particular economy and for every individual. Presently, every individual in the world can be characterized by the degree of impact of world economic crisis on this individual. It turned out that mining sector in APEC economies and in entire world is highly subject to the influence of crisis, because it is not a closed producer-end-customer system. This is the reason why we determined that the total of economic factors and trends forms the following chain: Economy – social sphere – environment – politics.

Namely, contribution of Chile mining sector to the economy's GDP, according to expert’s estimates, even under current conditions is around 8% and under better conditions it can reach 20% of GDP. The share of mining sector output in the export in some cases reaches 60%, while average level is 30-40%.

3.1.1 Main Trends and Factors Facilitating and Hindering Sustainable Development of Mining Sector

Based on the results of the study the points of view on sustainable development of mining sector in APEC economies for developed and emerging economies were different.

a) Emerging economies

Emerging economies mostly export natural resources that make significant contribution to economy and development. As a consequence, emerging economies believe that leading factors facilitating sustainable development include:

- **Growth natural resource prices.**
- **High prices on energy resources.**

- **Reduction of operating expenditures.**
- **Optimization of new deposit exploration and development processes.**
- **Development of new energy resources.**

Growth of prices will not only generate additional cash flow for economies it also should bring new large-scale investments in mining sector, while better regulation of development of new deposits will allow economies to attract companies that will be able to develop new resources with higher efficiency and investment performance. Moreover, amid price growth the role of competition between separate companies increases which also facilitates stabilization and economic growth.

Alongside with that high prices can contain consumer demand which leads to overproduction which will have an adverse implications for stability of mining sector in emerging economies due to contraction of exports and reduction of financial flow.

Development and implementation of new technologies can be defined as another factor that facilitates sustainable development in mining sector. This is a cross-cutting issue at the intersection of economic and technological aspects. Implementation of innovations will improve efficiency and will lead to lower operational expenditures.

Containing hindering factors for emerging economies mainly include the following:

- **Different limitations of access to water, energy and financial resources.**
- **Low quality of mineral resources.**
- **High operational expenditures.**
- **Skilled management (corporate management and personnel)**
- **Growth of prices pushing business to edge of survival.**
- **Insufficient cooperation with developed economies.**

b) Developed economies

From the point of view of experts from developed APEC economies high of competitive prices on raw materials and metals is also main factor that facilitates sustainable development. The also identify the following facilitating factors:

- **High share of resources will low production and processing costs**
- **Simplification of access to markets for foreign investors.**
- **Availability of highly skilled personnel.**
- **Clear understanding and application of same principles by state and private sector.**
- **Efficient taxation policy and environmental legislation**
- **Reduction of operating expenditures.**
- **Implementation of cutting edge technologies.**
- **Recycling at all production stages.**

Representatives of developed economies also believe that minerals and metal prices decline is the leading suppressing factor for sustainable development of APEC economies. It is possible to speak not about reduction of prices but about their competitiveness. Lowering of prices amid crisis does not lead to growth of purchasing power and their reduction below break-even level results in serious losses.

The following factors hinder sustainable development of APEC mining sector:

- **Contraction of exports amid crisis.**
- **Reduction of cash flow.**
- **Tightening access to cheap finance and investments.**
- **Reduction of personnel and its dilution.**
- **Depletion of deposits and ore.**

- **Declining consumption at all levels.**

3.1.2 Main Trends and Factors Facilitating and Hindering Sustainable Development of Mining Sector in the Area of Social Responsibility

Mining sector companies have similar social structure in almost all economies due to sector-specific production conditions. It is characterized by remoteness from major cultural centers, isolation of community and prevailing male population. The factors that facilitate and hinder sustainable development of mining sector in social sector, primarily, take into account qualitative structure of society. It should be mentioned that although social sphere is a determining component of sustainable development, as the notion of sustainable development cannot exist without its object, but it directly depends on economic stability. For this reason economic factors play an important role for social sphere, too.

The following factors support and facilitate sustainable development of mining sector in APEC:

- **Encouragement of development of social and cultural infrastructure at the remote mining facilities.**
- **Encouragement of economic development of mining facilities.**
- **Potential for creation of new jobs.**
- **Establishment of integrated relations between community and shareholders of companies.**
- **Financial and social compensation for employees working at remote production and processing centers.**
- **Open discussion between owners and employees of any potential and required changes.**
- **Introduction of high culture of relations with community by international leading mining companies.**
- **Growth of social engagement.**
- **Strict legal regulation of social responsibility.**

Social factors which hinder sustainable development of mining sector:

- **Significant time lag between development of production and creation and development of social infrastructure.**
- **Isolation of society, self-contained community.**
- **Mental and social troubles: depressions, drug and alcohol addiction, etc.**
- **Environmental situation: pollution of air and water, noise, dust, work-related injuries.**
- **Absence or shortage of information, lack of information exchange between owners and employees.**

Social sphere is the most vulnerable component in the process of sustainable development. Number of factors that determine development of this sphere is comparable with the population involved in mining sector. On the other hand, sustainable development is needed namely for this society and its following generations

3.1.3 Main trends and factors facilitating and hindering sustainable development of mining sector in the environmental area

The field of environment is one of the most easily regulated and measured fields. For sustainable development it is enough to exercise reasonable regulation of consumption of natural resources and their circulation. However, if we also include the reserves of the natural resources which are exhaustible in the field of environment the determination of factors which impact the

sustainable development shall be more complex. It should be also taken into account that the economic situation shall have direct and indirect influence on the environmental field.

Experts have pointed out the following major factors which promote the sustainable development in the environmental field:

- **positive economic trends determine positive environmental trends**
- **support of concept of “reasonable management” of production company within the complete cycle of processing from raw material to the end product and recycling**
- **creation of conditions for recycling, formation of society which is mentally aimed at recycling**
- **clear and strict legislative control in environmental field which is based on R&D, calls for the use of cutting edge technologies and limits emissions**
- **introduction of up-to-date environmental standards by leading companies, exchange of experience**
- **creation of positive image**
- **development of mining and processing technologies**

At the same time strict economic requirements can significantly influence the economic indicators of mining sector. If as a result of violation and non-compliance with the environmental requirements the production facilities should be closed, it will hardly meet the concept of sustained development. The synergetic effect of combined influence of various factors should be always taken into account.

The following factors prevent the sustainable development of mining sector in APEC economies within the environmental field:

- **conflict of interest in natural resources (water, land, etc.) use among industry, agriculture, government, general public, environmentalists**
- **environmental actions related to global warming**
- **tightening of environmental legislation, unreasonable environmental legislation, legislation which is based on damage calculation and preventive measures**
- **environmental management expenses increase**
- **operating expenses increase**

Preservation of natural resources is undoubtedly the priority for humankind. However, it is necessary to search for reasonable compromise. Putting brakes on the economy by unreasonable environmental initiatives can significantly thwart the process of sustainable development of the humankind.

3.1.4 Main trends and factors facilitating and hindering sustainable development of mining sector in the political sphere

Unfortunately the majority of political decisions are taken by the governments of various economies basing on the principle of support of specific lobby groups. The sustainable development of society in each and every field is always the compromise of interests.

The factors which promote the sustainable development in the political field:

- **stable political situation which guarantee the economic sovereignty**
- **general concept that mining sector is the basis of economic development**
- **political stability which offers an opportunity of long-term investments**
- **open dialog between the government and entrepreneurs**
- **license policy which guarantees long-term and stable operation of an enterprise**

- **policy aimed at attraction of foreign investors**
- **policy of development of potential personnel education and advanced training**
- **policy of reasonable industry development**

We think that the governmental support of educational system is of paramount importance to facilitate the necessary level of qualification and specialization level of local population in order to satisfy the requirements of the employer. It shall permit to limit exported labor and to provide jobs for the local folk.

The factors which prevent the sustainable development of mining sector in APEC economies within the political field:

- **inconsistence between governmental and municipal (regional) legislative acts**
- **export limits and governmental control of resources**
- **confusing politics in the field of natural resources management**
- **political instability**
- **incomplete information for decision making**
- **treatment of mining sector as polluting and non-technological industry, underrating of mining sector contribution into development of remote social medium communities**
- **support of negative attitude**

3.2 Quantitative Indicators of Sustainable Development of Mining Sector of APEC Economies. Basic Indicators

In order to assess any process it is necessary to distinguish the indicators which when measured or quantitatively evaluated make possible the assessment with a certain degree of accuracy. The sustainable development is a multifactor process and even for its qualitative evaluation it is necessary to carry out the monitoring of a set of parameters within economic, social, environmental and other fields which are either directly or indirectly related to sustainable development concept. Some of the said parameters can not be directly associated with the influence of mining sector as they reflect the condition of sustainable development process in APEC in general and in each individual economy. The exert opinion is limited to selection of basic measured characteristics which reflect the status of economy, ecology as well as social and political problems. Besides, the said measured parameters should have the significant monitoring history so that it will be possible to compare the values of the parameters historically. It is important to have the possibility to show measured value related to series of events within specific economy and related to the region in general. At the same time we would like to point out that it is impossible to assess the sustainable development from the point of view of monitoring of only one or several parameters. It is necessary to assess the complex of measured values – indicators. And it is necessary to understand that notwithstanding the quantitative measurements the conclusions in the process of sustainable development of separate economy and the APEC region in general should be done solely on qualitative level. The measured indicators are used only for evaluation of degree of conformity.

3.2.1 Basic indicators in the field of economy

According to the opinion of the majority of experts and analysts GDP as well as per capita GDP is the basic measure parameter for economic element of sustainable development concept of APEC economies. This parameter makes it possible to assess the contribution of mining sector in the development of each individual economy and the region as a whole.

The level of investments in mining sector made by internal as well as foreign investors is also considered as significant indicator. Investment attractiveness is the very important indicator of sustainable development.

Several more measured parameters can, in our opinion, reflect various trends, including differently directed ones, in sustainable development of APEC region economies. The said parameters should be applied to separate economies within specific historic moment.

In Table 3.2 below the opinion of experts is shown which represent the diversity of measured parameters characterizing the process of sustainable development of APEC economies.

3.2.2 Basic indicators in the social field

In the social field the basic indicators of sustainable development of mining sector are more universal as applied to developed and emerging economies. Of course the correlation as well as normalizing should be done for major characteristic exponents of specific economy. The most indicative are: unemployment level in economy and in industry, level and trend of occupational diseases, industry personnel turnover, amount of industry personnel living below poverty line, occupational injuries.

It is very difficult to assess quantitatively the degree of social medium acceptance or discontent with the current situation in industry or at specific workplace, therefore this characteristic should be treated as qualitative.

Also the assessment of child mortality indicators is of some interest. Along with other indicators related to illnesses it can be assessed locally within specific social groups. This indicator can show with a high degree of accuracy the living standard of unskilled labor personnel especially in emerging APEC economies. The indicator includes the social processes which take place in closed social media. The majority of mining sector enterprises in APEC economies represent the above mentioned groups.

As it was pointed out above in the social field the set of indicators for developed and emerging APEC economies will be differentiated mainly by absolute values of indicators and also by spread of values and their deviation from average value.

3.2.3 Basic indicators in the environmental field

The globality principle is an important factor of ecological aspect of sustainable development of mining sector of APEC economies. If economic, political, technological and social aspects of each economy do not have direct impact on other economies of the region or in global scale (although indirect impact is undoubtedly exercised) the ecological factors are felt globally. It is impossible to block off a certain closed territory from air movement, ground or surface water movement or animal migrations.

Besides the ecological aspects are less visible and fast-acting comparing to economic and social aspects and as a result the majority of experts and general public pay great attention to ecological aspects as the results of right or wrong decisions taken can not be assessed immediately. Being aware of great importance of ecological component of concept of sustainable development and preservation of natural resources to support the life of future generations we nevertheless suggest carrying out comprehensive evaluation of sustainability of economies development in terms of integrated effect of the said factors.

Speaking of measured indicators of sustainable development of mining sector of APEC economies in the environmental field we can point out first and foremost to the level of awareness in ecological aspect, i.e. the amount of credible ecological information provided by the participants in economic activities. It can be represented, for example, by the number of companies and corporations which provide environmental reports prepared in accordance with the certain format. Or the number of companies which have (lost or confirmed) the relevant ISO certificate.

Also the following measured quantitative indicators are of great importance: indicators of exhaust emissions (CO₂ etc.), indicators of air suspended materials concentration, water

circulation, land reclamation area, number of closed depleted mines, fields where reclamation work is underway.

It is interesting to assess the ecological component of sustainable development and to use it as indicative indicator in accordance with the level of development of technologies used in the field of environmental protection: exhaust manifold reactors, water treatment equipment, reclamation technologies used. But in spite of qualitative nature, as it seems, of this indicator, it can produce the clear snapshot of sustainable development status especially in terms of specific enterprise or company.

3.2.4 Basic indicators in the political sphere

Each and every constructive process depends on political stability in specific locality, economy, region or globally. Any instability leads to destruction and the result of destruction inflicted even during short exposure can be rehabilitated within very prolonged period of time, within the life cycle of several generations.

Political stability means clear rules established in the field of production, trade, tax policy, economic investments, social support, environment.

Political instability leads to flight of investments, financial losses, increase of unemployment level, social conflicts.

It is very hard to define political component of sustainable development through any measured value. The following indicators used by the experts – balanced taxation, investment policy, licensing legislation – are qualitative indicators. In our opinion it is advisable to pay attention to correlation between the number of governmental decisions of permissive nature (or the balance between permissive and restrictive decisions) and the level of economic indicators. In case the correlation is of univocal nature we can speak of quantitative indicator of sustainable development in terms of political factors.

Table 3.2 Basic indicators of sustainable development of mining sector of APEC economies (expert opinion)

	Base Indicators of Sustainable Development	Comments
Australia	<ul style="list-style-type: none"> • financial profitability, • technical appropriateness, • environmental soundness and • social responsibility. 	<p>Measurable outcomes for these base indicators include:</p> <p>Economy: Gross Domestic Product, Trade balance – Exports/Imports, Stable exploration figures (or stable growth pattern), employment figures, development projects, stable tax environment and investment figures</p> <p>Health & Social: Reduction in industry accidents and industry related illness, Reduced workforce turnover</p> <p>Environmental: Quality of environmental reporting, Number of Companies Reporting Under GRI, Spills and discharges reported reduced and reporting levels raised, Water balance – continued improvement in monitoring and reporting and industry response, Consistent growth in mine rehabilitation figures, Number of abandoned mines</p> <p>Political: Political support through tax and investment policy, legislation and regulation, Transparency in legislation and regulation, Political stability, Sovereign risk.</p> <p>Community: Levels of community acceptance of mining</p>

Chile	Economy:	Levels of gross domestic product (GDP) per capita. Investment share in gross domestic product (GDP). Inflation rate. Employment to population ratio. Intensity of energy use, total and by activity.
	Health & Social:	Proportion of population living below national poverty line. Ratio of share in national income of highest to lowest quintile. Proportion of population using an improved drinking water source. Proportion of population using an improved sanitation facility. Under-five mortality rate.
	Environmental:	Total and sectoral carbon dioxide (CO ₂) emissions. Total greenhouse gases (GHGs) emissions. Proportion of total water resources used.
	Political	
Peru	Economy:	Poverty, National level-GDP contribution; Local level-GSP contribution; Investment, tax, income, worker ratio. Informality.
	Health & Social:	Employment, illiteracy, vocational illness, accident ratio.
	Environmental:	Pollution Limits; Waste reduction rate; Informality.
	Political:	Public hearing
Taipei	Economy:	National level-GDP contribution; Local level-GSP contribution; Investment, tax, income, worker ratio
	Health & Social:	Employment, illiteracy, vocational illness, accident ratio
	Environmental:	Legacy, un-reclamation, waste reduction rate; ISO certificate, EIA
	Political:	Public hearing
Thailand	Economy:	Contribution of mining industry to economic development, for example, ratio of GDP, ratio of mineral produced/imported, and added value to minerals
	Health & Social:	Health: Rate of accidents or work diseases or diseases affected from mining activities Social: -Proportion of revenue/development from mining activities to entire revenue/development (different weights for different areas) -Rate of appeal/complain regarding mining activities -Social cost/amount or value of mineral produced

	Environmental:	cost/amount or value of mineral produced
	Political:	Education development and good resource policies
Canada	Economy:	Profitable industry, increased use of minerals and metals (and products), increased reuse and recycling
	Health & Social:	Metals (and inorganic chemicals more broadly) contribute to socio-economic development, and health risks are managed
	Environmental:	Reduced footprint for mines - less water and air emissions, impacts on fauna and flora mitigated, mine sites rehabilitated and used for other ends.
	Political:	Mining, and minerals and metals are recognized as key components of development, providing benefits to as many as possible.
Malaysia	Economy:	Operating cost, efficiency, appropriate use
	Health & Social:	Complaints, employment, operational safety & health
	Environmental	Emission, environmental management, complaints, governance
	Political	Governance, policy
Korea	Economy:	Support of budget for mine reclamation projects by government
	Health & Social:	Regulation and system related to mine reclamation
	Environmental:	Technology development related to mine reclamation
	Political:	Political supports on governmental policy related to mine reclamation
China	Economy:	GDP Per Capita Trade structure (Import/Export Volume) Investment structure (in different stages such as exploration and development) Revenue distribution structure
	Health & Social:	Health: Reduction rate of accident ratio Social: Employment rate The number of towns depending on mining economy
	Environmental:	Environmental protection policies Area of mining places Reclamation rate Investment in abandoned mines
	Political:	Stable mining policies Comprehensive measures to implement the policies

Thailand	Economy:	Contribution of mining industry to economic development, for example, ratio of GDP, ratio of mineral produced/imported, and added value to minerals
	Health & Social:	Health: -Rate of accidents or work diseases or diseases affected from mining activities Social: -Proportion of revenue/development from mining activities to entire revenue/development (different weights for different areas) -Rate of appeal/complain regarding mining activities -Social cost/amount or value of mineral produced
	Environmental:	Environmental cost/amount or value of mineral produced
	Political:	Education development and good resource policies

4. EFFECTIVE PROGRAMS OF MINING SECTOR SUSTAINABLE DEVELOPMENT IN APEC ECONOMIES ON GOVERNMENTAL OR CORPORATIVE LEVEL

As the sustainable development is the specific concept of building of relations within the social medium, there are no (and can not be) any regulatory documents in this respect. At the same time at federal (municipal) level there are regulations and laws related to economy, environment, social relations, technology which can be compared with the concept basic principles.

However there are a number of governmental programs aimed at supporting the sustainable development initiatives. The programs in question can be directly related to mining sector problems or reflect them indirectly through environmental, social, cultural, technological, economic issues.

The APEC economies are very diverse. Some of them already follow the concept of sustainable development, and some are only at the early stages of following the principles.

Among developed economies of APEC the economy which is most actively involved in following the sustainable development concept is Australia. Since 1992 the **National Strategy for Ecologically Sustainable Development** is in effect in Australia.

The great attention to sustainable development aspects in terms of waste management, operational safety of mining enterprises is paid in Japan.

Below the generalized data are shown on legislative and regulatory initiatives of APEC economies

Economy	Name of document or program and regulatory legal act attributes if any	Governing institution (Ministry or government agency, or other official)	Put into effect (date)
Australia	Leading Practice Sustainable Development Program for the Mining Industry	Department of Resources, Energy and Tourism	2006-present
	Best Practice Environmental Management in Mining Program	Department of Resources, Energy and Tourism	1996-2000
	Working In Partnership Program	Department of Resources, Energy and Tourism	2001-present
	National Strategy for Ecologically Sustainable Development	Australian Government Department of Environment, Water, Heritage and the Arts (DEWHA)	1992
Japan	Mine Safety Act	METI	May 16, 1949
	Mining Act	METI	Dec. 20, 1950
	Act on Special Measures for Mine Damages Caused by the Metal Mining Industry, etc.	METI	May 1, 1973
	Act on the Promotion of Effective Utilization of Resources	METI, etc.	April 26, 1991
	Measures of stable supply of Rare Metals to Japan in future	METI	July 31, 2007

	Guideline for securing of resources in Japan	METI, MOFA	March 3, 2008
Canada	Minerals and Metals Policy of the Government of Canada: A partnership in Sustainable Development	Natural Resources Canada	1996
	The Social Dimension of Sustainable Development and the Mining Industry (Background Paper);	Natural Resources Canada	2003
	Minerals and Metals : Towards a Sustainable Future (Monograph for the UNCSD)	Natural Resources Canada	2000
	Background Paper on Land Access, Protected Areas and Sustainable Development	Natural Resources Canada	1998
Korea	Supporting system by government through setting up 'the Act on the Prevention and Reclamation of Mine Damage'	Ministry of Knowledge Economy	2005.5.31
Chile	Bicentennial Mining Policy	Ministry for Mining	2004
	Comprehensive Management Assessment (Balance de Gestión Integral)	Ministry for Mining	yearly report
Chinese Taipei	Mining Act	MOEA	12.31.2003
	Earth and Rock Excavation Act	MOEA	01.09.2008
	Environmental Impact Assessment Law	EPA	01.08.2003
	Standards for Determining Specific Items and Scope of Environmental Impact Assessments for Development Activities	EPA	12.28.2007
Malaysia	National Mineral Policy 2	Ministry of Natural Resources and Environment	2009
	National Environmental Policy	Ministry of Natural Resources and Environment	2002
	National Forestry Policy	Ministry of Natural Resources and Environment	1992
	Malaysian National Conservation Strategy	Economic Planning Unit, Prime Minister's Department	1993
	Industrial Master Plan 3	Economic Planning Unit, Prime Minister's Department	2006
	Mineral Development Act 1994(Act 525)	Department of Minerals & Geoscience	1994
	Various State Mineral Enactments	Department of Minerals & Geoscience	
	Environmental Quality Act, 1974	Department of Environment	

China	The Circular Economy Promotion Law of the People's Republic of China		2009
	China's Policy on Mineral Resources (white paper)	Ministry of Land and Resources	2003
	The Outline of the National Program for Prospecting Substitute Resources in Depleting Mines	Ministry of Land and Resources	2004
	National Mineral Resources Planning	Ministry of Land and Resources	2008
	Program for Restructuring and Revitalizing the Steel and Iron Industry		2009
	Program for Restructuring and Revitalizing the Nonferrous Metal Industry		2009

5. APEC AND ITS ROLE IN THE WORLD ECONOMY

Asia-Pacific Economic Cooperation Forum (APEC) – an international economic organisation, whose aim is the development of integration links among the economies of the Pacific Rim, was established in 1989. Today, APEC incorporates 21 economies, including the world economy leaders, specifically the USA, China, Russia, Korea, Canada and others.

Officially APEC objectives were identified in 1991 in the Seoul declaration:

- maintaining the economic growth of the region;
- strengthening of reciprocal trade;
- removing restrictions on the movements of goods, services and capitals among the economies according to the WTO provisions.

The past years have seen a dramatic change in the position of separate economies in the world economy. Over the period of 2000-2008, the world has witnessed significant changes. The majority of economies have joined the WTO. The question of Russia's joining the WTO is due to be solved in the short run. The world economy in this time has suffered a period of stagnation, growth, stabilization and crisis.

Gross Domestic Product (in fixed prices), % vs previous year

Economy	2000	2001	2002	2003	2004	2005	2006	2007	2008
Australia	3.4	2.1	4.3	3.0	3.8	2.8	2.8	4.0	2.1
Canada	2.9	2.7	3.9	2.9	0.5	0.4	4.4	0.6	-1.5
Chile	5.2	1.8	2.9	1.9	3.1	2.9	3.1	2.7	0.5
China	8.4	8.3	9.1	10.0	10.1	10.4	11.6	13.0	9.0
Hong Kong, China	8.0	0.5	1.8	3.0	8.5	7.1	7.0	6.4	2.5
Indonesia	5.4	3.6	4.5	4.8	5.0	5.7	5.5	6.3	6.1
Japan	2.9	0.2	0.3	1.4	2.7	1.9	2.0	2.4	-0.6
Korea	8.5	4.0	7.2	2.8	4.6	4.0	5.2	5.1	2.2
Malaysia	8.7	0.5	5.4	5.8	6.8	5.3	5.8	6.3	4.6
Mexico	6.6	-0.2	0.8	1.7	4.0	3.2	5.1	3.3	1.3
New Zealand	3.8	2.6	4.9	4.1	4.5	2.8	1.9	3.2	0.3
Papua New Guinea	-2.5	-0.1	-0.2	2.2	2.7	3.6	2.6	6.5	7.0
Peru	3.0	0.2	5.0	4.0	5.0	6.8	7.7	8.9	9.8
Philippines	6.0	1.8	4.4	4.9	6.4	5.0	5.4	7.2	4.6
Russia	10.0	5.1	4.7	7.3	7.2	6.4	7.4	8.1	5.6
Singapore	10.1	-2.4	4.1	3.8	9.3	7.3	8.4	7.8	1.1
Chinese Taipei	5.8	-2.2	4.6	3.5	6.2	4.2	4.8	5.7	0.1
Thailand	4.8	2.2	5.3	7.1	6.3	4.6	5.2	4.9	2.6
USA	3.7	0.8	1.6	2.5	3.6	2.9	2.8	2.0	1.1
Viet Nam	6.8	6.9	7.1	7.3	7.8	8.4	8.2	8.5	6.2

Source: IMF

Notably, whereas in 2000-2007 the development trends of separate APEC economies, just as those of the majority of the economies worldwide, were multidirectional, the second half of 2008 landed most of them in a crisis situation. Separate APEC economies have overcome the period of 2000-2007 with rather sustainable development rates, which has enabled them to ramp

up GDP, including per capita figures. On the other hand, separate economies have reported low development rates, and in some years even production slowdown.

APEC incorporates economies with considerable discrepancy in the economy development levels. They all differ both in terms of territory they occupy and the volume of GDP output, as well as the level of industrial production development and the size of population. They also differ substantially in terms of availability of fuel and energy reserves and raw material resources.

Alongside this, the development of all APEC economies has had a lot in common. They are all active participants of the world globalization process.

Share of APEC Economies in the Global GDP Output (calculation in terms of PPP), %

Economy	2000	2001	2002	2003	2004	2005	2006	2007	2008*
Australia	1.23	1.23	1.25	1.24	1.22	1.20	1.18	1.17	1.16
Canada	2.12	2.12	2.12	2.09	2.05	2.02	1.99	1.95	1.89
Chile	0.35	0.35	0.35	0.35	0.35	0.36	0.35	0.35	0.36
China	7.20	7.64	8.11	8.62	9.03	9.50	10.10	10.78	11.40
Hong Kong, China	0.42	0.41	0.41	0.41	0.42	0.44	0.44	0.45	0.45
Indonesia	1.20	1.21	1.24	1.25	1.25	1.26	1.27	1.29	1.31
Japan	7.68	7.53	7.35	7.20	7.05	6.93	6.76	6.58	6.37
Korea	1.75	1.78	1.85	1.85	1.84	1.84	1.84	1.84	1.85
Malaysia	0.51	0.50	0.52	0.53	0.53	0.54	0.54	0.55	0.56
Mexico	2.50	2.44	2.40	2.36	2.37	2.32	2.31	2.28	2.24
New Zealand	0.18	0.18	0.18	0.19	0.19	0.18	0.18	0.17	0.17
Papua New Guinea	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Peru	0.31	0.30	0.31	0.31	0.31	0.32	0.32	0.34	0.35
Philippines	0.43	0.43	0.43	0.44	0.44	0.45	0.45	0.46	0.46
Russia	2.68	2.76	2.82	2.92	2.98	3.04	3.11	3.20	3.30
Singapore	0.32	0.30	0.31	0.31	0.32	0.33	0.34	0.35	0.35
Chinese Taipei	1.08	1.03	1.05	1.05	1.06	1.06	1.06	1.07	1.07
Thailand	0.74	0.74	0.76	0.79	0.80	0.80	0.80	0.80	0.80
USA	23.52	23.20	22.94	22.72	22.47	22.21	21.74	21.15	20.69
Viet Nam	0.26	0.28	0.29	0.30	0.31	0.32	0.33	0.34	0.35
Total APEC share	54.49	54.45	54.69	54.91	55.02	55.11	55.12	55.12	55.14

**Tentative data*

Source: IMF

Today APEC economies count over 40% of the world's population. By provisional data of the International Monetary Fund, APEC share in the global GDP output in 2008 was beyond 55% (vs 54% in 2000). With that, the three APEC members accounted for over 38% of the world GDP, calculated in terms of purchasing power parity. First of all this concerns the USA (almost 20.7%), followed by China (11.4%) and Japan (approximately 6.4%). But whereas the USA and Japan's positions are tapering, those of China, on the contrary, are being consolidated. Just in 2000 China accounted for only 7.2% of the world GDP, while the USA share was 23.5%, and that of Japan – 7.7%. Russia's contribution to the world GDP is also growing incrementally - from 2.7% in 2000 to 3.3% in 2007.

The quick pace of development was characteristic of China, which is currently second in the world in terms of GDP output. True, it took the second place in the world by GDP output calculated in terms of currency purchasing power parity (PPP) rather a long time ago. In 2000-2008, China consolidated its positions in the world economy. The growth rates of GDP and industrial production of the economy were the most significant and in the world among the large economies. In 2008, China became 3rd in the world in terms of GDP output calculated in terms of the official exchange rate.

However, in view of the significant population size, China is remarkably behind the many APEC economies in terms of per capita GDP output. By this indicator, China is dramatically behind the USA, Canada, Korea, Singapore and other APEC economies. There has been a serious increase in per capita GDP output (in terms of PPP) in Russia – it almost doubled in 2007 as compared to 2000.

Per Capita GDP Output (PPP), USD per capita

Economy	2000	2005	2006	2007
Australia	26,819.0	32,910.1	34,424.2	36,214.9
Brunei	43,196.9	47,465.2	50,146.2	50,799.7
Canada	28,910.3	35,119.0	37,001.2	38,613.6
Chile	9,479.0	12,240.4	13,062.4	13,897.9
China	2,371.8	4,064.3	4,657.5	5,378.4
Hong Kong, China	26,178.2	35,549.5	38,863.1	42,179.4
Indonesia	2,435.3	3,216.9	3,458.3	3,726.5
Japan	25,273.8	30,315.3	31,931.6	33,572.8
Korea	16,455.6	22,783.2	24,653.6	26,522.6
Malaysia	9,062.0	11,610.5	12,464.7	13,385.1
Mexico	10,647.4	12,593.7	13,517.5	14,201.6
New Zealand	19,333.5	24,457.4	25,426.6	26,663.9
Papua New Guinea	1,668.1	1,782.7	1,843.7	1,970.8
Peru	5,055.0	6,474.7	7,090.9	7,763.6
Philippines	2,333.1	2,935.0	3,130.3	3,383.3
Russia	7,627.8	11,832.5	13,218.6	14,735.9
Singapore	32,786.9	43,754.3	47,428.1	50,346.2
Chinese Taipei	20,156.3	26,009.0	28,004.8	30,290.6
Thailand	4,950.7	6,837.6	7,407.4	7,925.7
USA	34,776.0	41,976.6	44,119.0	45,778.4
Viet Nam	1,419.9	2,139.9	2,357.0	2,602.5

Source: IMF

On the whole, APEC economies were characterized by rather low inflation rates, with the exception of several economies, including Russia.

The role of APEC in the world economy is already so great that the negative changes even in separate economies have a negative impact on the whole world economy.

The dawn of the modern-day financial and economic crisis was heralded by the mortgage crisis in the USA, which then transformed into financial. At present, it can largely be classified as the global financial and economic crisis.

Already in the fourth quarter of 2008, the majority of APEC economies as well as other economies, including EU, fully realized the aftermath of this crisis. There was a plunge in the

production and consumption of industrial products, prices fell, foreign trade volumes shrank. The leading economies were forced to take urgent steps to stabilize the situation and support the financial and real sectors of economy.

Among the key causes of the current financial and economic crisis, which in a number of aspects and parameters has a global nature, first and foremost it is necessary to highlight the external (towards specific economies) and internal factors and causes.

Inflation Rates in APEC, % (according to the data of IMF)

Economy	2000	2001	2002	2003	2004	2005	2006	2007	2008
Australia	4.5	4.4	3.0	2.8	2.3	2.7	3.5	2.3	4.4
Brunei	1.2	0.6	-2.3	0.3	0.9	1.1	0.2	0.3	2.7
Canada	2.7	2.5	2.3	2.7	1.8	2.2	2.0	2.1	2.4
Chile	3.8	3.6	2.5	2.8	1.1	3.1	3.4	4.4	8.7
China	0.4	0.7	-0.8	1.2	3.9	1.8	1.5	4.8	5.9
Hong Kong, China	-3.7	-1.6	-3.0	-2.6	-0.4	0.9	2.0	2.0	4.3
Indonesia	3.8	11.5	11.8	6.8	6.1	10.5	13.1	6.0	9.8
Japan	-0.8	-0.7	-0.9	-0.3	0.0	-0.3	0.3	0.0	1.4
Korea	2.3	4.1	2.8	3.5	3.6	2.8	2.2	2.5	4.7
Malaysia	1.6	1.4	1.8	1.1	1.4	3.0	3.6	2.0	5.4
Mexico	9.5	6.4	5.0	4.5	4.7	4.0	3.6	4.0	5.1
New Zealand	2.6	2.6	2.6	1.7	2.3	3.0	3.4	2.4	4.0
Papua New Guinea	15.6	9.3	11.8	14.7	2.1	1.8	2.4	0.9	10.7
Peru	3.8	2.0	0.2	2.3	3.3	1.6	2.0	1.8	5.8
Philippines	4.0	6.8	2.9	3.5	6.0	7.7	6.2	2.8	9.3
Russia*	20.2	18.6	15.1	12.0	11.7	10.9	9.0	11.9	13.3
Singapore	1.3	1.0	-0.4	0.5	1.7	0.5	1.0	2.1	6.5
Chinese Taipei	1.3	0.0	-0.2	-0.3	1.6	2.3	0.6	1.8	3.5
Thailand	1.6	1.7	0.6	1.8	2.8	4.5	4.6	2.2	5.5
USA	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.9	3.8
Viet Nam	-1.8	-0.3	4.1	3.3	7.9	8.4	7.5	8.3	23.1

**According to the data of the Federal Agency of State Statistics*

One of the major external causes and prerequisites of the crisis was the contradiction between globalization of the world economic links and heterogeneous dynamics of specific forms of economic transactions, which had been intensifying in recent decades.

The world economy had been developing at a slower pace than the volumes of global trade, the size of direct foreign investments and, all the more so, the world market of financial derivatives. With an average growth of the global GDP in recent years, the less than 4% volume of the world market of financial derivatives (options, swaps, futures and other “derivative” securities) had grown over six times and very nearly exceeded the global GDP by a factor of ten. Naturally, the blowing up of large-scale financial speculations and imperfection of mechanisms of global and regional regulation of financial flows, which would have been quite adequate to the intensifying globalization of the world economy and internationalization of financial markets, have become one of the constituents of the present-day crisis in the world economy.

China, Russia, Indonesia, Malaysia and other economies have allocated huge funds to lift the economy out of the crisis situation. The governments of six South-East Asian economies,

including Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam, have announced the allocation of \$102.1 bln. for the implementation of the package of measures to support economy. With that, a significant part of the funds will be used for implementing building projects and infrastructure development, which will positively affect the demand for ferrous metals in the region, particularly for mill bar. The Chinese government alone have allocated 4 trillion yuans for the implementation of the package of measures to stimulate economic growth. The measures planned for the period until 2010, encompass realization of building and infrastructure projects, including the building of airports, motor and railway roads, development of power industry and financing of measures to restore districts that have suffered from earthquake. Additionally, extensive VAT preferences and measures to support investments have been introduced.

Credit interest rates have also been reduced almost to zero in a number of industrially developed economies, including the USA. Russia chose its own way to follow and, inversely, increased the rate of refinancing, which has severely limited the capabilities of crediting both businesses and population. It was not until the end of the first half-year that the rate of refinancing was slightly reduced.

In the USA, the funds allocated to support economy have largely been directed into the financial sphere. In Russia, the funds for the support of economy have had a positive effect only on the financial sphere.

True, joint efforts have brought about some positive changes on the stock market. But in fact this is a virtual economy. The situation with the real economy is considerably graver and its coming out of recession in the nearest future is much questioned.

The most efficient measures have proved to be those of China, which through massive target investments in the development of domestic demand, has succeeded in sustaining the economy. At the same time, other economies, especially the USA, Japan and Russia, have encountered serious problems. Particularly vulnerable has proved to be the Russian economy, which is largely focused on the external market. There has also been a sharp downfall in Japanese indicators, the economy in which is also heavily export-oriented. Eventually, steel production in the economy over the period of January-May 2009 has dropped down by 42.1% as compared to similar period.

The high development rates of Chinese economy largely stem from the processing industries. The most dynamic of them is machine-building, which has been demonstrating the annual growth rates in excess of 20% in recent years. The most intensive growth is being recorded by segments of machine-building – production of power generating equipment, electronic engineering, car manufacturing and shipbuilding. Specifically in terms of shipbuilding, China has been holding the stable 3rd place in the world in the last decade, the tonnage of its vessels being over 15% of the general world's tonnage already in 2005. China ranks among the world leaders in the production of electric household appliances and telecommunication equipment, television sets (1st place in the world) and other audio- and video-equipment. There is a rapid development in the innovation segments of machine-building, including manufacture of aerospace equipment.

The chemical industry is developing at a rapid pace. China is the world's unquestioned leader in the production of mineral fertilizers. The pharmaceutical industry has reached remarkable success.

China's fuel-energy complex is one of the largest worldwide. In the production of coal and iron ore, China ranks first in the world, dramatically outpacing all other economies. In spite of the rapid economy development, China is experiencing problems with covering its demand for electric power. At present, China is heavily investing in its nuclear power engineering and construction of new hydroelectric power plants. China is the leading producer of ferrous and nonferrous metals in the world.

Quick development rates are demonstrated by the industry of building materials. Thus, China is the world's leader in the production of cement. The existing cement production capacities are being quickly renewed.

Needless to mention the level of development of Chinese light industry, its products being widely represented on all the world's markets.

It is the real economy sector and, primarily, its processing industry, which is the basis of export focus for the entire Chinese economy, a factor of diversification and improvement of the hi-tech nature of the economy export, as well as its greater resistance to the global economic perturbations.

Infinitely more words and time can be devoted to the analysis of various aspects of the global economy as a whole and separate economies in particular, break down into components the major causes of the present situation and the prospects of coming out of the crisis, as well as its duration, possibilities of further weakening of the dollar significance etc. However, this is beyond the scope of this document.

It is worth mentioning that at the present stage the interaction of all economies, including APEC, becomes crucially important in the context of overcoming the crisis, restoring the world economy, renewing the full effectiveness of the financial system, solving the growing global issues, including the supply of population with food, water and a solution for provision of fuel-energy and raw material resources. The issues of environmental protection, public health and many others must be raised on a cardinal new level and then solved. All this can only be done in the context of the world communities, not one separate state, even the world economy leader.

Hence the necessity to consider the growing role of APEC in the world economy and its importance in overcoming the global financial and economic crisis.

6. GLOBAL IORM MARKET

6.1. Current Status of the World IORM Market *

During the last quarter of 2008 and the first half-year of 2009, the situation on the world Iron Ore Raw Materials (IORM) market has changed considerably compared to the middle of the previous year, which was conditioned by the deepening crisis in the world economy and a drop in the global production of ferrous metals.

In the context of the shrinking demand for ferrous metals and their plunging price levels, metallurgical enterprises are embarking on a cutback in the production of metal products. This is typical of all regions. Naturally, the fall in the production of ferrous metals in the fourth quarter of 2008 and the persistence of the low level of output in January-April of 2009 has entailed a decrease in the demand for iron ore.

The spot market, particularly in February-March 2009, registered a price fall on IORM against the low level of freight rates.

Upon the results of 2008, the global production of pig iron, according to WSA, has declined by 2% vs 2007 and constituted 930.2 mln. t. (vs 950.2 mln. t. in the previous year), and that of steel – by 1.7% down to 1.327 bln. t. (1.351 bln. t.). Meanwhile the production of pig iron and steel in November and December 2008 hit extreme lows over the last years. Thus, the production of pig iron in November 2008 was 63.7 mln. t., and in December – 64.6 mln. t. This is significantly below the figures of, say, December 2007 – 81.2 mln. t. As a result, steelmaking amounted to 87.8 and 84.4 mln. t. (vs 111.5 mln. t. in December 2007).

The reduction in the production of pig iron and steel was marked in all the key regions. True, whereas the pig iron output has experienced a cutback in virtually all regions, the Asian economies have almost preserved the 2007 levels. Steelmaking has grown slightly in other European economies, the economies of the Middle East and Asia. Steelmaking in Asian economies has registered a slight increase solely on account of China, India and Korea.

In the first months of 2009, the global production of pig iron and steel continued low. Although in March 2009, there was an insignificant growth of pig iron and steel output in the world, mainly due to China, with a certain setback in April.

The consumption of IORM fell accordingly. In the fourth quarter of 2008 and the first quarter of 2009, the world's leading iron ore production enterprises were forced to cut down on their IORM production and supply to the world market.

Along with this, after a number of years of intensive output of metallized raw materials, in 2008, according to WSA, the production grew but slightly against 2007 – by 0.6% up to 56.8 mln. t. (56.4 mln. t. a year earlier). With that, in December 2008, the output of metallized raw materials was just 3.8 mln. t., which is remarkably behind the figures of the mid-year and December of 2007 (almost 5 mln. t.). In January-April 2009, the global output of metallized raw materials, according to WSA, dropped against similar period of the previous year by 7.8% to 17.3 mln. t. (18.8 mln. t. a year earlier).

In the context of the sharp slump in the demand for ferrous metals and their production against the background of the financial crisis and the necessity to adapt to the conditions of reduced demand as well as other reasons, many enterprises were forced to shift their project deadlines. At the same time, some companies continue their intensive investment activity, although having reviewed investment volumes towards reduction. Conditioned by the shrinking demand and volumes of metals production, metallurgical enterprises are stopping their major melting facilities until a better situation on the global market.

* Data Sources: WSA [2], AME[5], Tex Report[3]

Nevertheless, in different economies of the world, metallurgical companies are either carrying out investment programmes that envisage reconstruction of the existing blast furnaces, construction of new facilities, or planning their implementation. In China, metallurgical companies are also running programmes of reconstructing blast-furnace production with the commissioning of new modern facilities, which are to substitute the outdated blast furnaces.

The shutdown of obsolete and environment-polluting blast furnaces still does not solve the problem of production facilities overcapacity in the economy. But in the context of the financial crisis, many companies are reviewing their investment programmes, and a number of projects are most likely to be postponed to later periods. At the same time, some companies, including in China and India, continue the building and commissioning of new modern facilities.

In the long-term perspective, further expansion of ferrous metals production is expected worldwide, mainly on account of boosting output in India, Iran, the Middle East economies, China, Brazil and Russia. But it is going to happen no sooner than the overcoming of the crisis by the world economy and recovery of demand to the level of 2007-2008. Meanwhile, forecasts for 2009 are rather pessimistic. Thus, according to World Steel Dynamics forecasts, the decline in steelmaking in 2009 vs. the previous year may constitute 13.9%. Credit Suisse forecast is just slightly more sanguine, envisaging a cutback by 10% and the start of recovery in mid-year. According to AME forecasts, the global production of pig iron in 2009 will experience a decline on 2008 by 12% to make 819 mln. t. In 2010, the global output of pig iron may grow by approximately 2.8 % on 2009 level to make 842 mln. t. This will mean the decline in the demand for IORM.

In 2009, the production of metallized raw materials is expected to reduce to 62.3 mln. t. (vs 66.3 mln. t. in 2008), with a certain rise up to 63.1 mln. t. in 2010. In the mid- and long-term perspective, the demand for IORM may be expected to further increase to the level exceeding the figures of 2007 and 2008.

The General situation on the world IORM market in October-December 2008 and January-May 2009 was characterized by:

- the decline in the production and shipment of IORM by the majority of mining enterprises due to the cutback in the ferrous metals output in many economies around the world conditioned by the world's deepening financial crisis and its transition into an economic crisis;
- the plunge of freight rates to the extreme minimum over the last five years at the end of 2008 and beginning of 2009, due to the shrunk transportation volumes of raw materials, and their increase in April-May;
- the fall of the Chinese demand for IORM in the fourth quarter of the current year and the growth of its procurements in January-April 2009;
- the announcements of mining enterprises, i.a. Vale and Rio Tinto, about their revision of development programmes with a possible abandonment of a number of projects or postponement of their deadlines due to the financial crisis and the reduction of the demand for raw materials;
- the continued struggle for iron ore assets;
- the strife of large metallurgical companies to ensure the availability of iron ore for themselves by participating in the foreign iron ore projects and by acquiring the existing iron ore assets;
- the holding of complex negotiations on IORM price levels with supply under the long-term contracts in 2009;
- the sale of non-core assets by mining companies;
- the steep fall of IORM price levels on the spot market compared to the middle of 2008.

The fourth quarter has seen several significant events on the IORM market. They were two processes, one of which related to the beginning of negotiations on the new price levels on

IORM with supplies in the financial year of 2009; the second one consisted in the possible takeover of Rio Tinto Group by BHP Billiton Group and further consolidation in the mining industry.

But while the first process transferred smoothly into 2009 and lasted almost throughout the whole of the first half-year, the second has lost its relevance amid the global economy crisis. But then they have walked along a different path. BHP Billiton and Rio Tinto have decided to set up a joint iron ore enterprise. This decision poses serious implications for the world iron ore market and the relationship between the Australian mining companies and their Chinese customers. The Chinese CISA has already given negative comments on the establishment of the joint enterprise, expressing the view that it consolidates a big part of Australian large iron ore deposits within a single company, which will result in a monopoly. At the same time, Rio Tinto has refused to sell part of its shares for \$19.5 bln. to the Chinese company Chinalco. If the deal is finalized, the joint enterprise and the Brazilian supplier Vale will control 70% of the world iron ore market.

While just in the first quarter of 2008, one of the major events was the reaching of agreements on IORM price levels between Companhia Vale do Rio Doce (Vale) and a number of the world's leading metallurgical companies, then in the fourth quarter it was the start of the first round of negotiations on IORM supply in 2009 f.yr.

The feature of this stage of developments is the fact that the decline in the production of ferrous metals and IORM consumption in the world have led to the reduction of price levels under the long-term contracts for 2009 f.yr. as compared to the previous financial year. But according to CISA, the price level reduction is but too insignificant against the fall of price levels on ferrous metals on the world market and the shrinkage of pig iron and steel production and consumption levels.

The middle of the third ten-day period in May has seen the first agreement reached on IORM price levels with supply in the current financial year (from April 2009). The Australian Rio Tinto has reached an agreement with the Japanese Nippon Steel Corp on the lowering of price levels on iron ore raw materials. Prices on iron ore fines have been reduced by 33% on the previous financial year, and by 44% - on lump ore.

Thus, the prices on IORM by Rio Tinto Group with supply by the Japanese Nippon Steel Corp are as follows:

Product	USD/unit of iron content of ore (on dry basis)	
	2008 f.yr.	2009 f.yr.
Pilbara Blend Fines	144.66	97.0
Yandicoogina Fines	144.66	97.0
Pilbara Blend Lump	201.69	112.0

Data Sources: WSA [2], AME[5], Tex Report[3]

It must be mentioned that this is the first agreement on IORM price levels with supply under the long-term contracts which has been concluded this year. With that, the Chinese metallurgical companies disagree with such change of IORM price levels. China Iron and Steel Association (CISA) has remarked that Chinese metallurgical companies will not consent to the lowering of IORM price levels by less than 40%.

Soon afterwards it became known that the Japanese companies, i.a. JFE Steel, Kobe Steel and Sumitomo Metals, also agreed to the prices offered by Rio Tinto on IORM.

But the Korean POSCO as well as Chinese Taipeiese companies also accepted the new price offers by the Australian group.

Hamersley Iron has signed contracts for IORM supply in 2009 f.yr. with the Korean POSCO and the Chinese Taipeiese China Steel and Dragon on the same terms which had been agreed by its parent company Rio Tinto with the Japanese metallurgical companies. Posco, China Steel and Dragon will receive Pilbara and Yandicoogina iron ore fines at 97 cents per unit

of iron content of ore, and 112 cents for Pilbara lump ore. That is the price reduction constitutes 33 and 44.5% compared to the previous year.

China continues to push for the lowering of IORM price levels while European metallurgical companies are anticipating the final settlement of prices between the world's key iron ore companies and Chinese metallurgical enterprises.

The situation of the world IORM market is developing under the conditions of the falling demand for ferrous metals. The decline in the global output of pig iron invokes shrinkage in the demand for IORM and a fall in its prices on the spot market. It goes without saying that in the nearest several months the low level of the global ferrous metals output with an incremental growth, and consequently a rather low demand for IORM, will continue. Although there are already certain signs of improvement.

Almost all the world's leading metallurgical companies, i.a. ArcelorMittal and the Russian metallurgical complex, cut down their output of pig iron and steel in the last quarter OF 2008 and the first months of 2009.

In China, the major metallurgical enterprises enhanced steelmaking in 2008, but this occurred not so much because of production growth on the existing assets, but rather resulted from the consolidation and merger processes. Baosteel took over Guangdong Iron & Steel, which enabled the former to enhance steelmaking in 2008 by 24% vs 2007.

Hebei Iron & Steel was set up in the previous year as a result of merger between Handan and Tangshan. Wuhan I&S took over Liuzhou, which enabled the former to enhance steelmaking by 37%.

ArcelorMittal Group has cut down its steelmaking by 11% according to the results of the previous year. There was also a cutback in production among European and American metallurgical companies, including Nucor, ThyssenKrupp and Riva.

The period of January-April 2009 has seen no dramatic changes of the situation. In January-April 2009, the global steelmaking fell as compared to similar period in the previous year by 22.7%, to 354.1 mln. t. (vs 457.8 mln. t. a year earlier).

Any positive changes are most likely to occur in the second half of 2009 in the conditions of the emerging signs of improvement in the world economy. Along with this, the declining demand for IORM entails low price levels on the spot market.

Financial difficulties may result in many mining companies being forced to refuse from implementing the outstanding projects or postpone them to later periods. The revision of their investment plans has been announced by various mining companies, including Rio Tinto and Vale. At the same time, however, a number of mining enterprises intend to continue aggressive investing in the development of iron ore production.

China increased its IORM import in January-September 2008, and the issue with provision of vessels for transportations and an outstanding reconstruction of ports in Australia were conditioning an insufficient supply of ore to the world market. Rio Tinto Group has announced completion of the programme of expanding the Dampier port, through which IORM is shipped from the Pilbara region, Western Australia. The port's throughput capacities have been enhanced by 90 % from 74 mln. t. (2004) to 140 mln. t. as of today.

But the decline of the global demand for IORM (the fourth quarter 2008 and beginning of 2009), i.a. Japan, Korea and China, has eased the tension, which gives enough time to improve transport infrastructure. All the more so, the global IORM consumption volumes in 2009 are forecast to go down.

Even the enhanced IORM output in China does not allow domestic metallurgical enterprises to restrain the IORM import on the already achieved level. In 2008, China increased the IORM import in the economy and in February-April it registered the record level of import IORM procurement.

The growing demand for IORM on the part of the key importers, primarily China, in January-September 2008 predetermined the price trends on the world market – the price rise under the long-term contracts and the high price level on the spot market. But further production

decline has dramatically altered the situation. The prices on the spot market have started to go down. Their slight rise in December of the previous year has given place to a new recession early in 2009. Understandably, the slump in transportation volumes has brought about the lowering of freight rates.

Nevertheless, despite the complex situation with the world economy, a number of research groups and companies are already forecasting the recovery by the end of 2009 and the rise of the demand for IORM by 2010.

According to the forecasts of Australian Bureau of Agricultural and Resource Economics (ABARE), already at the end of this year the demand for IORM on the world market may be expected to recover its normal position. Consequently, Australia already in 2009/2010 f. yr. (to end on June 30, 2010) may boost its iron ore export by 13%, as compared to the current financial year, to 337.5 mln. t. It is expected that in 2008/2009 financial year iron ore export shipments from Australia will make 298 mln. t. The growth of export shipments, as forecast by ABARE, will be connected with the increasing demand for IORM by China. And already in 2010/2011 financial year there are reasons to expect a new surge in IORM export shipments from Australia, this time by 11%.

According to AME forecasts, the global iron ore consumption in 2009 may constitute 1.9 bln. t. (with the Chinese ore production volumes), which is 11.7% less on last year. In 2010, consumption is expected to rise by 3.6% to 1.98 bln. t.

The global production of IORM in 2007, according to AME, was 2.0 bln. t. (with ore production in China, not production of commercial ore). Against 2000, the global IORM output has grown by almost 1 bln. t. There was a slight growth of IORM production in 2008 - 2.17 bln. t. (with ore production in China).

Production of commercial iron ore is currently mainly concentrated in four economies: Brazil, Australia, China and India. These economies accounted for over 75% of the global output of commercial ore in 2008.

There is a continuing growth of iron ore output in China. In 2007, the domestic iron ore production reached 707 mln. t., and in 2008 – it was 824 mln. t. Nevertheless, China, which mainly accounts for lean ore production, is forced to import ever increasing amounts of IORM. China remains the leading IORM importer in the world. In 2007, China imported 383.6 mln. t. of IORM, which exceeded 49% of the world's total imports of iron ore. Upon the results of 2008, IORM import in China has mounted to 443.6 mln. t.

Upon the results of 2008, all the leading mining companies, i.a. CVRD, Rio Tinto, BHP Billiton and others, have boosted IORM production, which was explicitly connected primarily with the rise in the global production of ferrous metals in January-September of the past year. But the fourth quarter registered a reduction in the IORM output, including among all the leading mining enterprises.

The Swedish LKAB, in spite of the global financial crisis and the decrease of the demand for IORM, has demonstrated record figures in ore production upon the year results. Its ore production in 2008 reached almost 43 mln. t., including 27.5 mln. t. in Kiruna and 15.4 mln. t. in Malmberget. The company's ore production has grown by 2 mln. t. against 2007.

Consequently, the company has increased its output of iron ore pellets. It has reached 19.9 mln. t., more than by 1 mln. t. exceeding the last year's figures. Pellet shipments have also risen to make 17.9 mln. t.

Upon the results of 2008, the Australian Rio Tinto has also enhanced IORM output on its assets in Australia, Canada and Brazil – by 8.1%, to 193.2 mln. t. But the fourth quarter of 2008 has brought a sharp fall in production – 40.466 mln. t. (23.9% less than the 3rd quarter and 16.1% less compared to similar period in the previous year). Upon the results of 2008, the South African Kumba Iron Ore has dramatically increased profit, but registered a slump in production and sales of IORM at the end of the past year due to the shrinking demand. The company is the world's fourth largest IORM exporter.

The IORM production is growing in a number of other economies, including Iran, which not only covers the demand of domestic metallurgical companies but also increases its export. Iran is intensively expanding its pellet production capacities.

Remarkable growth of IORM output is registered in Iran. Upon the results of three quarters of the Iranian year (ended on December 20 2008), the domestic output of iron ore, according to Imidro Group, constituted 18.9 mln. t., which is 20% more against similar period of the previous year. Part of its iron ore Iran supplied to the world market – 1.9 mln. t. for the total of \$272 mln. The economy's leading mining companies - Chador Malu (7.4 mln. t. over 9 months), Gol e Gohar (5.7 mln. t.) and Markazi (4.7 mln. t.).

The global IORM consumption is concentrated in the regions with the large-scale production of ferrous metals. The Asian economies account for an increasing share in the structure of the global IORM consumption. In 2007, the share of the Asian economies in the IORM consumption exceeded 69%. Consumption growth is related to further increase of ferrous metals output in China and other economies of the region. The share of China in the global IORM consumption has increased by approximately 29% in 2004 up to 55 % in 2007 (without revaluation of the domestic ore production), and in 2008 it reached 58%.

In the mid-term perspective, the situation with the global IORM consumption structure is expected to remain unchanged. China will preserve its leading position in the global IORM consumption.

The growth of Chinese demand for IORM will determine further developments on the world market of ferrous metals.

The sudden drop in the global pig iron and steel output in September-December of the previous year has led to substantial shrinkage of the world trade in IORM.

The general volume of the global trade in IORM has seen a material uprise over the last few years and in 2007, by verified data of AME, amounted to 839.8 mln. t., which is 8,2 % more on last year's figures. In 2008, by tentative data, the global IORM trade experienced an upswing in spite of the drop in the fourth quarter of the previous year and went beyond 904 mln. t. (growth by 7.7 % on last year's level).

The overwhelming part of IORM is delivered by sea. According to AME, sea deliveries of IORM in 2007 reached the amount of 792 mln. t., and in 2008 went even beyond 858 mln. t.

However, 2009 is expected to bring the decline in both the global IORM export and its deliveries by sea. The global IORM trade by sea in 2009 is anticipated to make 756 mln. t., which is almost 12 % below the indicators of 2008.

The key IORM importers are the Asian and European economies. Their last year's share accounted for nearly 93 % of the world's import, including about 74 % for the Asian economies. And this situation is very unlikely to change in the future. What can be expected, though, is further expansion of the share of the Asian economies in the structure of the global IORM import.

In 2008, there was an increase in the import of IORM to many largest importers, including Japan, China and Korea. Along with this, a number of European economies, including Germany, France and Italy, have slightly cut back on their IORM imports.

The leading positions in the **global export** structure are held by three economies: Australia, Brazil and India, which in 2007 accounted for over 75 %, and in 2008 – 77 % of the world's general deliveries of IORM. Changes in the IORM export structure by separate economies may occur in the long run when India has implemented its plans for the development of ferrous industry, which may lead to a complete or partial withdrawal of India from the IORM market.

6.2. Role of APEC on the World IORM Market

Positions of APEC members on the world IORM market are determined by the fact that they include the world's leading economies, this specifically concerns the USA, China as well as Russia, Korea, Australia and a number of other economies. APEC is responsible for the major share in the production and consumption of ferrous metals, which determines its role in the consumption of IORM.

A number of APEC economies possess significant IORM reserves, particularly Russia, China, Australia, USA and Canada. That is why these economies, being themselves large IORM consumers (except for Australia), are conducting a large-scale production of iron ore.

In terms of IORM production volumes, APEC members hold a remarkable place in the world IORM output. With that, their role in the world production is constantly growing, which is connected not only with the enhancement of IORM production in Australia, but with a sharp increase of their production in China, the world's leader in terms of this indicator. Recent years have seen intensive expansion of IORM production in Brazil and other economies, i.a. RSA, Ukraine, Kazakhstan etc.

Nevertheless, the role of APEC economies in the production of commercial iron ore has been growing, mainly on account of China. Even the revaluation of ore production in China in terms of the world's average iron content, which is rather conditional, as it is impossible to make a highly precise identification of iron content in produced ore by separate ore mining enterprises of China, showed that its role in the world production has risen from 11 % in 2000 to 22.4 % in 2008. The production of commercial iron ore has more than tripled over the period in question.

Iron ore production has grown remarkably in Australia, which is the world's second producer of IORM. Altogether in 2008, China and Australia accounted for almost 42 % of the global IORM output. And the role of these economies in the global IORM output will be growing.

Global IORM Output, mln. tons

	2000	2005	2006	2007	2008
World total	959.3	1314.4	1497.7	1630.3	1730.0
Including APEC	495.1	665.4	770.9	854.7	940.3
China *	105.3	197.6	276.4	332.3	387.3
Share of APEC	51.6	50.6	51.5	52.4	54.4
Share of China	11.0	15.0	18.5	20.4	22.4

**Revaluated in terms of the world's average iron content of ore
According to the data of WSA, AME and economies*

This largely determines the place of APEC economies in the global IORM export. Taking into account the fact that APEC economies are the leaders in the global production of pig iron, the majority of them mainly import IORM. Among APEC economies, IORM is exported by just 11 economies, of which only four carry out shipments of over 10 mln. t/yr. Of all the APEC economies, Australia is the key IORM exporter. It has become the leader in IORM supply to the world market. Nevertheless, the share of APEC economies in the global IORM export is slightly beyond 43 % (2008), which is even somewhat below the level of 2000 (44.8 %). It must be mentioned that the majority of IORM exports from APEC is carried out within this community. Australia is the key iron ore supplier to China, Japan and Korea. Russia is also increasing its IORM supplies to China, but this is incomparable with the export from Australia to these economies. IORM supplies from Russia to the Asian economies are restrained by considerable distances and, consequently, high transportation costs. The traditional key sales region for Russian IORM is the East European economies.

Global IORM Export, mln. tons

	2000	2005	2006	2007	2008
World total	510.8	752.5	803.0	855.5	904.5
Including:					
APEC	229	312.4	323.4	347.7	390.4
i.a.:					
Australia	165.2	239	248.4	266.9	310.4
Share of APEC in the global export	44.8	41.5	40.3	40.6	43.2

According to the data of WSA, AME and economies

Along with this, the role of APEC economies is largely visible in the consumption and import of IORM. Over the period from 2000 to 2008, the share of APEC members in the global IORM import has grown from 58.6 to almost 76 %. To a considerable degree, this is related to the rapid development of ferrous industry in China, which has become the world's leading producer of metal products. The growth of domestic steelmaking conditioned the need for a more extensive import of iron ore raw materials in the economy. In addition, domestic iron ore production was rapidly growing, and already in 2008 went well over 820 mln. tons. However, the ore in China has low iron content, which, when revaluated in terms of the world's average iron content in commercial ore, gives 387.3 mln. tons.

The import of IORM to China in 2000-2008 has grown 6.3 times and, according to the previous year's results, constituted approximated 49 % of the world's general import of IORM. Moreover, among the world's large importers of iron ore are Japan and Korea. Japan's share of the global import in 2000 was 25.8 %, and that of Korea – 7.6 %. Thus, in the world's general import of IORM, China, Japan and Korea were responsible for 47 % in 2000. Afterwards, Japan and Korea rather moderately enhanced their IORM imports, in proportion to the increase of pig iron and steel output. But the share of these economies in the global IORM import has dropped remarkably against the surge in the import of IORM in China. Altogether, China, Japan and Korea accounted for over 70 % of the world's general import of IORM in 2008.

At the same time, it should be mentioned that Japan and Korea do not possess their own iron ore base and are pure net-importers of IORM. China, which has become the world's largest IORM producer, is also their pure net-importer. IORM exports here are extremely small.

Among the other APEC economies, IORM import is carried out by Chinese Taipei, the North American economies and Russia. But their share in the global import is small against the abovementioned APEC economies. It is worth mentioning that Russia, just like Canada and the USA, is fully capable of covering their demand for IORM, but chooses to import them in order to cut logistics costs. Russia imports IORM to satisfy the demand of Magnitogorsk metallurgical complex situated not far from the Sokolovsko-Sarbaysky mining and processing complex in Kazakhstan, which was built in the Soviet times specifically to ensure supply to the former. Another large IORM importer – the European economies. It seems obvious that the coming years are unlikely to see any considerable changes in the structure of the global IORM import.

Global IORM Import, mln. tons

	2000	2005	2006	2007	2008
World total	510.8	752.5	803.0	855.5	904.5
Including:					
APEC	299.4	511.3	563.8	626.8	686.3
i.a.:					
China	70.0	275.3	326.3	383.1	444.1
Share of APEC in the global import	58.6	67.9	70.2	73.3	75.9
Share of China	13.7	36.6	40.6	44.8	49.1

According to the data of WSA, AME and economies

As APEC members occupy the leading positions in the global pig iron and steel output, they are also the largest IORM consumers. APEC economies include the world's leading producers of pig iron, i.a. China, Japan, Russia, Korea and the USA. It is this that determines the extensive share of APEC in the global apparent consumption of IORM. Already in 2000, APEC was responsible for nearly 59 % of the global IORM consumption. In 2008, its share was already 71.5 %. This also was brought about by the expansion of pig iron output in China, its share of the global apparent IORM consumption being in excess of 48 %.

Global Apparent Consumption of IORM, mln. tons

	2000	2005	2006	2007	2008
World total	959.3	1314.4	1497.7	1630.3	1730
APEC	565.5	864.3	1011.3	1133.8	1236.2
Including China	175.3	472.9	602.7	715.4	831.4
Share of APEC in consumption, %	58.9	65.8	67.5	69.5	71.5
Share of China, %	18.3	36.0	40.2	43.9	48.1

According to the data of WSA, AME and economies

6.3. Largest IORM Exporters*

Australia

In recent years, Australia has remarkably enhanced the production of iron ore raw materials and their supply to the world market. In 2007/08 f.yr., domestic output of IORM, according to the data of ABARE, grew by 8.3 % and amounted to 294.3 mln. tons (257.4 mln. tons a year earlier). Over the period of 2000-2008, domestic production of iron ore has grown by more than 140 mln. tons

The growth of ore production, just like the increase in production capacities, among the leading domestic mining companies are connected primarily with the surge of demand in China. Both large and small production companies in Australia are implementing programmes for expansion of capacities. In particular, Rio Tinto is planning to enhance its production capacities to 320 mln. tons/yr, and BHP Billiton – to 205 mln. tons/yr.

According to Australian Bureau of Statistics (ABS), IORM supply from Australia to the world market in 2007 reached 266.884 mln. tons

Australia ships IORM to the world market mainly through three ports: Dampier, Port Hedland and Cape Lambert. These ports handle the shipments of lump ore and iron ore fines only. The shipments of pellets are supported by other domestic ports.

In 2008, Australia went for a new increase of IORM export. The growth of its IORM shipments to the world market, according to the data of Australian Bureau of Statistics (ABS), constituted 16.3 % against the previous year – up to 309 mln. tons (vs 266.884 mln. tons a year earlier).

The structure of Australian IORM export is dominated by iron ore fines. Altogether in 2008, Australia exported over 205 mln. tons of iron ore fines, which was 8.6 % more on 2007 (189.1 mln. tons). The structure of shipments of iron ore fines by economies distinguishes three main consumers: China, Japan and Korea.

The shipment of iron ore fines to China in 2008 totaled 122.749 mln. tons – 59.8 % of the overall export of this type of IORM. Significant amounts of iron ore fines in 2008 were shipped to Japan – 49.739 mln. tons and Korea – 23.268 mln. tons. The shipments of iron ore fines to

* Data Sources: Tax Report [3], MySteel [24], CBI China, The Economist Intelligence Unit [13]

Chinese Taipei made up 5.897 mln. tons last year, and to France – 2.877 mln. tons. The shipments of iron ore fines to other economies in 2008, just like in the previous years, were insignificant. In particular, Australia carried out the shipments of iron ore fines in 2008 to Great Britain (698 thousand tons.), Netherlands (541 thousand tons.) and Italy (415 thousand tons.).

Exports of lump ore in 2008 rose by 35.7 % and reached 104.01 mln. tons. With that, 98.5 % of lump ore were shipped to China, Japan, Korea and Chinese Taipei.

Export of lump iron ore to China amounted to 60.132 mln. tons, which was almost 58 % of the overall amount of shipments to the world market. As much as 28.1 mln. tons of lump ore were shipped to Japan and 10.1 mln. tons – to Korea. The supply of lump ore to Chinese Taipei exceeded 4 mln. tons in 2008.

It should be mentioned that the major shipments of lump iron ore were carried out through two ports: Dampier (38.4 mln. tons) and Port Hedland (48.8 mln. tons).

The export of iron ore pellets from Australia is small – 1.072 mln. tons, which is by 8.7 % less than in 2007. Australia exports the whole amount of pellets to China. Australian shipments of iron ore pellets are carried out through the ports of Latta (0.96 mln. tons) and Whyalla.

Thus, in 2008 Australia exported to China 183.953 mln. tons of IORM, which reached nearly 59.3 % of the general amount of shipments to the world market. Japan received 76.82 mln. tons of IORM, Korea – 33.4 mln. tons, and Chinese Taipei – 10 mln. tons.

According to the tentative data of Australian Bureau of Statistics (ABS), Australia slightly expanded its export of iron ore raw materials in the first quarter of 2009 as compared to similar period in the previous year – up to 78.157 mln. tons (73.749 mln. tons in the first quarter of 2008). The growth of export occurred due to the increase of shipments to China by 18.033 mln. tons, or by 45.4 %, to 60.596 mln. tons. The shipments of IORM to Japan, Korea, Chinese Taipei and France have dropped remarkably.

The main IORM production in Australia is largely focused on the assets of the two groups - Rio Tinto and BHP Billiton.

The two world's leading mining companies (BHP Billiton and Rio Tinto), owning iron ore assets, including in Australia, are expanding the production and export of IORM. This, however, only happened according to the results of the first three quarters of 2008. In the fourth quarter, the Australian companies cut down on the production and exports of IORM to the world market due to the global crisis.

In 2007, Group Rio Tinto expanded production of iron ore vs the previous year by 6.2 %, to 178.63 mln. tons (168.215 mln. tons a year earlier). The Australian assets of the Group (Hamersley and Robe River Iron Associates (RRIA)) in 2007 accounted for 163.624 mln. tons of IORM, which exceeds the level of 2006 by 9.1 %, or 13.76 mln. tons.

In the first quarter of 2008, the Group raised IORM production by 16.8 % compared to similar period of the previous year – to 46.763 mln. tons. With that, the Group's exports of IORM were increased in the first quarter by 22.5 %, to 42.691 mln. tons. The production and shipments of IORM were raised on account of the Group's assets. As a reminder, the Group fully owns Hamersley Iron and Corumbá. The Group's share of interest in RRIA is 53% and Canadian Iron Ore Company of Canada – 59 %.

In the second quarter of 2008, Group Rio Tinto expanded its IORM output to 52.8 mln. tons. The growth of production and sales of IORM from the Pilbara regions was connected with the expansion of Yandicoogina capacities to 52 mln. t/yr and Hope Downs (50% shares belong to Rio Tinto).

In the third quarter of 2008, the Group made a new improvement to its production indicators. Its output of iron ore on the Australian assets grew by 20.2% compared to similar period in the previous year, to 48.316 mln. tons, on the Canadian assets – by 4.9%, to 4.245 mln. tons, and in Brazil – by 8.9 %, to 0.575 mln. tons. It should be noted that the Group achieved new record figures in quarterly output on the assets in Australia and Brazil. Altogether in the third quarter of this year, the Group produced over 53.1 mln. tons of IORM on its assets.

IORM Output by Rio Tinto Group, thousand tons.

Assets	2007, total	QI. 2008	QII. 2008	QIII. 2008	QIV. 2008	2008, total	Diffe- rence, %	2009 I Q.	Diffe- rence, %
Hamersley	112,112	29,082	34,583	35,147	26,245	125,057	11.5	27,338	-6.0
Robe River									
Pannawonica	25,489	6,811	6,680	7,102	4,456	25,049	-1.7	3,572	-47.6
West Angelas	26,023	6,753	6,928	6,067	5,449	25,198	-3.2	5,329	-21.1
IOC	13,229	3,609	4,090	4,245	3,886	15,830	19.7	3,156	-12.6
Corumba	1,777	508	519	575	430	2,032	14.4	401	-21.1
Total	178,630	46,763	52,800	53,136	40,466	193,166	8.1	39,797	-14.9

According Rio Tinto Group

But the aggravation of the situation on the world ferrous market forced the Group not only to review its investment initiatives but also to reduce the production of IORM on all its assets by 23.8 % against the third quarter. Altogether in the fourth quarter of 2008, the output of iron ore raw materials constituted 40.466 mln. tons

Nevertheless, upon the results of 2008, the Group had increased its IORM output by 8.1 % against the previous year of 2007 to almost 193.2 mln. tons. With that, the production growth occurred on account of the assets in Brazil, Canada and the Australian Hamersley Iron. The Australian assets of Robe River saw production cutback.

In the first quarter of 2009, IORM production on the Group's assets dropped against the first quarter of 2008 by 14.9 %, in line with the negative trends on the world ferrous market.

Rio Tinto is implementing an investment programme of \$5 bln. value in Western Australia, which will enable enhancing the IORM production capacities to 220 mln. tons/yr. The completion of the programme was expected in 2009. But already for the period until 2012 Rio Tinto Group intended to expand its ore production capacities in Pilbara, Western Australia, to 320 mln. t/yr.

By 2012, Rio Tinto had planned to be producing over 350 mln. tons of iron ore a year and in a longer-term perspective – up to 630 mln. t/yr. on account of the expansion of capacities on its assets in Australia and implementation of the Simandou project in Guinea.

The financial results of the largest mining companies upon the results of the past 2008, in spite of the deepening crisis in the fourth quarter of 2008 and shrinking production and sales, appeared to be quite positive. The revenue of Rio Tinto Group generally upon the results of 2008 has grown by 73.2 %, up to \$58.065 bln., following a surge of prices on raw materials, and EBITDA has increased by 60.3 %, up to \$22.317 bln. The net profit has risen by 49.7 % to make \$3.676 bln.

Naturally, the crisis couldn't fail to affect Rio Tinto, which was forced to get rid of some of its overseas assets, not only non-core ones.

Rio Tinto Group had planned to invest \$2.15 bln. into the expansion of its iron ore project Corumbá, Brazil. The investment programme implementation envisaged the growth of the mine's capacity more than sixfold – from 2 to 12.8 mln. t/yr. The commissioning of new ore mining facilities is expected in the fourth quarter of 2010. In addition, the Group intends already by the middle of 2009 to accomplish the feasibility study of the second order of capacity expansion for the Corumbá project (to 23.2 mln. t/yr.).

The total investments in the Corumbá project made by Rio Tinto Group since 2003 could amount to \$11 bln. But already at the present time the Group was forced to sell the Corumbá mine to Vale Group for \$750 mln. This was announced on January 30, 2009.

In 2008, BHP Billiton Group also enhanced the IORM output on its assets by 14.1 % against 2007 – up to 127.4 mln. tons. With that, in the fourth quarter, the Group couldn't boast of even the slightest growth of IORM output against the third quarter.

In 2007, its iron ore output was 111.583 mln. tons, by 3.8 % more on the 2006 level. The amount of ore exports at the end of 2007 was 110.516 mln. tons, by 3.554 mln. tons, or 1.7 %, more on 2006.

Overall by the results of 2008, the Group has enhanced its IORM sales by 17.3 %, up to 129.625 mln. tons. With that, the sales of lump ore have grown by 34.9 %, to 32.655 mln. tons, and those of iron ore fines – by 11.2 %, to 77.525 mln. tons.

BHP Billiton is carrying on with its investment programme. Rapid Growth Project 4 (RGP4), being implemented in Western Australia, is 90 % ready in terms of engineering works and 48 % ready in terms of construction works. It should be reminded that the project realization in association with Itochu Corp and Mitsui & Co started in 2007. The fulfillment of the projects will allow enhancing ore mining capacities by Western Australian Iron Ore by 26 mln. t/yr., to 155 mln. t/yr. The project commissioning is planned for the first half of 2010. The anticipated RGP5 will help bring the ore mining capacities up to more than 200 mln. t/yr. The investments in this project are estimated at \$4.8 bln. The end of the project is scheduled for the second half of 2011.

In addition, BHP Billiton Group holds 50 % shares in the Brazilian Samarco, which in 2008 completed the construction of the third pelletizing plant with the capacity of 7.6 mln. tons/yr. The completion of the pelletizing plant in Brazil enabled expanding the pellet production capacities of BHP Billiton up to 21.6 mln. tons/yr. The problem consists just in the fact that the fall of the demand for IORM worldwide has led to the shutdown of two pelletizing plants on Samarco's assets late in 2008.

Insufficient funding and limited demand for IORM by China at the end of 2008 have served a signal to a decrease in the number of projects for mining iron ore in Western Australia, where the number of new projects in 2009 will be cut down.

The Australian Fortescue Metals Group intended to postpone its long-term plans for the development of iron ore mining following the drop in the demand for ore by China and the expected fall of prices on IORM in the following financial year by approximately 20 %. Along with this, the Group planned to hold an intensive monitoring of the market situation. Nevertheless, the Group management are still hopeful of implementing their programme for the expansion of ore mining to 80 mln. t/yr in 2009/2010 financial year. The second order of capacity enhancement to 160 mln. t/yr. will also be realized, but in the timeframes realistic in terms of the changing world market situation.

Fortescue Metals Group's first year performance report (2008) indicated the production of 15.562 mln. tons and export of 13.162 mln. tons of iron ore. FMG's first exports of ore to end consumers were made in May of the previous year.

The Australian Mount Gibson Iron already back in January 2008 reported its intention to run an audit of investment projects and postpone their deadlines.

Brazil

In 2008, Brazil, like Australia, increased its IORM export. But the growth was considerably less than in Australia. In 2007, Brazil boosted the export of iron ore raw materials to the world market by 11.1 %, up to 269.448 mln. tons. In 2008, according to the data of SECEX, Brazil expanded the shipments of IORM to the world market by 4.5 %, to 281.683 mln. tons, compared to the previous year. Altogether, the Brazilian mining companies shipped IORM to 45 economies of the world.

With that, the supply of Brazilian IORM to China has reduced almost by 8.3 % compared to the previous year and constituted 96.4 mln. tons (105.03 mln. tons a year earlier). The share of China in the overall Brazilian export of IORM fell from 39 % in 2007, to 34.2 %. At the same time, there has been an increase in the share of Japan, Korea and Germany. China's main import from Brazil is nonsintered raw materials, which accounted for 91.7 % in the structure of shipments in 2008 (91.5 % a year earlier). The shipments of sintered raw materials to the Chinese market in 2008 went slightly over 8 mln. tons (vs almost 9 mln. tons in 2007).

In contrast to 2007, last year Brazil materially expanded its exports of IORM to the Asian economies, primarily to the Far East (Japan, Korea), and to the Middle East economies (Bahrain, Saudi Arabia, Qatar). There was a steep increase in the shipments of IORM to Singapore.

Japan has increased the import of Brazilian IORM by 14.6 %, to 35.77 mln. tons (31.22 mln. tons a year earlier) and Korea – by 25.2 %, to 12.925 mln. tons (10.321 mln. tons). The shipments of IORM to Bahrain reached nearly 8 mln. tons, which is more than four times higher than in the previous year (1.47 mln. tons), and Saudi Arabia – by almost 4.9 mln. tons (2.9 mln. tons). If in 2007, Singapore received just 165 thousand tons. of ore, then already in 2008 – it exceeded 3 mln. tons, including 2.9 mln. tons of nonsintered and 143.4 thousand tons. of sintered raw materials.

With a certain increase of IORM shipments to Germany, Belgium, Netherlands and Spain, Brazil has cut down its exports of IORM to Italy and France.

The shipments to Germany, which comes third in terms of imported Brazilian IORM, have grown by 5.3 %, to 25.58 mln. tons (24.28 mln. tons a year earlier). Along with that, the IORM shipments to Italy have reduced by 5.1 %, to 10.8 mln. tons, and to France – by 15.4 %, to 11.2 mln. tons

In the overall amount of IORM exported from Brazil in 2008, nearly 82.3 %, or 231.7 mln. tons, fell on nonsintered raw materials.

The majority of IORM export comes from the iron ore assets located in the economies of Minas Gerais, Pará and Espírito Santo. Brazilian key IORM supplier to the world market is Minas Gerais (over 50%).

The growth of IORM export shipments has occurred on account of increased supply from iron ore assets in the economies of Minas Gerais and Para.

In 2008, the major export of IORM from Brazil was carried out from Minas Gerais – 150.181 mln. tons (53.3 % of the overall export volume). Considerable export amounts were supplied from the state of Pará (79.3 mln. tons, or 28.2%) and Espírito Santo (40.887 mln. tons, or 14.5%). Thus, just these three economies exported 270.368 mln. tons, or 96.0%, of the total supply to the world market.

IORM Export from Brazil in 2007 and 2008, mln. tons

Economy	2008			2007			Diff. %	I Q. 2009	I Q. 2008	Diff. %
	Non-sintered raw materials	Sintered raw materials	Total	Non-sintered raw materials	Sintered raw materials	Total				
Total	231.693	49.990	281.683	219.397	50.051	269.448	4.5	57.140	62.173	-8.1
Including:										
China	88.322	8.035	96.357	96.054	8.972	105.026	-8.3	31.045	22.939	35.3
Japan	30.123	5.644	35.767	25.885	5.332	31.217	14.6	4.997	7.986	-37.4
Germany	21.259	4.316	25.575	19.859	4.422	24.281	5.3	1.559	5.711	-72.7
Korea	11.066	1.860	12.926	9.294	1.027	10.321	25.2	2.901	2.647	9.6
France	9.871	1.317	11.188	11.823	1.406	13.229	-15.4	0.367	2.175	-83.1
Italy	6.684	4.104	10.788	6.464	4.902	11.366	-5.1	1.217	5.711	-78.7
Belgium	8.011	0.207	8.218	7.890	0.155	8.046	2.1	0.044	1.904	-97.7
Bahrain	7.807	0.157	7.964	1.470	-	1.470	441.7	0.528	0.885	-40.3
Great Britain	6.915	0.592	7.507	6.070	0.623	6.693	12.2	1.607	1.770	-9.2

According to the data of SFT

But already at the beginning of 2009, Brazil reduced its IORM export. According to the data of SECEX, export shipments of IORM in January, 2009 constituted 17.515 mln. tons - by 7 mln. tons, or 28.6 %, less than in January 2008. Brazil scaled down its supply to the majority of economies, including China (by 25.7 %), Japan (by 38.9 %), Germany (by 58.3 %) etc. But the growth of shipments to Switzerland and Korea was noticeable (most likely, the shipments had been registered to trading companies).

In the first quarter of 2009, Brazil cut down its IORM exports against similar period of 2008 by 8.1 %. At the same time, IORM shipments to China and Korea increased and to other economies – fell. Shipments to other European economies, especially to Italy, Belgium and Germany, suffered a sharp cutback against the level of the 1st quarter of 2008. But there was a remarkable surge in the shipments to Switzerland, which in fact does not consume IORM. Shipments are most probably carried out through the trading companies of Switzerland, but the deliveries themselves are actually made to other European economies, including Italy and Germany.

The year 2008 was generally rather difficult for the world's leading iron ore company - Vale (former CVRD). Whereas at the beginning of last year the company was extending IORM production, then in the fourth quarter the world financial crisis led to a dramatic fall of IORM output. Upon the results of 2007, Vale expanded IORM output by 12 % against 2006, up to 295.933 mln. tons (264.152 mln. tons a year earlier).

In the first quarter 2008, the company expanded its IORM output. The output of iron ore by Southeastern System enhanced by 16.1 %, to 28.6 mln. tons, by Southern System – by 2.8 %, to 19.7 mln. tons, and by Carajás – by 12.2 %, to 24.2 mln. tons. Taking into account Samarco assets, the company's production of iron ore made up 74.5 mln. tons, which was by 10.6 % more on similar period in 2007.

In the second quarter of 2008, the Brazilian Vale hit another record in IORM production – 78.0 mln. tons. This allowed the Group, upon the results of the first half of 2008, to record its IORM output at 152.538 mln. tons, which by 9.643 mln. tons, or by 6.7%, exceeded the figures of the first half of 2007 – 142.895 mln. tons. The boost of IORM output was driven by the growing production in the mines of Carajás, Brucutu and Fazendão. Upon the results of 2008, the Group is capable of pushing IORM output on its assets to 300 mln. tons.

In the third quarter of 2008, Vale hit new record highs in the production and shipment of IORM. The Group made nearly 85.9 mln. tons of iron ore in July-September of the current year, which was 9.4 % more against the figures of similar period in the previous year. A certain decline was preserved in IORM output on the Group's assets located in Southern System (Itabira) and MBR. The largest growth of IORM output was on the assets in Carajas. The growth in the company's production of IORM in the third quarter of the current year, as compared to similar period of the previous year, was in excess of 5.7 mln. tons.

But already the fourth quarter saw a steep downfall of IORM output. On the one side, this was conditioned by the deepening world crisis and, consequently, with the shrinking demand for IORM, on the other, – by the requirement to the Chinese companies to mark up prices for iron ore. Naturally, all this has had a negative impact in the IORM production volumes, including iron ore pellets.

If after the nine months of 2008, Vale's IORM output reached 238.42 mln. tons, being 6.9 % more than the levels of similar period in the previous year, then already after the end of 2008 the overall production of iron ore fell by 0.9 % vs 2007. The Group's production of iron ore in the fourth quarter was just 61.214 mln. tons, being 26.5 % below the record third quarter. The fall in IORM output was registered in Minas Centrais, MBR, Minas do Oeste and Urucum.

Considering the production of IORM on Samarco assets, IORM output by Vale Group, upon the results of 2008, has declined by just 0.5 % and approximated 302 mln. tons.

The shrinkage of production upon the results of January-September of 2008 was noticed on the plants of Sao Luis and Itabasco. The results of the entire 2008 demonstrated a slight growth of pellets output, but only on Fabrica, and just by 0.4 % vs the 2007 level. But the growth

of iron ore pellets production was registered on the assets of Samarco - by 20.2 %. However, even there the pellets production dropped upon the results of the fourth quarter. And at the year-end two plants were shut down.

Iron Ore Output by Vale, mln. tons

Assets	2007	I Q. 2008	II Q. 2008	III Q. 2008	IV Q. 2008	2008	Diff., %	I Q. 2009	Diff., %
Itabira	46.710	10.865	11.682	11.553	7.749	41.849	-10.4%	5.983	-44.9
Mariana	33.135	9.009	8.987	10.501	7.653	36.150	9.1%	6.204	-31.1
Minas Centrais	33.936	8.753	9.880	11.132	7.664	37.429	10.3%	4.438	-49.3
Southeastern System, total	113.781	28.627	30.549	33.186	23.066	115.428	1.4%	16.625	-42.3
Southern System, total	89.337	19.717	22.120	23.025	15.599	80.461	-9.9%	9.851	-50.0
Carajas	92.815	24.199	23.239	26.751	22.306	96.495	5.2%	20.277	-16.2
Samarco	7.231	1.775	1.855	2.633	2.060	8.322	15.1%	0.106	-94.0
Total	303.163	74.487	78.050	85.884	63.274	301.696	-0.5%	46.859	-37.1
<i>Vale evaluation</i>									

Pellets Production by Vale, mln. tons

Assets	2007	I Q. 2008	II Q. 2008	III Q. 2008	IV Q. 2008	2008	Diff., %	I Q. 2009	Diff., %
Tubarão I, II	6.369	1.612	1.674	1.666	1.143	6.096	-4.3%	0.510	-68.4
Fabrica	4.148	1.079	1.030	1.091	0.965	4.165	0.4%	0.235	-78.2
Sao Luis	7.053	1.689	1.605	1.876	1.790	6.960	-1.3%	0.003	-99.8
Vargem Grande	0	0	0	0	0	0	0	0.004	0
Nibrasco	8.967	2.038	2.261	2.559	1.918	8.775	-2.1%	0.096	-95.3
Kobrasco	4.971	1.274	1.256	1.281	1.125	4.935	-0.7%	0.889	-30.2
Hispanobras	2.173	0.570	0.578	0.581	0.210	1.938	-10.8	0	-
Itabrasco	2.044	0.513	0.453	0.531	0.384	3.321	-17.3%	0	-
Samarco	7.130	1.579	2.301	2.654	2.038	8.572	20.2	1.148	-27.3
Total	44.825	10.849	11.595	12.748	9.572	44.762	-0.1	2.885	-73.4
<i>Vale evaluation</i>									

The rest pelletizing plants experienced production cutback, mainly due to the fall of pellets output in the fourth quarter of 2008.

The low demand for IORM early in 2009 resulted in the decision of Samarco to delay the commissioning of the two pelletizing plants shut down in November of the previous year in Ponta Ubu, state of Espírito Santo, until March 31, 2009. The company has hoped that the demand for iron ore pellets might recover at the end of the first and the beginning of the second quarters. The third pelletizing plant, which was commissioned in June, 2008, was planned to be shutdown for a three-week repair in February. However, already by March Samarco had been operating two pelletizing plants due to the lowering of warehouse stocks and the need to fulfill the contracts.

Upon the first quarter results, Vale has significantly reduced IORM output compared to the first quarter of 2008, pellets production suffering the largest decline.

Nevertheless, the Group can utilize its available cash reserves (\$10.3 bln.) to purchase new assets, i.a. for coal mining. At present, Vale is more interested in acquiring the rights for new iron ore deposits than in expanding iron ore production.

Iron ore pellets sales by Vale Group in the fourth quarter 2008 fell by 29.8 %, to 54.9 mln. tons.

Despite the negative influence of the global financial crisis, the Brazilian Vale received the record amount of net profit of \$13.2 bln. in 2008, which exceeds by 11.9% the figures of the previous year (\$11.8 bln).

The amount of the Group's net sales in 2008 was \$38.5 bln. (vs \$33.1 bln. in 2007). The growth of sales was largely driven by the increased realization of iron ore (46.2% of the overall sales volume) and iron ore pellets (11%). Along with this, affected by the global financial crisis, the Group's net profit according to the fourth quarter results was \$1.36 bln., lowering by 47 % against similar period of the previous year (\$2.57 bln), and the net sales volume was \$7.44 bln (decrease by 11.5%).

Vale Group's supply to the domestic market in 2008 equaled 44.8 mln. tons of iron ore, which was 15.9 % below the figures of the previous year. The supply of iron ore pellets to the domestic market dropped by 64.6 %, to 2.11 mln. tons

Already in January, 2009, Vale's President (Roger Agnelli) announced the Group's investment plans for 2009 - \$14 bln. But already in February he pointed out that in current circumstances it was going to be rather difficult to invest even \$11 bln. in the development, which were said likely to be put in the production development. The depreciation of the domestic currency against dollar and the decline of equipment prices may result in the cost reduction of outstanding projects.

On May 21, 2009, the Brazilian Vale announced that the Group Directors' Council had ratified a revised investment budgeted for 2009 at \$14.235 bln. This is especially connected with the reduction of projects implementation costs and production costs.

Vale Budget for 2009

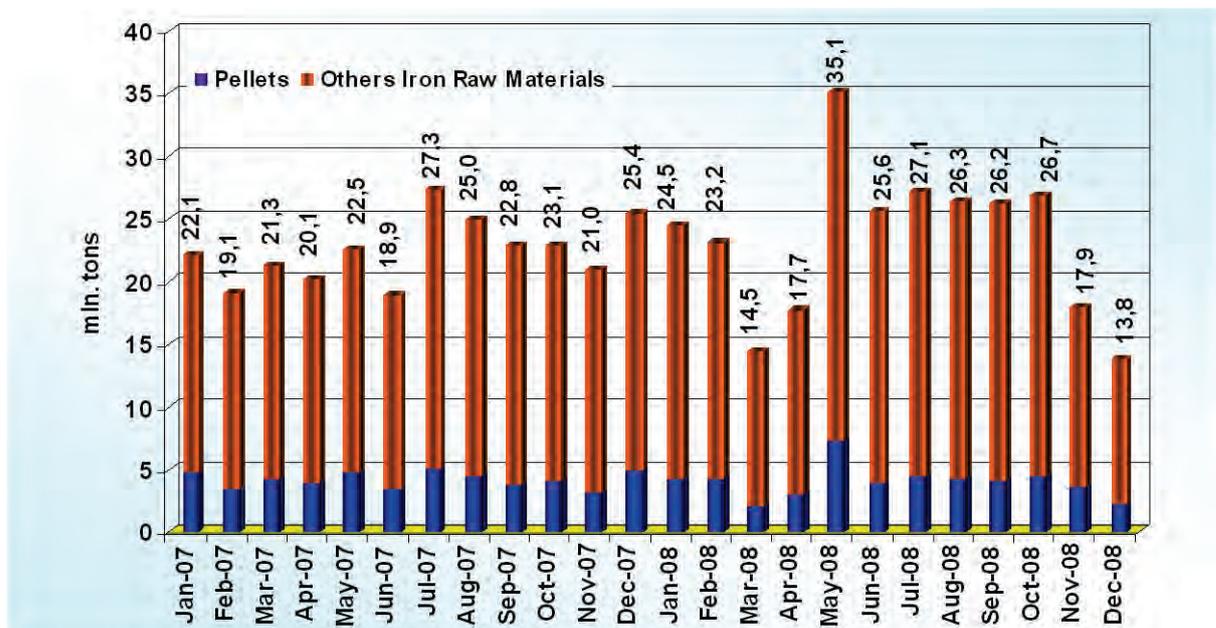
	Budget for 2009, mln. \$			Comment
	new	previous	Total project value	
Project Carajás, capacity 130 mln. t/yr.	455	798	2,478	Project implementation will help to enhance the project capacities of IORM production by 30 mln. t/yr. To be completed in the 1 half of 2011.
Capacity enhancement of Carajás by 10 mln. t/yr.	85	84	290	To be commissioned in the second quarter of 2009.
Carajás Serra Sul	233	675	11,297	Located in the southern part of Carajás, state of Pará. Capacity – 90 mln. t/yr. To be completed – 2 half of 2012.
Apolo	9	54	2,509	Project with the capacity of 24 mln. t/yr of iron ore is located in Southern System. Expected to be commissioned in 2013. Must be approved by the Group Directors' Council.
Southeastern Corridor	107	163	553	Expansion of throughput capacity of the railway connection Vitória a Minas Railroad (EFVM) and port Tubarão.
Tubarão VIII	230	527	636	The pelletizing plant is to be built at the port of Tubarão, state of Espírito Santo. The plant's

				capacity will make up 7.5 mln. t/yr. To be completed in the 2 half of 2010.
Oman	353	458	1,356	Construction of a pelletizing plant in Sohar Industrial district, Oman. The plant's capacity is 9 mln. t/yr. of pellets for direct reduction process. Commissioning in the 2 half of 2010.
Litorânea Sul	-	107	935	Building of a railway road 165 km long - Litorânea Sul Railroad – to the port of Ubu , state of Espírito Santo. To be completed in the 1 half of 2012. The project is subject to approval by the Directors' Council.
Other	830	1,313	n/a	
Total	2,302	4,179	n/a	
Non-ferrous mining	3,109	4,785	n/a	Expansion of capacities in the mining and production of nickel, copper, bauxites, argil etc.
Coal	578	808	n/a	Development of coal deposits in Mozambique and Australia.
Power industry	630	822	n/a	
Other projects	2,416	3,641	n/a	
Total	9,035	14,235	n/a	

Source: Vale Group

According to the data of Sinterbase, Vale's share in the 2008 overall production of iron ore in Brazil was 79 %, that of CSN – 7.4 %, MMX/Anglo American – 3 %. Another 10.6 % of iron ore output fell on other producers, including ArcelorMittal Longs, Gerdau and Usiminas. According to Sinterbase estimations, the 2008 production of iron ore pellets in Brazil constituted 69 mln. tons, which was 27 % higher than in the previous year (54 mln. tons).

Export of IORM from Brazil, mln. tons. (Customs data)



India

In 2008, India remarkably expanded its iron ore export compared to the previous year - to 125.6 mln. tons (according to CRU), or by 38 %. The major consumer of Indian iron ore is China. In 2008, this economy received 112.3 mln. tons of IORM. According to the Chinese customs statistics, IORM shipments from India over 2008 constituted 91.1 mln. tons, which was 20.5 % higher than in the previous year.

At the same time, the growth occurred mainly on account of shipments in the first, second and fourth quarters. In the first quarter of 2008, India scaled up IORM supply to China – by 23.2 %, to almost 25.7 mln. tons. There was a certain increase of IORM supply to Japan – 3.6 mln. tons. Over the first quarter of 2008, IORM supply from India to the world market constituted 64 mln. tons, including to China – 56.7 mln. tons. However, in the third quarter, IORM export from India started to go down. This was largely the result of the falling IORM exports to China. In the third quarter, the shipments of IORM to China dropped to the level of about 16 mln. tons.

Upon the results of January-September, 2008, the shipments to this economy constituted 73.1 mln. tons of IORM. Altogether, upon the results of the three quarters of 2008, the Indian ore exports to the world market constituted about 81.2 mln. tons.

In the fourth quarter, India was capable of another increase in ore exports. Mainly this became possible due to the growth of demand in China in December. According to CRU, in October-December of 2008, India exported the total of 44.4 mln. tons of IORM, mainly to China.

Public iron ore companies in India are delivering the major part of their output under long-terms contracts, mainly to Indian metallurgical companies, in particular Essar Steel, Ispat Industries and Jindal Vijayanagar Steel, with the focus on the benchmark prices of the world's leading mining companies.

NMDC planned to negotiate the price levels on iron ore under long-term contracts in April.

Despite the global financial crisis, in the next financial year, which will end in March 2010, NMDC intends to invest 12 bln. rupees (\$239 mln.) in the expansion of production, including costs on the development of metal works and two pelletizing plants.

The price level on the spot market generally tended to decline in the fourth quarter of 2008 and first quarter of 2009. By March, the prices on Indian ore with 65 % iron content and with shipment to China, dropped to the level of \$63-65/t. against \$100-110/t. in July of the previous year. However, it was shortly followed by an upswing in price levels, which was partially connected with the rise of freight rates.

The Indian government approved of the plans of Indian iron ore companies for signing long-term contracts for supply of IORM with Chinese metallurgical companies. Indian and Chinese companies have already had negotiations on signing long-term contracts, specifically the Indian MMTC Ltd., which is the economy's leader in ore export.

Chinese metallurgical companies have been considering the signature of long-term contracts, but the high level of spot prices that exceeded the contract prices, had served as an obstacle. However, the level of spot prices on Indian ore at the end of 2008 and in the first quarter of 2009 dropped below the level of contract prices.

At present, the Indian government is limiting export just by high-quality iron ore.

At the same time, India continues to experience the growth in IORM consumption, which is driven by the rising domestic production of pig iron and steel. Although by the results of 2008, the growth of domestic pig iron and steel output was just 0.2 %, to 28.9 mln. tons, and that of steel – 3.7 %, to 55.05 mln. tons. Significant amounts of ore are utilized domestically in the production of metallized raw materials, which rose by 11.6 % in the previous year and reached 20.15 mln. tons (vs 18.06 mln. tons a year earlier).

The forecast growth of ferrous output in the coming year is likely to bring about the cutdown in exports of Indian IORM to the world market. Nevertheless, Indian mining companies believe that they will be able to boost their IORM output to a sufficient degree in order to satisfy

the domestic market demand and maintain their export potential. But for the most part, the solution of this problem will face the necessity of directing considerable investment amounts into the modernization and expansion of throughput capacity of domestic ports.

The leading metallurgical companies of India keep expressing grave concern over the growth of IORM export from the economy. According to the opinion of Indian metallurgical companies, only the reduction of IORM export can cover the demand of the growing domestic metallurgical industry for raw materials, all the more so considering the production prospects of 180-200 mln. tons of steel by 2020. In particular, this view is expressed by the management of the largest private domestic metallurgical company - Tata Steel. The possible growth of ferrous metallurgy to forecast volumes also seems doubtful. On the one side, this is connected with the current problems in the world ferrous industry, on the other – with the necessity to invest substantially into the infrastructure development apart from financing metallurgical companies proper. Account must also be taken of the fact that amid the financial crisis many leading metallurgical companies are planning to review their investment programmes, which may also affect the plans for construction of a number of metallurgical enterprises in India, with participation of foreign investors. Along with this, a number of Chinese companies continue to carry out the construction of enterprises and separate units, specifically Tata Steel.

In India, intensive debates were taking place on the possibility of taking measures to restrict IORM export from the economy. It was expected to result in the higher export duties on IORM. The Indian SAIL Group has called upon the domestic Ministry of Finance to raise the export duty on iron ore by additional 5 % (10% earlier). But the situation on the world ferrous market has deteriorated dramatically. The demand for Indian ore in China dropped, and instead of raising export duties in the previous year, it was decided to cut duties on exported ore.

The introduction of a duty is aimed at protecting the interests of Indian metallurgical companies due to the plans of expanding steel production capacities in India until 2020.

Along with this, Indian businesses, in fact, just like many other large metallurgical companies of the world, are actively considering the possibility of their participation in various foreign iron ore projects. Investments are also being expended to the construction of new pelletizing facilities.

The Indian JSW Steel Ltd. intended to take over one of iron ore deposits in Latin America, which would allow it to cover its growing demand for IORM.

Russia

In 2007, Russian iron ore enterprises expanded the production of commercial iron ore compared to similar period of the previous year, which was caused both by the growth of the domestic demand for it and the increase of exports.

According to the Federal Agency of State Statistics, in 2007 the mining of crude iron ore in Russia rose by 2 % against 2006 and reached 279.7 mln. tons (vs 274.2 mln. tons a year earlier).

The negative trends on the world ferrous market also affected the situation in Russia. Already by the results of September, 2008, there has been a decline in the production of commercial iron ore, pig iron steel and mill bars as compared to the previous month. But in the fourth quarter of 2008 the domestic production of ferrous metals suffered a heavy setback. The leading metallurgical enterprises were forced to stop blast furnaces or slow them down, decommission steel melting and rolling units. Naturally, this entailed a fall in the demand for IORM. The decline in the prices on IORM on the spot market as well as shrinking demand for raw materials from foreign consumers, which had also been reducing the production of pig iron, steel and mill bars, has led to a fall of IORM exports from Russia in the last quarter of 2008.

As a result, in 2008 the production of commercial iron ore in Russia, according to the Federal Agency of State Statistics, fell by 4.7 % and constituted 99.9 mln. tons

Along with that, already by the results of January-September, 2008, Russia has registered growth in the production of pig iron, steel and commercial iron ore, though not very significant.

But following this the domestic IORM output nosedived. The output of commercial iron ore in the fourth quarter of 2008 was 19.1 mln. tons, noticeably below the levels of the previous quarters – 27.2 mln. tons in the third quarter, 27.3 mln. tons in the second quarter and 26.3 mln. tons in the first quarter. With that, December saw the lowest level of commercial iron ore production – 4.89 mln. tons, 47.1 % below the maximum levels of October, 2008.

Upon the results of 2008, the majority of leading domestic iron ore enterprises have cut down on their output of commercial iron ore. Simultaneously, there was a slight growth in the production of commercial iron ore at “KMARuda” Complex” JSC (by 2.3 %, to 2.1 mln. tons), “Olkon” JSC (by 0.5 %, to 4.7 mln. tons) and “Kovdorsky Mining and Processing Complex” JSC (by 3.5 %, to 5.4 mln. tons). A slight production growth was noticed among mining plants with moderate output rates.

The most significant reduction of commercial iron ore output was registered at “Lebedinsky Mining and Processing Complex” JSC (by 7.1 %, to 19.7 mln. tons), “Mikhailovsky MPC” JSC (by 8.7 %, to 18.2 mln. tons), “Karelian Pellet” JSC (by 5.6 %, to 9.8 mln. tons), “Kachkanarsky MPC “Vanadiy”” JSC (by 8.7 %, to 8.6 mln. tons) and “VGOK” JSC (by 11.5 %, to 1.5 mln. tons).

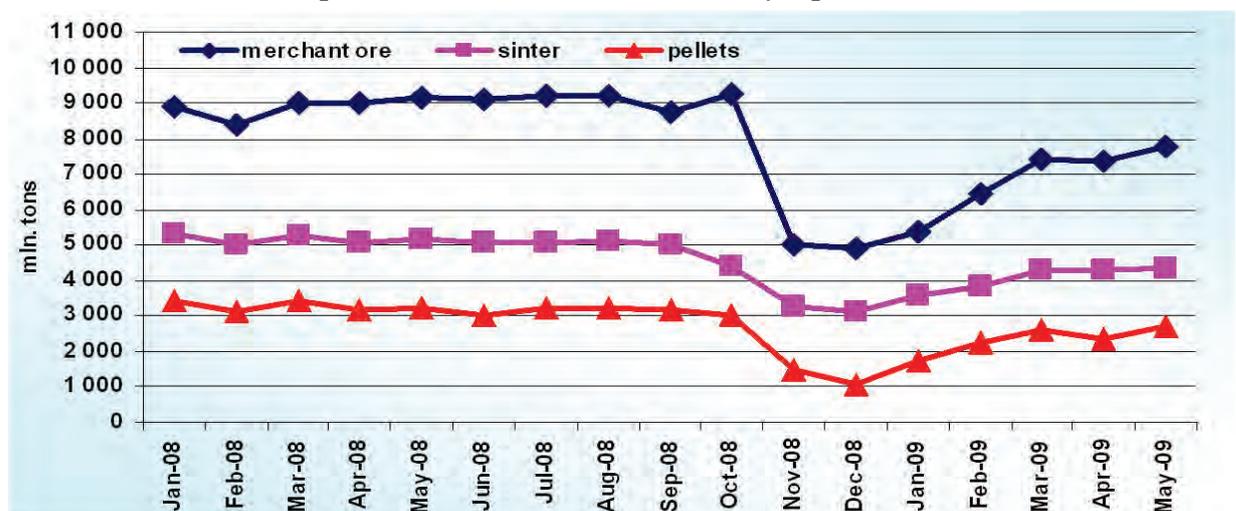
The drop in the production of commercial iron ore on MPCs was particularly great in November-December, 2008. Thus, the production of commercial ore by “Lebedinsky MPC” JSC in November was just 921 thousand tons., more than twice as little as the October level (1.98 mln. tons). In some mining enterprises, the November decline in commercial ore output exceeded 60 % against October.

It is natural that the cutback of pig iron output by Russian metallurgical enterprises affected primarily the mining plants, which supply IORM to the “free market”, i.e. the plants of Metalloinvest.

Whereas just in January-September, 2008 the shipments of IORM by Russian mining plants grew against similar period of the previous year and constituted 74.7 mln. tons (74.1 mln. tons a year earlier), the fourth quarter witnessed a steep plunge of supply over November and December. In November alone, the supply of IORM constituted just 3.65 mln. tons, almost 3.2 mln. tons below the October level. December brought a certain growth of shipments, but it occurred mainly on account of IORM deliveries from warehouses.

The situation was somewhat alleviated in January-February, 2009. But the IORM production growth in January-February, 2009 was relatively small as the domestic output of pig iron rose by approximately 1 mln. tons in February compared to the minimum production level in December, 2008. Altogether upon the results of January-April, 2009, Russia produced 26.57 mln. tons of commercial iron ore , 24.7 % less than in similar period of the previous year.

IORM Output in Russia in 2008 and January-April, 2009 (Rusmet)



In 2008, as compared to 2007, the structure of shipments was characterized by a slight decline in the supply of sintering ore, blast-furnace ore and iron ore pellets, with a rise in iron ore concentrate and a slight growth of agglomerate.

The share of the leading 8 iron ore enterprises in the overall domestic production of commercial iron ore, upon the results of 2007, has fallen slightly against 2006 and made up about 85.15 %. In 2008, the share of the leading enterprises in the overall production of commercial iron ore was 84.5%.

The mineral resource base of Russia can entirely provide the domestic metallurgical industry with IORM. However, Russia traditionally imports iron ore raw materials (concentrate and pellets) from Kazakhstan, mainly for the purposes of “MMK” JSC. But amid the shrinking domestic output of pig iron and steel, IORM supply from Kazakhstan in the fourth quarter of this year have gone down, largely on account of the reduced imports of iron ore pellets. Already in October, “MMK” JSC cut the import of Kazakh IORM.

In 2007, Kazakhstan supplied to Russia over 12.6 mln. tons of IORM (10.6 mln. tons a year earlier), including 5.7 mln. tons of pellets and 6.9 mln. tons of concentrate. With that, almost all iron ore raw materials from Kazakhstan were shipped to “MMK” JSC (99.9 %, or 12.57 mln. tons).

In January-September, 2008, IORM shipments from Kazakhstan to Russia constituted almost 9.27 mln. tons, including 4.24 mln. tons of pellets (8.9 mln. tons of IORM, including 4.2 mln. tons of pellets, a year earlier). And already upon the results of 2008, the shipments of Kazakh IORM to the Russian market constituted 10.46 mln. tons, including 4.46 mln. tons of pellets. As can be seen, in the last quarter of 2008 the shipments of IORM from Kazakhstan to Russia constituted just about 1.2 mln. tons. The fall of supply in the 4 quarter of 2008 is connected with the cutback of pig iron output at “MMK” JSC in this period. In January-April, 2009, the shipments of iron ore concentrate from Kazakhstan constituted just 1.88 mln. tons, including 1.75 mln. tons of concentrate.

Production of Commercial Iron Ore in Russia, thousand tons.

Enterprises	2005	2006	2007	2008	Diff., %	January-April, 2009
Russia, total	95,098.8	101,994.9	104,659.0	99,902.1	-4.7	26,572.2
Including:						
“KMARuda” Complex” JSC	1,850.9	1,850.9	2,057.3	2,103.9	2.3	753.5
“Lebedinsky MPC” JSC	20,563.5	21,012.4	21,006.8	19,732.3	-6.1	4,455
“Stoylensky MPC” JSC	11,891.0	12,682.0	13,405.2	13,154	-1.9	3,562.8
“Mikhailovsky MPC” JSC	16,901.9	20,071.0	19,970.6	18,234	-8.7	4,819.9
“Karelian Pellet” JSC	9,123.4	9,964.2	10,422	9,837	-5.6	2,222.6
“Olkon” JSC	4,023.7	4,473.7	4,650.9	4,675.2	0.5	1,542.5
“Kovdorsky MPC” JSC	5,793.4	5,613.2	5,241.4	5,422.9	3.5	1,589.6
“Kachkanarsky MPC “Vanadiy”” JSC	8,648.9	9,430.6	9,455.3	8,636.2	-8.7	2,594.1
“Korshunovsky MPC” JSC	4,521.5	4,995.4	4,963.2	4,699.8	-5.3	1,184.3

According to the data of the Federal Agency of State Statistics, Rudprom

IORM Type-Based Supply by the Mining Plants of Russia, thousand tons.

Product	2004	2005	2006	2007	2008	Diff., %	January
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							-April, 2009
Total	91,771	91,405	97,305	99,179	89,392	-9.9	17,685
Including:							
Sintering ore	3,415	1,961	3,209	3,466	3,045	-12.1	627
Blast-furnace ore	512	502	738	614	520	-15.3	171
Iron ore concentrate	52,117	52,752	54,388	55,713	53,026	-4.8	11,449
Pellets	29,981	30,754	33,579	33,789	27,541	-18.5	4,174
Agglomerate	5,747	5,436	5,391	5,597	5,260	-6.0	1,236

According to the data of the Federal Agency of State Statistics, Rudprom

Upon the results of 2008, the supply of IORM to Russian metallurgical enterprises constituted 67.2 mln. tons, significantly below the levels of 2007 (almost 72.6 mln. tons). With that, the shipments of pellets constituted 18.3 mln. tons (20.8 mln. tons a year earlier), concentrate – 40.7 mln. tons (42.8 mln. tons), agglomerate 5.26 mln. tons (5.6 mln. tons).

In January-April, 2009, the shipments of IORM to Russian metallurgical enterprises constituted almost 17.7 mln. tons (vs 24.53 mln. tons a year earlier).

In 2007, IORM supply from Russia to the world market constituted almost 25.3 mln. tons, which was remarkably (by 11.8 %) higher than the levels of the previous year (22.64 mln. tons).

In 2008, Russian MPCs reduced supply to 21.2 mln. tons. It was 16 % less than in the previous year. The main cutdown of export occurred in the fourth quarter of 2008.

In 2008, the overall export of concentrate reduced by 1 %, to 11.37 mln. tons (vs 11.51 mln. tons a year earlier), pellets – by 29 %, to 9.24 mln. tons (almost 13 mln. tons), and that of sintering ore – by 22 %, to 0.8 mln. tons (almost 1 mln. tons).

Just like in the previous years, in 2008 the major deliveries of IORM were to the East European market. In 2007, IORM deliveries to the East European economies constituted 13.4 mln. tons, slightly (by 200 thousand tons.) over the level of 2006.

In 2008, deliveries of IORM to this region constituted 9.56 mln. tons. And the share of the East European economies in the overall export of IORM from Russia was preserved. Whereas in 2007 the share of the region in the overall export of IORM from Russia constituted 53.1 % (vs 58 % in 2006), already in 2008 it was 45.1 %. With that, there was noticeably growth of IORM supply to China - from 5.7 mln. tons in 2007 to 6.18 mln. tons in 2008. It should be mentioned that while in January-September, 2008, Russia was providing the Chinese market with just iron ore concentrate, then already in the fourth quarter export included 340 thousand tons. of iron ore pellets.

In 2008, Russia cut down on its IORM supply to Ukraine. Upon the previous year's results, supply to Ukraine in the past year constituted almost 1.9 mln. tons (vs almost 3.1 mln. tons a year earlier). But late in 2008 there were no shipments of Russian IORM to Ukraine. This was connected with the drop in the ferrous output in Ukraine.

IORM exports to Kazakhstan in 2008 constituted 1.43 mln. tons, being considerably beyond similar period of the previous year (1.02 mln. tons). But there were no IORM shipments to Kazakhstan in the fourth quarter. IORM shipments to Kazakhstan in 2008 were carried out by Lebedinsky, Mikhailovsky and Kachkanarsky MPCs. Lebedinsky and Mikhailovsky MPCs supply iron ore pellets and concentrate to the assets of ArcelorMittal Group.

In January-April, 2009, Russia exported 6.661 mln. tons of IORM, including 3.665 mln. tons of concentrate and 2.896 mln. tons of pellets. In January-April, 2008, Russia supplied to the world market almost 7.7 mln. tons of IORM, including 3.68 mln. tons of concentrate and 3.74 mln. tons of pellets.

The key Russian IORM exporters, including to the East European economies, are «Lebedinsky MPC» JSC and «Mikhailovsky MPC» JSC.

In 2007, these MPCs accounted for almost 73 % (70.6 % a year earlier) in the structure of the Russian IORM exports. In 2008, Lebedinsky and Mikhailovsky MPCs exported 13.7 mln. tons of IORM, including 6.8 mln. tons of pellets, being below the level of similar period of the previous year – 18.4 mln. tons (9.95 mln. tons). In 2008, the share of these MPCs in the overall Russian exports of IORM was 64.7 %. The shrinking of export was caused by the drop in supply from Mikhailovsky and Lebedinsky MPCs, the last increasing its output of metallized briquettes and their export to the world market.

The majority of large metallurgical enterprises utilizing IORM mainly cover their demand for them on account of their own iron ore assets (“Severstal”, MC “Metalloinvest” companies, FMC, “Eurasholding” companies), although “ZCMK” JSC (included in Eurasholding) and FMC purchase substantial IORM volumes from Mikhailovsky MPC.

In April, “Mechel” Group registered its subsidiary mining plant “Mechel Mining” with the charter capital of 122 bln. rubles.

“MMK” JSC, “Tulachermet” JSC, “Svobondy Sokol” MP and Kosogorsky MP are forced to procure large volumes of IORM from abroad.

“MMK” JSC is taking every effort to expand its iron ore base and continues to look for opportunities of purchasing iron ore deposits, including abroad, as well as operating assets. But it is clear that the implementation of such a large investment project as the building of Prioskolsky MPC may be postponed for a while.

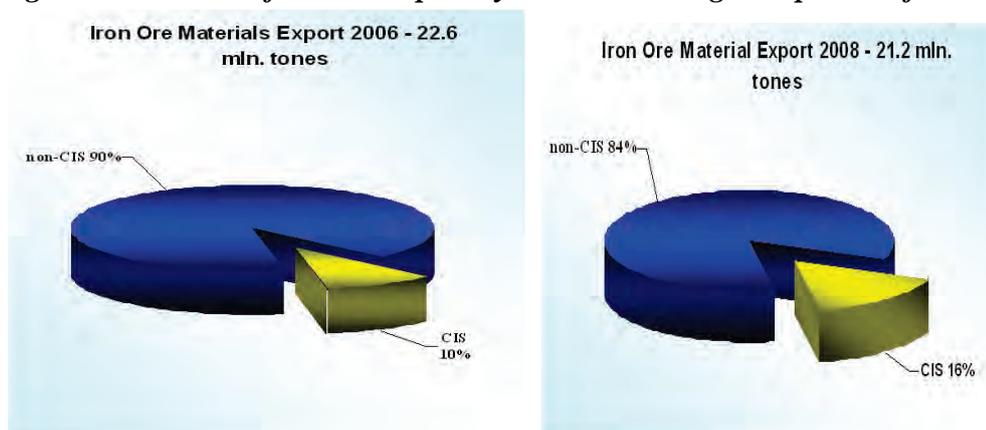
In particular, the works related to the project of building Prioskolsky MPC in the Starooskolsky urban district were announced to be frozen indefinitely. It should be reminded that MMK estimates the investments in the construction of Prioskolsky MPC within €2.5 bln. The largest part of these funds should have been obtained via credits. Until the outbreak of financial crisis, MML had planned to complete the elaboration of the required technical documents by December, and start the building of MPC in 2009. The MPC was planned to reach project capacity by 2016, which would allow covering the complex’ demand for IORM by 80%.

Clearly, amid the financial crisis there is no possibility to invest in the development of iron ore base. Hence, now it is obvious that in reality MMK will be able to commission Prioskolsky MPC significantly later than was expected.

Similar situation with investments occur in other companies, including “KMARuda” Complex” JSC, which had planned to expand its crude iron ore mining capacities to the level of 11 mln. t/yr. and the output of iron ore concentrate to 5 mln. t/yr.

Over the last months of 2008, the ore-mining plants of Russia have been forced to stop their main facilities. The commissioning of some units that had been stopped at the end of 2008 was done already at the beginning of the current year.

Regional Structure of IORM Export by the Ore-Mining Companies of Russia



Source: Rusmet

Ukraine

Ukrainian iron-mining companies, like their Russian counterparts, have reduced IORM production in 2009 as compared with volumes of 2008. To a large degree such was the effect of shrinking production rates of pig iron in the economy coupled with declining export.

Whereas in January-September of 2008 Ukrainian mining and concentration companies (GOKs) were operating successfully, in the fourth quarter they, like many mining companies the world over, went have had some tough luck. In January-September of 2008 output of merchantable ore including that of ore concentrate in Ukraine had increased by 5,1% (or almost by 2,96 mln. tons and amounted to 60,8 mln. tons) compared with the same period in 2007. Meanwhile, lump ore production retained volumes of the previous year and reached 12,2 mln. tons. At the same time domestic production of ore concentrate grew by 6,4% and totaled 48,55 mln. tons (against 45,62 mln. tons in the previous year). Increase of pellets output was insignificant – by 3,3% to a level of 17,43 mln. tons, while that of agglomerate decreased by 2,8% to a volume of 36,2 mln. tons.

Yet September showed a substantial 5,7% drop in merchantable ore production compared with 6,3 mln. tons in August. Along with this ore concentrate manufacturing shrunk by 8,7%. Output of agglomerate had dropped quite tangibly (by 15,7%). Still, decrease in pellet production was not substantial – only by 0,5%. As early as September basically all of Ukraine's mining and concentration companies cut their ore concentrate production compared with August levels. Decrease in pellet production was stipulated by TZGOK (Central mining and concentration company) drop of manufacturing volumes by 21,3%.

In the fourth quarter decrease of ferrous metals output in Ukraine as well as slowdown of IORM sales around the world entailed a sharp decrease in IORM production in Ukraine.

On top of that in the 4th quarter of 2008 enterprises that consume raw materials would refuse to receive IORM on terms of contracts, signed earlier. Mining and concentration companies were forced to cut IORM production or to suspend their work at all. And it was only due to marketing efforts of the mining companies and a certain growth of the pig iron output in the economy what allowed them to improve the situation some in the December' 08 as well as in January-February of the current year. It's clear that this is a shaky improvement.

As a result of this, in 2008 IORM manufacturing in the economy declined by 7,1% against volumes of 2007 (that is almost 5,5 mln. tons) and amounted to 72,11 mln. tons. Still, ore concentrate output has shrunk by 6,8% and totaled 57,1 mln. tons (it was 61,26 mln. tons a year earlier). All mining companies posted drop in their ore concentrate production, and the sharpest decline took place at UGOK ((by 13,8%), at INGOK (by 7,5%), and also at assets of the Arselor Mittal Krivoy Rog (by 8,2%).

Production of iron ore pellets had decreased by 8,8% and amounted to 20,4 mln. tons (against 22,4 mln. tons a year earlier). At that only Poltavsky GOK managed to sustain minimal losses with output decreased only by 0,6%. SevGOK and TSGOK both endured a more substantial drop of production by 14,9% and by 12,6% accordingly. Manufacturing of pellets at SevGOK in November totaled 9 thousand tons, while at TSGOK – 36,9 thousand tons.

Lump ore output contracted by 8% to a little over 15 mln. tons with only Zaporozhsky GOK having managed to boost its lump ore production (by 2,3%).

The most substantial drop manifested itself in manufacturing of agglomerate - by 13,5% down to 43 mln. tons (against 49,8 mln. tons in the previous year). All metallurgical companies, including that of UGOK, have reduced their agglomerate output volumes. So, at Arselor Mittal Krivoy Rog agglomerate production was cut by 19,7%. What's more, in December UGOK produced no agglomerate at all.

Leading mining businesses had also decreased IORM production based on results of the end of 2008. In 2008, as compared with 2007, SevGOK slashed production of the iron ore concentrate by 5,9% (by 0,794 mln. tons) to a volume of 12,602 mln. tons, and production of the iron ore pellets – by 14,87% (that is by 1,646 mln. tons) down to 9,42 mln. tons.

Thanks to selling IORM at new markets, in December the GOK was able to increase its output more than 5 times (compared with November) and reach a volume of 790,1 th.tons. It has to be noted that in December the enterprise put out only 155 thousand tons of concentrate and mere 9 thousand tons of iron ore pellets.

In the beginning of 2009 Ukraine has boosted its IORM production against volumes of December of 2008. In general, in January-April of 2009 IORM production in Ukraine has been reduced by 30,4% or by 8,143 mln. tons, as compared with January-April of 2008, and amounted to 18,616 mln. tons.

Gradually, production lines and equipment previously halted in Ukrainian GOKs is being put back in operation, which enables them to boost production of merchantable IORM. So, in February Poltavsky GOK put in operation the third indurating machine. When yet another machine, originally scheduled to be commissioned in the first half of March, will be put in operation remains unclear.

Ukraine remains a major IORM exporting economy, although as such it lags behind Australia, Brazil, and India.

In 2007 IORM exports from Ukraine grew by 2,6% (that is almost by 530 thousand tons) as compared with the previous year and totaled 20,748 mln. tons of RM worth \$925,50 million. Traditionally, Ukraine's export structure for IORM is geared towards shipping main volumes to the Eastern Europe economies, plus Austria.

In 2008 IORM shipments from Ukraine to the global market grew to a level of almost 22,8 mln. tons. It's worth mentioning that it had also substantially increased exports of IORM to China. Mainly, Ukraine exports iron ore concentrate; meanwhile the economy's export of pellets has shown some slowdown trend lately.

As far as IORM import into the economy is concerned, it had been quite limited, and had further decreased in 2008, especially in the fourth quarter. By the results of 2008, imports have declined by 17,6% to the level of 613,3 thousand tons. All in all, IORM imports to Ukraine in 2008 totaled almost 2,87 mln. tons (it was about 3,5 mln. tons in 2007) and it is true of imports of concentrate and pellets alike.

Iron Ore Exports from Ukraine

Production/Economy	2005		2006		2007		2008	
	th.tons	\$ mln.						
Iron Ore, in total	19,472.49	937.63	20,218.41	803.44	20,748.07	925.50	22,778.79	1,989.81
- Non-agglomerated ore, in total	10,318.58	376.46	11,559.16	366.83	11,938.00	421.69	14,033.47	1,127.50
Including:								
Poland	2,899.50	101.27	3,026.87	89.60	2,894.74	106.03	3,336.52	258.02
Czechoslovakia	3,270.34	117.09	3,017.00	96.3	3,461.19	123.28	3,577.80	311.66
Slovakia	2,052.92	82.29	2,431.15	81.51	2,070.14	74.65	1,679.51	153.09
Serbia	701.37	26.97	797.8	24.82	506.65	17.36	620.95	50.76
Romania	150.78	4.16	781.26	25.40	501.51	15.76	200.05	12.00
China	289.33	9.35	512.79	17.28	1,063.04	39.59	2,930.15	203.57
Hungary	411.49	14.76	408.83	12.77	364.66	11.27	440.98	45.78
Austria	240.48	7.51	380.96	11.27	598.30	16.02	701.19	48.61
Bulgaria	172.47	6.73	114.40	3.89	166.70	5.33	45.73	2.34
- Agglomerated ore, in total	9,153.91	561.17	8,659.25	436.61	8,810.07	503.81	8,745.32	862.31
Including:								
Austria	2,378.40	129.60	2,128.03	110.09	2,289.39	129.76	2,463.11	226.05
Slovakia	1,290.60	88.26	1,540.50	75.83	1,170.76	67.72	961.70	93.09
China	1,025.66	63.27	1,423.95	73.11	1,640.35	91.60	1,733.30	150.46
Serbia	754.91	49.76	859.47	45.10	1,004.17	56.70	1,138.49	132.48
Czechoslovakia	546.38	34.83	808.30	42.07	706.82	40.86	757.93	73.80

Romania	335.63	21.72	601.76	28.42	221.05	10.79	-	-
Turkey	30.08	2.30	548.68	24.77	675.05	38.09	365.65	45.23
Poland	170.11	9.13	309.07	14.58	509.64	30.92	722.18	76.76
Bulgaria	335.14	20,70	268.16	13.85	299.26	17.63	144.61	11.37

Source: Metal Courier, Customs clearance

USA

North American metallurgical companies meet their demand in IORM mainly through its extraction and production; while IORM export exceed import to a certain extent.

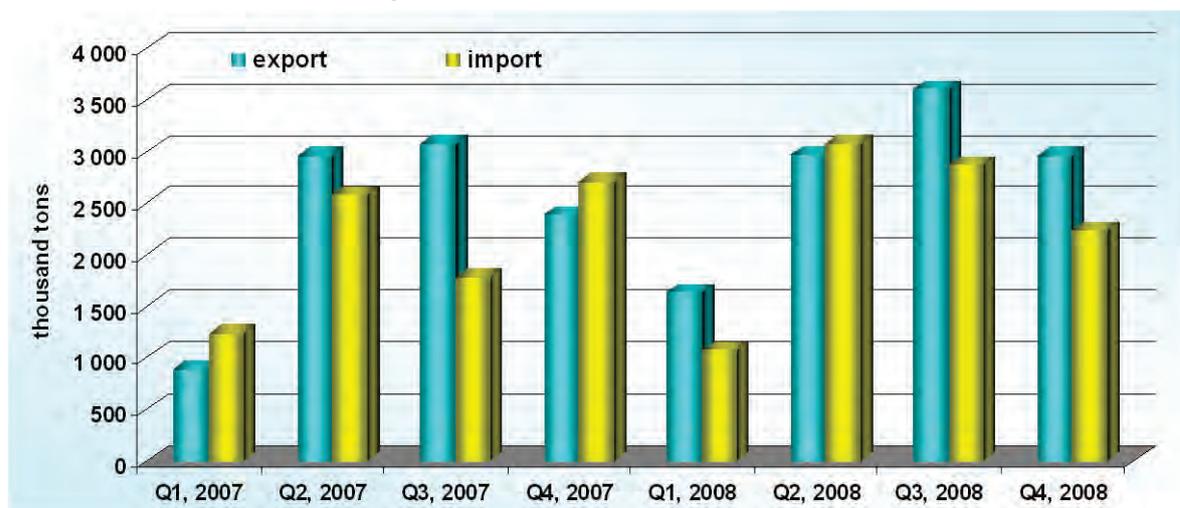
According to the USA Dept. of Commerce, Bureau of Census, IORM export from USA had increased in 2007 by 13,1% (by 1,076 mln. tons) compared with volumes of 2006, and reached 9,298 mln. tons. Most of IORM exported from the US is shipped to Canada – 7,344 mln. tons (12,2%). USA also send IORM to China – 1,13 mln. tons (12,2%), to Algeria – 0,57 mln. tons (6,1%), to Mexico – 0,138 mln. tons (1,5%), and to Romania – 0,087 mln. tons (0,9%). Besides, some small volumes of IORM used to be shipped to Japan, Peru, Columbia, Brazil, and to other economies. It's worth noticing that there is a significant increase in IORM deliveries from USA into China –over 1000% as compared with 2006.

Canada and Brazil, in turn, are the two biggest IORM suppliers to the US market. In 2007 IORM deliveries to the American market went down by 19,7% against the previous year and totaled 9,4 mln. tons. Also, Brazil, Canada, and Chile as main suppliers to the US market had decreased their shipment volumes substantially. In 2007, Canada and Brazil jointly accounted for 93% in the total export volume of IORM sent to the USA.

In the first half-year of 2008 USA have supplied the world market with approximately 4,6 mln. tons of IORM. The biggest bulk of this export consisted of iron ore pellets, which are mainly dispatched to Canada (82,8% of the total export volume). Market watchers noted a fall of IORM deliveries from the USA into China. This, to a large extent, can be explained by the fact that China mainly buys non-agglomerated IORM, namely: lump ore and iron ore fines.

In the third quarter of 2008 USA had increased their IORM exports to 3,6 mln. tons, which sets the record for the last 3 years. But, already in the fourth quarter export volumes went down again to a level below 3 mln. tons.

USA Foreign Trade with IORM in 2007-2008 (in th.tons)



Source: AME, Tax Report

Altogether in 2008, USA have increased their IORM export trade by 20% compared to the previous year and reach the level of 11,17 mln. tons, while IORM imports to the USA in the last year had also grown if measured against 2007. Still growth of imports weren't as impressive as that of exports and amounted to 11%.

In total, by the results of 2008 IORM imports in the USA reached 9,25 mln. ton, including about 6 million tons of pellets. It's notable that with the overall IORM import growth specialists point to dropping volumes of iron ore pellets imports by 1% as compared with the previous year.

Brazil is the main supplier of the non-agglomerated raw materials to the American market, while Canada is the prime supplier of agglomerated materials. IORM deliveries from Brazil in the first half-year of 2008 were lower than those in the same period of the previous year.

American company Cliffs Natural Resources Inc. stated at the end of October that it reduces IORM production in its two mines in Minnesota and withdraws three small indurating machines, including two machines stationed at the Northshore Mining Co. and one at United Taconite – all of this as a result of slumping demand.

In spite of all that high level of contract prices for IORM resulted in considerably higher returns at the U.S. Cliffs Natural Resources by the results of 2008. The company's gain (by the end of 2008) grew by 58,6% up to \$6,6091 billion (against \$1,334 bln. a year earlier). Proceeds from the operations of ore-dressing assets in North America grew by 36% to a sum of \$624,2 million. Company's operational profit increased by 146,0% and totaled \$938,9 mln., while its net profit – by 91,2% and reached \$515,8 million.

With its assets in North America the company boosted iron ore output by 1,7% to 35,2 mln. long tons, but cut production volumes in other regions by 8,3% to a level of 7,7 mln. tons. The company's management believes that demand for IORM will grow in the second quarter of 2009. The company manages its four assets in North America: Hibbing Taconite (Minnesota), Empire & Tilden (Michigan) and Wabush (Labrador).

6.4. Major IORM Importing Economies

China

In many years to come China will remain the world's biggest importer of IORM and even the global credit crunch will not change it. Hence, the economy pays much attention to building its iron ore fields along with expanding foreign operations of Chinese companies related to developing iron ore deposits.

We have to point out that China has not merely become the world's largest consumer, but also the largest importer and manufacturer of IORM.

The economy continues active search and exploration of new deposits; it takes measures on increasing extraction of raw materials highly demanded by metallurgical companies which enables China to constantly correlate its constantly increasing proved iron ore reserves. Presently, China has expanded the number of the economy's proved iron ore reserves up to 68 bln. tons (before it was 59,39 bln. tons with average grade of Fe – 30-35%). For instance, one new iron ore deposit was discovered in Anhui province. According to China Iron and Steel Association (CISA), capacity of magnetite ore and pyrite in the new deposit Nihe River, Lujiang amounts to 120 mln. tons.

Another player - Tangshan Iron & Steel company obtained rights for developing a southern sector of the Sijiaying field, located in the Hebei province. Reserves of the southern district's deposits are estimated to be 1,4 bln. tons with average iron content of 31,1%, mainly in magnetite ores. Tangshan intends to begin extracting ore in 2012. In October of 2007 Tangshan completed GOK construction project at the northern sector of Sijiaying field with capacity of 7 mln. tons of concentrate per year. The GOK's capacity for producing concentrate equals to 2,5 mln. tons a year. At the present time a second stage of the project is being implemented. Projected completion date is 2010. As a result of this project production capabilities for ore will grow to 15 mln. tons a year, and those for iron ore concentrate - up to 4,8 mln. tons a year.

Shougang Group is planning to invest \$1 bln. in developing Shougang Hierro Peru (SHP) field in Peru. The company is hoping to boost their capacity for iron ore extraction by 10 mln. tons a year. Presently, SHP's capacity for (iron) ore production is 4,5-5 mln. tons a year. The project will be completed by 2010.

Gangcheng Group (based in Sichuan province) is building in the district Miyi a new production module for metalized raw materials with capacity of 1,4 mln. tons a year. Presently, the company in Miyi manages another 2 modules for producing metalized RMs with capacity of 1,2 mln. tons each. Delivery of the new module is expected by 2010.

China Iron & Steel Association (CISA) will bend every effort for flattening out the situation on the economy market for ferrous metals, subsequent regulation of IORM imports into the economy, as well as for implementing governmental plan for supporting metallurgical complex. According to the plan, China will increase share of the five largest metal companies, producing ferrous metals in the economy, up to 45% against current 29%. Mainly, it will happen through consolidation and takeover of some smaller companies. For now a timeline for implementing this regulation on industry consolidation remains unclear.

So, Wugang has already gained control over Echeng Steel and Kunming Steel; it has also established Guangxi Fangchenggang Iron & Steel company.

In the context of high prices for IORM China places a bigger emphasis on expanding domestic iron ore production. While back in 2005 the economy produced over 420 mln. tons, which is equal about 200 mln. tons in terms of world average iron content in merchantable ores, already in 2006 it was 588,2 mln. tons (=270 mln. tons), and in 2007 – 707,07 mln. tons (=325 mln. tons). As of 2008, the economy continues to boost its iron ore extraction.

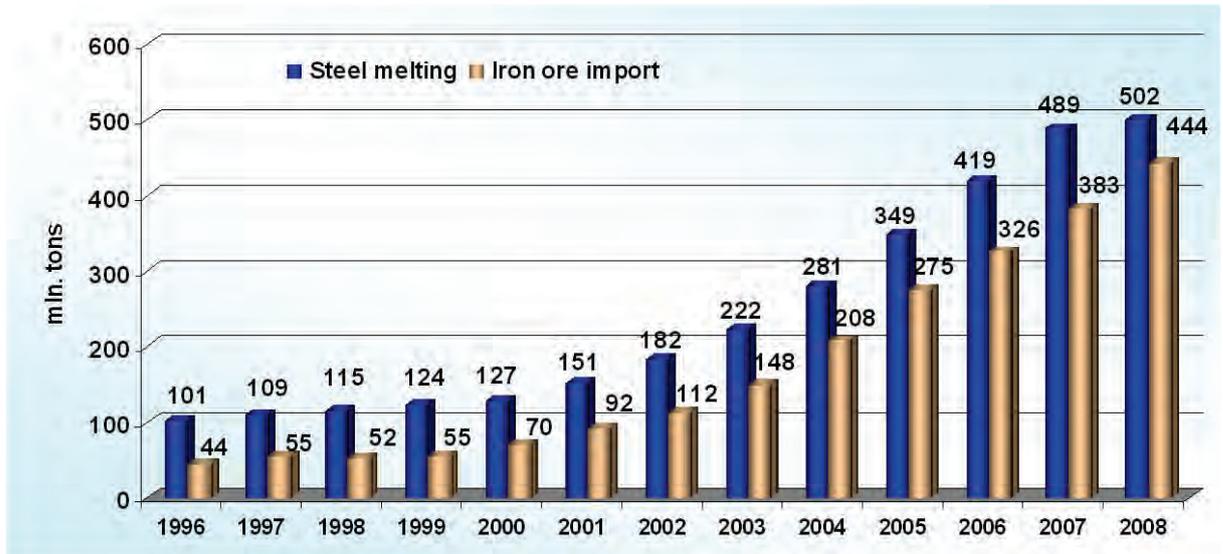
According to the National Bureau of Statistics (NBS), in July of 2008 iron ore production in China totaled 63,736 mln. tons, which is 21,9% less than figures for previous month, but still it exceeds July 2007 production rates by 6,8%. All in all, by the end of 2008, iron ore production in China reached the level of 824 mln. tons – that is 16,5% higher than the same indicator from the last year. True, judging by outcomes of January-April of 2009 ore production in the economy has gone down somewhat as compared against the same period of the previous year. Per National Bureau of Statistics, in January-April of 2009 iron ore output in China amounted to 228,42 mln. tons, though this is less by 3,5% than indicators for the same period of the previous year.

It's obvious that in the future China will be less dependent on iron ore imports. This trend is caused, on one hand, by intensified IORM production in China, and, on the other hand, by shrinkage of growth rates of ferrous metals production in China.

Chinese companies proactively insist upon lower prices for IORM deliveries in 2009 fiscal year, substantiating their claims by the global financial crisis, which caused shrinkage of demand for ferrous metals (in Q4 of 2008 and in first months of the current year) and of IORM consumption accordingly.

This situation when in 2009 (in comparison with 2008) China could see considerable decrease of the pig iron and steel production, metallurgical companies are aggressively insisting on substantial drop in prices for IORM.

Steel Output & Iron Ore Imports in China (in mln. tons) (WSA)



Iron Ore Imports in China and Average Import Prices for IORM

Consumption of IORM by China in 2006 totaled approximately 914 mln. tons (if converted as a ratio of ores extracted to the world average iron content). National IORM consumption in 2007 was 1,09 bln. tons (without conversion to world average content of iron in ores). Generally, at the end of 2008 annual consumption of IORM in China totaled 1,268 bln. tons, which is by 16,2% higher than the same indicators from the last year.

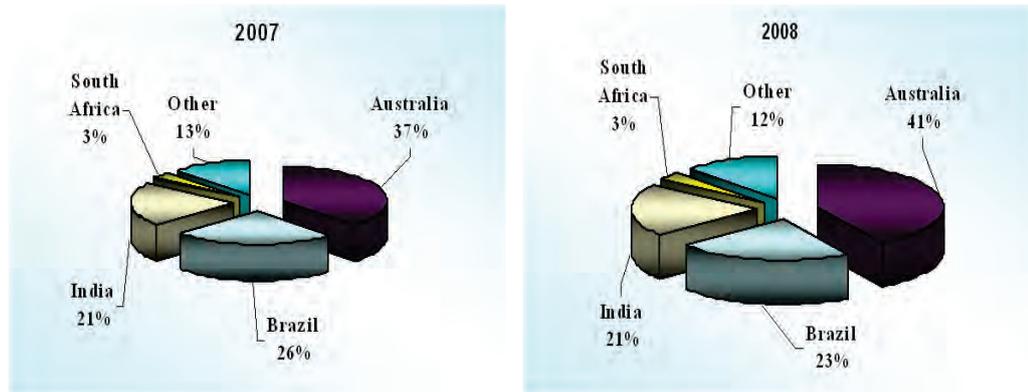
According to the **Customs Office** reports, iron ore imports into China in 2007 totaled 383,471 mln. tons – it’s by 18%, or by 57,15 mln. tons more than those in 2006 (326,323 mln. tons). Along with that, average price level for imported IORM continued to grow. In December, average price for IORM imported into China was \$125.3 per ton.

Iron ore is imported into China, essentially, via 12 sea ports. 3 of those account for over 50% of IORM imports into the economy, and they are: Qingdao, Shijiazhuang, and Tianjin.

It’s worth noting that because of increase in IORM imports into the economy (from 148,2 mln. tons in 2003 to 383,6 mln. tons in 2007) the throughput capacity of the ports has been substantially increased.



Iron Ore Imports in China by Some Economies



In general, by the results of 2008, deliveries of IORM from Australia to Chinese market have grown as compared with (volumes of) 2007 by 26% and reached the level of 183,34 mln. tons.

In December of 2008 Brazil cut volumes of its IORM supplies to China by 7% (down to 6,4 mln. tons) as compared with the same period of the previous year. All in all, by the results of 2008, shipments of Brazil-originated IORM to China decreased by 3% (and amounted to 100,62 mln. tons) as compared with the previous year.

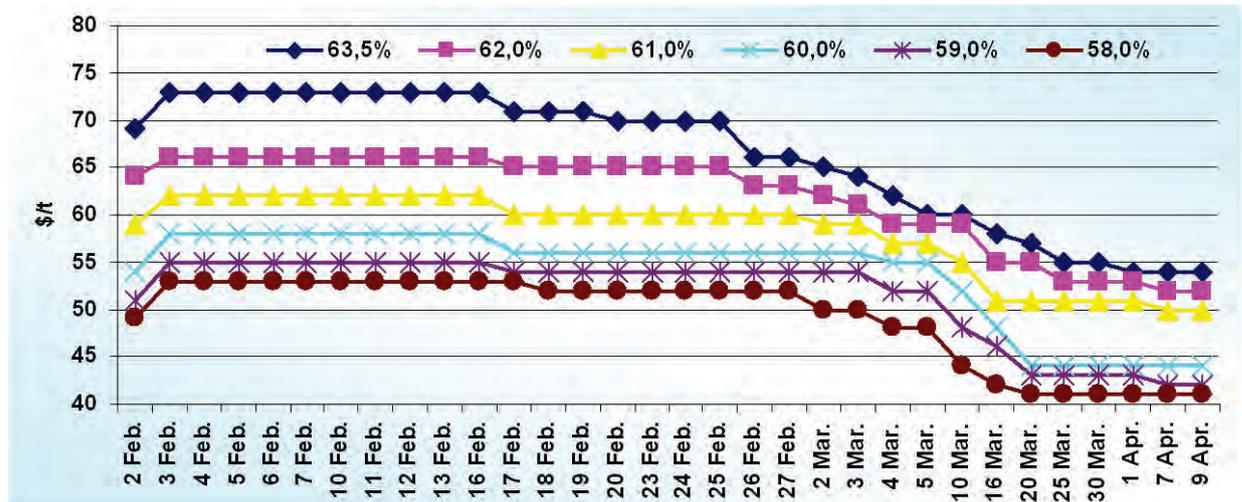
By the end of the year volumes of shipments were greatly affected by high prices for Brazilian IORM as well as by Vale's demand on increasing prices in September when the ferrous metals market was on the decline. The whole situation was aggravated by the fact that Brazilian IORM has lower competitiveness on China's spot market.

In December of 2008 China imported 34,53 mln. tons of IORM, and by the outcomes of the year – total imports amounted to 443,56 mln. tons – it is by 15,9% higher than volumes of the previous 2007.

In December of 2008 China significantly increased iron ore imports from India as compared with November. Imports of Indian iron ore into China in December grew by 151% against volumes of the previous month (that is, up to 10,19 mln. tons). In December IORM imports into the economy grew by 6,18%, even though deliveries from Australia and Brazil slumped. In December shipments of ore from Australia went down by 15,34%, and from Brazil - by 29,34%. According to Chinese trading companies, December's growth of iron ore imports from India can, on one hand, be explained by increase in pig iron and steel output as compared with November, and on the other hand – with higher competitiveness of Indian ore.

Indian companies are faster to react on surges of demand and have better delivery terms when it comes to raw materials. In comparison with December of 2007, iron ore imports from India in December of 2008 grew by 21%. Total volume of IORM imports into China from India (by the end of 2008) amounted to 90,97 mln. tons. It is by 15% higher than the last year's indicators. As of December of 2008 Australia managed to keep its standing of a leading iron ore supplier to China – 12,85 mln. tons, which is by 5% less than indicators of December of 2007.

***Price Dynamics for IORM in China in February and at the Beginning of April, 2009.
FOB.***



Source: CRU

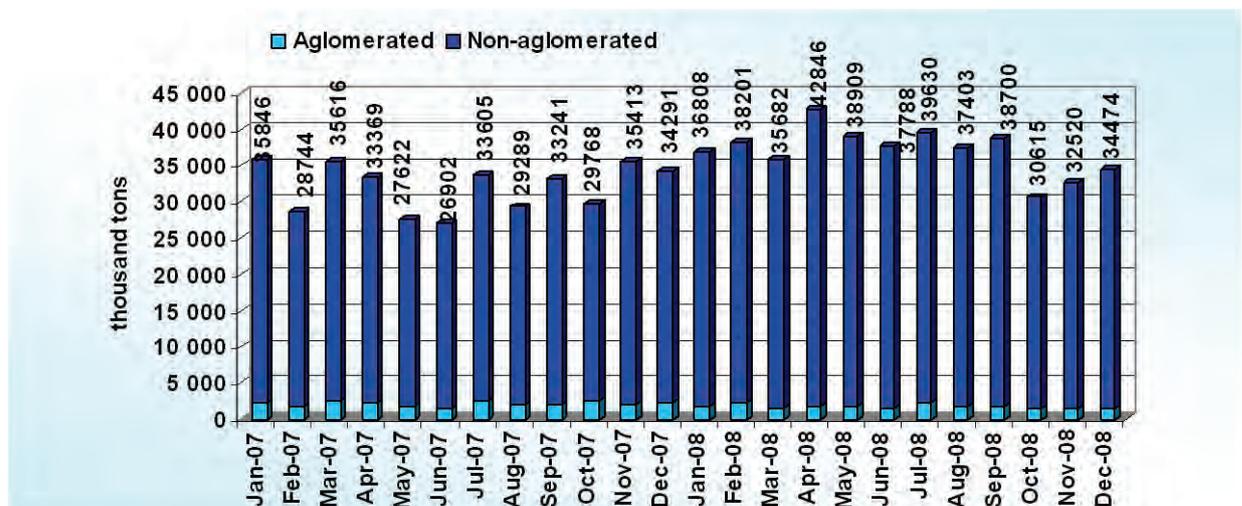
China continues to boost IORM imports in the current year of 2009. Per Chinese Customs authorities IORM imports into the economy totaled 57 mln. tons – a 5 mln. tons more than in previous month. In April, IORM imports into the economy in monetary terms amounted to \$4403,365 million. Hereby, the average price for imported IORM in April rounded as \$77,25 per ton, which is by \$56,58 (per ton) or by 42,3% less than average price in April of 2008 (= \$133,83 per ton).

Altogether, in January through April of 2009 China brought in 188,46 mln. tons of IORM, and that is by 22,9% (or by 35,13 mln. tons) more than result of the same period in the previous year (=153,33 mln. tons).

In the end of the first quarter of 2009, the following suppliers of IORM increased their deliveries into China: Australia – by 28,7% as compared with Q1 of 2008 (up to 53,6 mln. tons), India – by 33% (up to 34,2 mln. tons), South Africa – by 55,7% (up to almost 6,3 mln. tons), Ukraine – by 47,9% (up to 2,1 mln. tons), Russia – by 14,4% (up to 1,8 mln. tons). Deliveries from Brazil, however, went down by 8,2% to the level of 22,26 mln. tons.

In value terms, IORM imports into the economy for the period of January-April 2009 decreased by 26,6% (to \$14,983 billion) as compared with the same period of the previous year (then it was worth \$20,408 billion).

Iron Ore Imports into China, Breakdown by Months, mln. tons



Source: Chinese Customs authorities

Japan

Japan is among the world's biggest IORM importers. After certain shrinkage of IORM import volumes in 2005 (by 1,9% as compared with 2004) researchers witnessed increase in amount of iron ore brought into the economy, which was caused by growth of ferrous metals output in Japan. After IORM imports grew in 2007, in 2008 there was registered another surge in demand for IORM imports.

Increase in IORM imports into the economy in January-September of the last year was caused by growing rates of production of pig iron and steel. However, in the fourth quarter there was a tangible decline of ferrous metals production in Japan, which, in turn, reflected itself in IORM import volumes. As a result, output of pig iron in Japan by the end of 2008 showed slight decrease against a level of the last year (by 0,7%) and totaled 86,2 mln. tons. At the same time steel production in the economy in 2008 equaled to 118,7 mln. tons (down by 1,2%).

The year 2008 had shown that imports of IORM into Japan had grown, although only by 1,1% (up to 140,413 mln. tons). A record level of IORM imports into the economy was registered in 1974 (it was 141,816 mln. tons). In 2007 the economy brought in 138,9 mln. tons of IORM, which by 5,1% exceeded indicators of 2003 (132,1 mln. tons) and by 3,4% indicators of 2006 (134,36 mln. tons). In monetary terms, IORM imports into the economy in 2007 had gone up by 25,5% as compared with 2006. The average price for imported IORM had gone up by 1,322 yen per ton, or by 21,4% (from 6,181 to 7,503 yen per ton).

In value terms IORM imports into the economy in 2008 amounted to 1,342.14 bln. yen, which is by 29,4% higher than the same period indicator for the previous year. Average import price for IORM in 2008 reached 9,558 yen per ton, which is by 28% higher than the same period indicator for the previous year. It's important to note that by the end of 2008 average price level had gone down. So, in December, the average price for imported IORM was 10,711 yen per ton, while back in September it was 12,245 yen per ton.

Key suppliers of IORM to Japanese market are Australia, Brazil, India, South Africa, and Philippines. In the structure of IORM deliveries in 2008 Australia accounted for 58,5 % (59,9 % in 2007), Brazil's share was almost 25,9 % (22,2 %), that of India – 4,9 % (5,7 %), share of South Africa - 4,7 % (4,6 %), and that of Philippines - 2,9 % (3,8 %).

In 2008 these five economies had a combined share of 96,8% in the total volume of IORM imports into the economy (in 2007 it was 96,2%). Note that shares of India, Australia, and Philippines in the total volume of IORM deliveries to the Japanese market had shrunk a bit. And, on the other hand: shares of IORM supplied by Brazil and South Africa grew up.

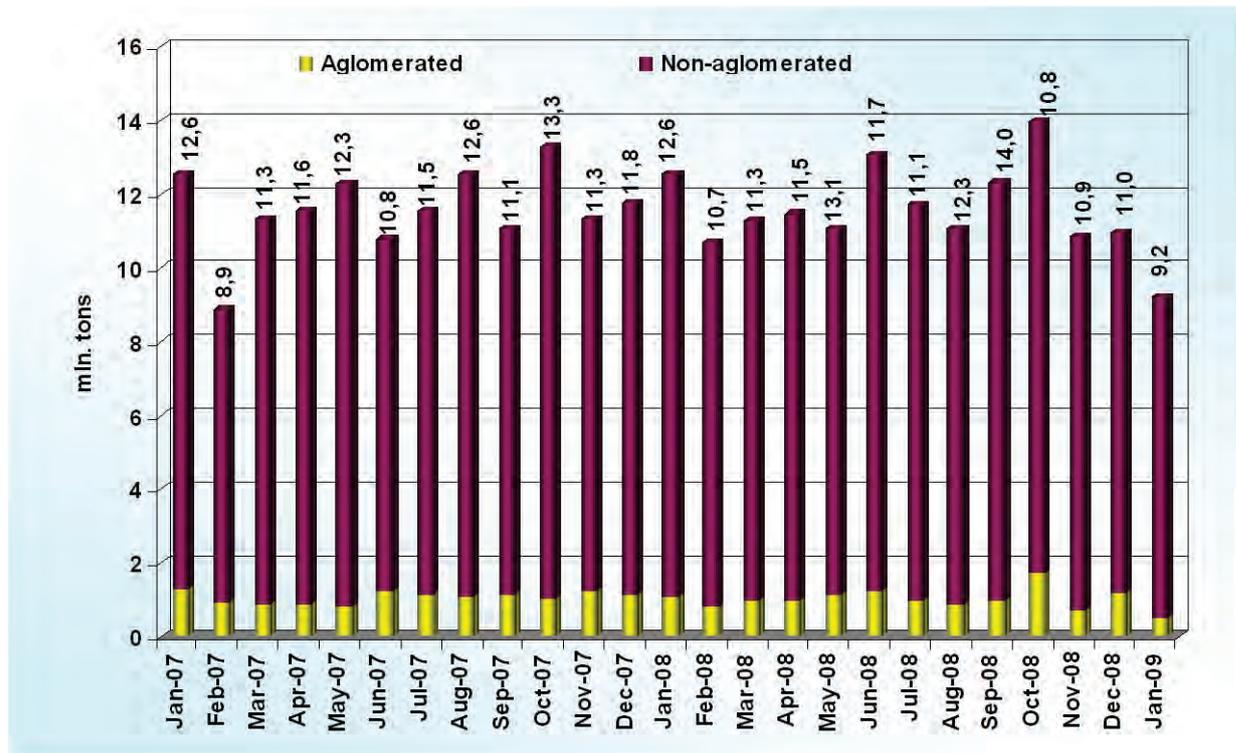
Keep in mind that both Australia and South Africa supply Japan only with non-agglomerated materials (namely with lump ore and iron ore fines), while Brazil – with non-agglomerated RMs and pellets: India basically does non-agglomerated materials too.

IORM Imports into Japan by Months (in th.tons)

Month	2003	2004	2005	2006	2007	2008
January	11,592.8	11,812.5	10,927.6	11,427.9	12,560.2	12,556.2
February	10,718.5	10,563.9	10,202.1	9,813.1	8,870.5	10,688.2
March	10,050.4	11,319.8	12,609.5	10,474.5	11,310.5	11,300.0
April	10,190.6	11,911.8	10,467.0	11,312.1	11,563.8	11,460.9
May	11,206.9	10,453.9	12,004.0	12,189.0	12,304.5	11,067.8
June	11,653.4	10,084.9	11,472.0	10,926.9	10,775.3	13,093.0
July	10,989.9	12,008.6	9,633.4	10,388.6	11,541.1	11,719.0
August	10,080.3	10,744.3	12,308.1	12,045.3	12,561.3	11,082.0
September	11,267.7	11,925.3	9,532.2	11,428.5	11,070.0	12,301.0
October	11,134.5	10,510.5	11,357.6	11,940.0	13,273.0	13,328.1
November	10,149.3	10,942.6	11,734.2	10,974.8	11,346.5	10,850.0
December	12,047.1	12,626.3	10,063.5	11,393.0	11,752.0	9,771.7

In Total:	132,081.4	134,886.5	132,311.2	134,360.0	138,928.0	80,172.7
<i>Sources: Tax Report [3], The Economist Intelligence Unit [13], Customs clearance</i>						

IORM Imports into Japan by Products (in mln. tons)



Philippines supply Japanese market almost exclusively with agglomerated raw materials. The share agglomerated materials is not big in the structure of Japanese imports, and by results of 2008 it comprised 8,7% (against 9,16% in 2007). Besides Brazil and Philippines other economies that ship relatively small volumes of agglomerated materials are Canada, Chile, Ukraine, and India.

As early as beginning of 2009 Japan has substantially cut its IORM imports because of decline in the its ferrous metals output. In January, IORM imports amounted only to 9,2 mln. tons, which is by 25,8% (or by 3,3 mln. tons) less than the same period imports in the last year. Along with that, IORM deliveries from Australia fell by 31,8% (down to 5,116 mln. tons), that of Brazil – by 10,4% (down to 2,602 mln. tons), and shipments from India – by 43,6% (down to 0,58 mln. tons). Philippines supplied some meager 47 tons of iron ore.

Some tentative data by the Financial Department show that iron ore imports into Japan in April of 2009 comprised 6,452 mln. tons, which is by 43,7% less than in April of 2008. In monetary terms, IORM imports into the economy reached 63,101 bln. yen, while average price for imported IORM - 9,780 thousand yen per ton. Decrease of IORM imports was caused by substantial drop in pig iron and steel output in the economy. In April of 2009 production of the pig iron and steel plummeted by 39% as compared with April of 2008, while steel process – by 43,6%. All in all, since the beginning of the current year (we are talking January-April) IORM imports into the economy were a little over 29 mln. tons, and that is substantially lower than indicators for the same period in the previous year – down to 46 mln. tons.

We shall point out that the most serious drop in IORM imports into Japan for the period January-April of 2009 happened in March – by 48,2% as compared with volumes of March in the previous year. IORM imports into Japan in March were only 5,9 mln. tons – the lowest level of foreign material purchases in recent years. During the period of 2006-2008 IORM imports in each month had never dropped below 8.9 mln. tons.

At the same time reduction of IORM imports into Japan goes in line with drops in production of pig iron and steel in the economy. IORM imports into Japan in the first quarter of

2009 decreased by 34,5% in comparison with the same period of the previous year and amounted to 22,642 mln. tons. Cast iron production in the economy for the same period shrank by 34,2% to the level of 14,581 mln. tons.

Korea

Korea is among the world's largest producers of ferrous metals. The economy ranks fifth by the volumes of pig iron production, yielding only to China, Japan, USA, and Russia. In 2008, unlike most of the other economies, Korea managed to boost its pig iron output by 6% as compared with 2007 to more than 31,2 mln. tons, and steel output – by 4% up to 53,5 mln. tons.

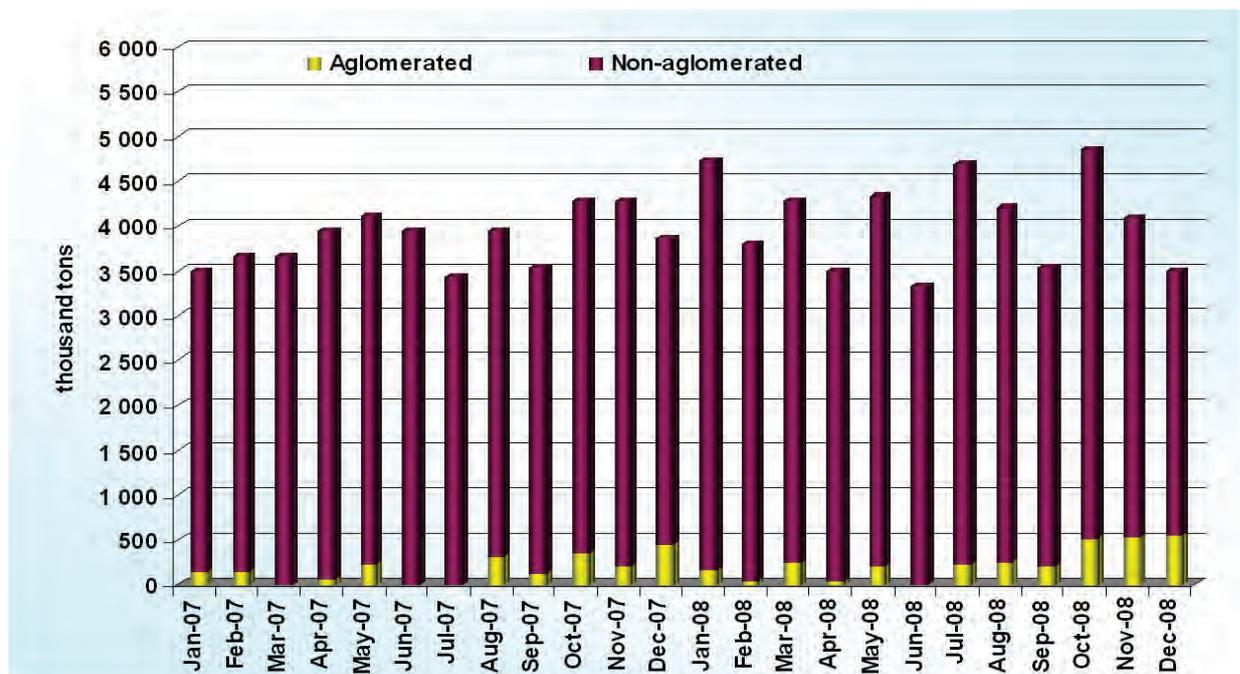
True, by the end of 2008 production of pig iron and steel began to fall. This decline was triggered by negative influences of the global crisis. POSCO, the economy's leading metallurgical company by the end of the year had also cut its pig iron and steel production volumes. During the period of January-April of 2009 Korea contracted its pig iron production by 22,4% to the level of 7,85 mln. tons as compared with the same period of the previous year, while steel process was cut by 19,4% to 14,6 mln. tons.

Nevertheless, the growth of ferrous metals output in 2008 sparked the need to increase IORM imports.

According to the Customs Office data, Korea annually imports 43-44 mln. tons of IORM. In 2006 IORM imports reached 43,9 mln. tons. This is only 1% higher than last year's indicator. In 2007 IORM imports into Korea grew by 7% and reached the level of almost 46,805 mln. tons. But, already in 2008, IORM imports into Korea surpassed the mark of 49,5 mln. tons.

Let's touch upon some changes in the IORM delivery structure to the Korean market by individual economies. There are two principal IORM suppliers to Korea – Australia, which in 2007 brought in over 60% of the total volume of iron ore purchases by Japan, and Brazil, which accounted for almost 27%. Both of them have increased their shipments in 2008. Australia enlarged its IORM export volumes by 9,5% to 34,14 mln. tons (this is 68,9% of the total import volume); and Brazil – by 16,8% to 12,13 mln. tons (24,5%). At the same time South Africa and India cut their IORM supply volumes to Korea to the levels of 20,4% and 48% accordingly.

IORM Imports into Korea by Months, mln. tons



Japanese IORM import structure features prevalence of non-agglomerated materials (lump ore and iron ore fines), which comprise 94,3% of the total import volume, supplied by

Australia, Brazil, South Africa, and India. Brazil and India are the principal providers of agglomerated materials to the economy, where Brazil holds a 93,3% share for agglomerated materials.

Chinese Taipei

Chinese Taipei brings in quite substantial volumes of IORM. Recent years featured steady growth of IORM imports. This upmarket trend was caused by growing production of ferrous metals in Chinese Taipei, which facilitated a 3,7% increase in IORM purchases at international markets in 2007. This means 16,035 mln. tons against 15,46 mln. tons in 2006.

It's important to point out that Australia and Brazil are the key IORM suppliers to Chinese Taipei. Some minor volumes of IORM are supplied by Canada. Other economies send IORM to Chinese Taipei in minimal quantities. But, in the end of 2008 this situation had changed. According to WSA data, production of pig iron in Chinese Taipei in 2008 amounted to 9,8 mln. tons, which is by 6,8% less than previous year's indicators, while steel output was less by 3,3% (down to 20,2 mln. tons).

It is self-evident that the shrinking market of ferrous metals pulled down IORM import levels. So in 2008 IORM imports to Chinese Taipei equaled to 15,57 mln. tons, which is by 2,9% less than the previous year's indicators (it was 16,04 mln. tons). In spite of this, Australia like in the previous year, built up its IORM shipments (by 5,8%) and reached the volume of 10,9 mln. tons, while other suppliers cut down their export levels. Brazil in 2008 decreased IORM shipments bound for Chinese Taipei by 10,7% as compared with 2007, and Canada cut it by 59,2% (down to 493 thousand tons) - a striking contrast with its previous year performance of over 1,2 mln. tons. As a result, in the structure of IORM shipments for Chinese Taipei Australia secured the share of 70,2% (against 64,4% in the previous year).

IORM Imports by Chinese Taipei in 2007-2008 (in th. tons)

Economy	2007			2008			Change %
	Agglomerated	Non-agglomerated	Total	Agglomerated	Non-agglomerated	Total	
Total	7,882.8	8,152.6	16,035.4	11,166.6	4,403.9	15,570.5	-2.9
Including:							
Australia	4,549.9	5,784.7	10,334.6	9,907.8	1,028.2	10,936.0	5,8
Brazil	2,838.3	1,653.3	4,491.7	1,190.1	2,822.3	4,012.4	-10.7
Canada	494.5	714.6	1,209.1	68.7	424.4	493.1	-59.2
Bahrain	-	-	-	-	128.8	128.8	-

Source: WSA

In 2008 Chinese Taipei substantially increased its imports of non-agglomerated raw materials and, at the same time, cut by half imports of iron ore pellets. For the most part it had happened due to changes in the structure of Australian IORM deliveries for Chinese Taipei: the former reduced its shipment volumes of agglomerated materials in 2008 more than five times as compared against last year, but, at the same time, increased shipment volumes of the non-agglomerated materials.

Canada

Canada is one of the biggest IORM suppliers to global markets. However, in 2008 Canada somewhat decreased its IORM export shipments as compared with the previous year – by 0,5% to almost 28,2 mln. tons (it was 28,3 mln. tons a year earlier). Also in the last year Canada boosted detachments of iron ore pellets and cut export of IORM. In 2008 Canada shipped for export about 20,58 mln. tons of pellets, which is by 10,24% surpassed last year's

indicators (18,67 mln. tons). Dispatches of IORM to international markets went down by almost 212,2% down to 7,6 mln. tons (against 9,6 mln. tons a year earlier). By the way, Canada ships IORM to almost 30 economies, and biggest IORM deliveries are forwarded to the economies of Europe, Asia, and USA.

By the end of 2008 due to the drop in demand for ferrous metals around the world and shrinkage of IORM production Canada substantially reduced its IORM export. So, IORM exports in December of 2008 amounted to 1,87 mln. tons, which is by 21,7% less than the same period indicators of the previous year.

According to the statistics services, IORM exports from Canada in March of 2009 were 1,975 mln. tons, which is by 0,386 mln. tons (or by 24,3%) higher than indicators of the previous month. Altogether, by the results of the first quarter of 2009 IORM exports from Canada equaled to 4,89 mln. tons, which is by 1,102 mln. tons (or by 18,45%) less than indicators for the same period of the previous year.

Some considerable changes in the structure of IORM exports from Canada have taken place. So, by the results of the 1Q of 2009, IORM deliveries to China grew more than three times as compared with the same period of 2008 and amounted to 1,844 mln. tons. Also, shipments to some European economies have increased too, in particular to France, Belgium, and Spain. So, IORM deliveries to Germany went down by 83%, those to Great Britain – by 82,8%. Deliveries of IORM to USA shrank by 74,7%. Generally speaking, in the first quarter of 2009 there were no IORM shipments to Italy, Saudi Arabia, Chinese Taipei and other economies. Naturally, such changes were caused by global financial crisis as well as by reduction in ferrous metals output in the most economies.

IORM Exports by Canada in January-March of 2009 (in th. tons)

Economy	2007	2008	Change, %	Q1 2009			Q2 2008			Change, %
				concentrate	pellets	In total	concentrate	pellets	In total	
In total	28,302.7	28,172.9	-0.5	2,367.1	2,225.7	4,889.8	5,246.9	745.3	5,992.2	-18.4
Including:										
Germany	5,876.2	7,271.8	23.8	-	305.6	305.6	1449.8	333.8	1783.7	-82.9
USA	5,446.1	5,802.5	6.5	145,717	2,952	148,669	587.0	0.0	587.1	-74.7
China	4,488.3	3,305.0	-26.4	1282,181	561,529	1843,710	562.9	-	562.9	227.6
Great Britain	2,756.6	2,126	-22.9	161,752	-	161,752	823.6	119.3	942.9	-82.8
France	1,178.1	1,806.6	53.3	214,706	664,667	879,373	100.7	219.2	319.9	174.9
Belgium	66.5	578.7	769.8	80,762	441,396	522,158	68	-	68	668.7
Spain	354.8	378.2	6.6	120,766	366,877	487,643	150.7	-	150.7	223.7
Japan	1,788.9	1,345.6	-24.8
Netherlands	1,095.1	842.9	-23.0	35,736	179,651	215,387	161.7	73	234.6	-8.2
Trinidad and Tobago	473.5	815.7	72.3	59,706	-	59,706	231.9	-	231.9	-74.3
Turkey	446.1	261.2	-41.5	150,567	-	150,567	100.4	-	100.4	50.0

Source: Canadian Statistic Services

It's notable that there is growth in iron ore pellets shipments from Canada in the first quarter of 2009 as compared with the same period of 2008, as well as drop in ore concentrate exports. Growth in export of iron ore pellets is caused by increased purchase volumes by China, though China never ordered it from Canada before, as well as by France, Belgium, and Spain. Reduction in ore concentrate deliveries is related to the absence of sales to Germany (against 1,45 mln. tons in the first quarter of 2008).

Peru

Peru supplies international markets with quite substantial amounts of IORM. According to Superintendencia Nacional de Aduanas, in 2008 IORM exports from the economy equaled 6,811 mln. tons, which is by 3,4% less than the (same period) indicators from 2007. Main IORM volumes were delivered to China. In 2008 the share of IORM in total export volume amounted to 737% (5,018 mln. tons). IORM is produced in Peru by a subsidiary of the Chinese Shougang Group. Shougang Hierro Perú extracts iron ore at the mine Marcona Iron Ore Mine. Production volumes amount to up to 7 mln. tons a year. Mainly, Peru supplies global markets with non-agglomerated IORM (almost 5 mln. tons in 2008). Exports of iron ore pellets equaled to almost 1,8 mln. tons.

IORM Exports by Peru (in th. tons)

Economy	2008				2007		Change, %
	Non-agglomerated RMs	pellets	In total	Export share, %	In total	Export share, %	
In total	5,024	1,787	6,811	100	7,049	100	-3.4
Including:							
China	3,795	1,223	5,018	73.7	4,918	69.8	2.0
Japan	763	-	763	11.2	730	10.4	4.5
Korea	-	142	142	2.1	379	5.4	-62.5
Trinidad and Tobago	-	422	422	6.2	294	4.2	43.5
Mexico	410	-	410	6.0	390	5.5	5.1

According Superintendencia Nacional de Aduanas

In addition to that Peru supplies IORM to some Asian economies, including Japan, Korea, and to American economies (Trinidad and Tobago, USA, Argentina), although volumes sent to those economies are not significant. Deliveries to Japan though exceed 700,000 tons a year.

EU

One large region that imports substantial volumes of IORM is Europe, in particular leading EU economies. Among the large IORM importers in the EU are Germany, France, Italy, and Great Britain.

In 2008 Germany imported 44,3 mln. tons of IORM, including 31 mln. tons of nonsintered raw materials. As compared with 2007, in the last year Germany reduced its IORM imports by 4,1%. In the current year however IORM imports into the economy plummeted because in January-April of 2009 production of ferrous metal in the economy sharply fell as compared with the same period of 2008. Main IORM supplier to Germany is Netherlands (almost 24 mln. tons in 2008) and Brazil (about 11 mln. tons). But, most likely, there are some other economies that ship raw materials to Germany via Netherlands, one of them could be Brazil.

In 2008 Great Britain imported 15,3 mln. tons of IORM (against 17,4 mln. tons a year earlier). Main IORM suppliers to Great Britain are Brazil (7,8 mln. tons in 2009 and 7,2 mln. tons in 2008), South Africa (2,5 mln. tons), and Canada (2,3 mln. tons in 2008).

Italy in 2008 imported 16,3 mln. tons of IORM (it was 17 mln. tons in the previous year). Main IORM suppliers to Italy are Brazil (11,7 mln. tons in 2008 and 11,3 mln. tons in 2007), Mauritania (1,6 mln. tons in 2008 and 2,2 mln. tons in 2007), as well as South Africa, Russia, USA, and Canada.

France in 2008 imported 18,3 mln. tons of IORM, which is by 8,8% less than indicators from 2007. Main IORM supplier to the French market is Brazil (11,8 mln. tons in 2008 and 13,65 mln. tons in 2008). Mauritania sent almost 2,6 mln. tons of IORM to France in 2008 (and

2,72 mln. tons a year earlier), Canada shipped 1,85 mln. tons (1,1 mln. tons), and Australia – 1,7 mln. tons (2,1 mln. tons).

In 2008 15 EU economies together brought in about 124,8 mln. tons of IORM (against 120,8 mln. tons in 2007). Brazil controls biggest share of IORM market in the EU economies (in 2008 it supplied EU with 78,3 mln. tons).

IORM Imports to the EU Economies (15 economies), in mln. tons

Economy	2008				2007			
	Non-agglomerated IORM	Agglomerated IORM	Total	share, %	Non-agglomerated IORM	Agglomerated IORM	Total	share, %
Total	99,138	25,669	124,807	100	99,460	22,308	120,768	100
Brazil	66,788	11,505	78,293	62,7	60,431	11,561	71,992	59,6
Canada	6,076	7,864	13,940	11,2	6,168	5,627	11,795	9,8
Mauritania	7,568	0,576	8,144	6,5	8,910	0,755	9,665	8,0
South Africa	6,231	0,574	6,805	5,5	7,651	0,271	7,922	6,6
Australia	5,078	0,652	5,730	4,6	7,296	0,395	7,691	6,4

Source: WSA, Eurofer

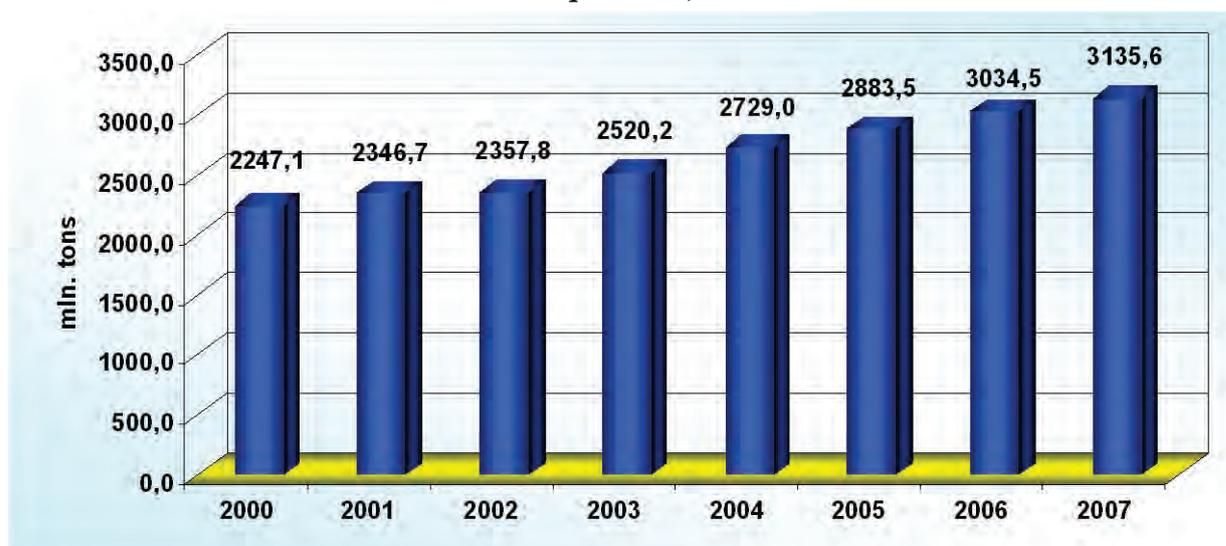
7. GLOBAL COAL MARKET*

7.1. Coal Production in the World. APEC's Position on the Global Coal Market

In the period of sharp and substantial increase in global industrial production volumes, which is a feature of the recent years, only the year of 2008 (and the beginning of 2009) was become an exception. Governments of many economies are setting themselves to the task of securing their economies with energy resources. Lately, there is a major shift in attention toward coal as widely available, abundant, and relatively affordable type of hydrocarbon fuel source.

As a result, there is a growth of coal production volumes worldwide. For the period of 2000-2007 production volumes have grown by 1.4 times. And the higher growth rates in 2000-2007 were exhibited by the economies of Asian region, and mainly by China. For the period under review volumes of coal production in China have doubled (from 656,7 mln. tons in the year 2000 to 1,289.6 mln. tons of oil equivalent in 2007).

Dynamics of Coal Production in the World in 2000-2007, in mln. tons (in oil equivalent)

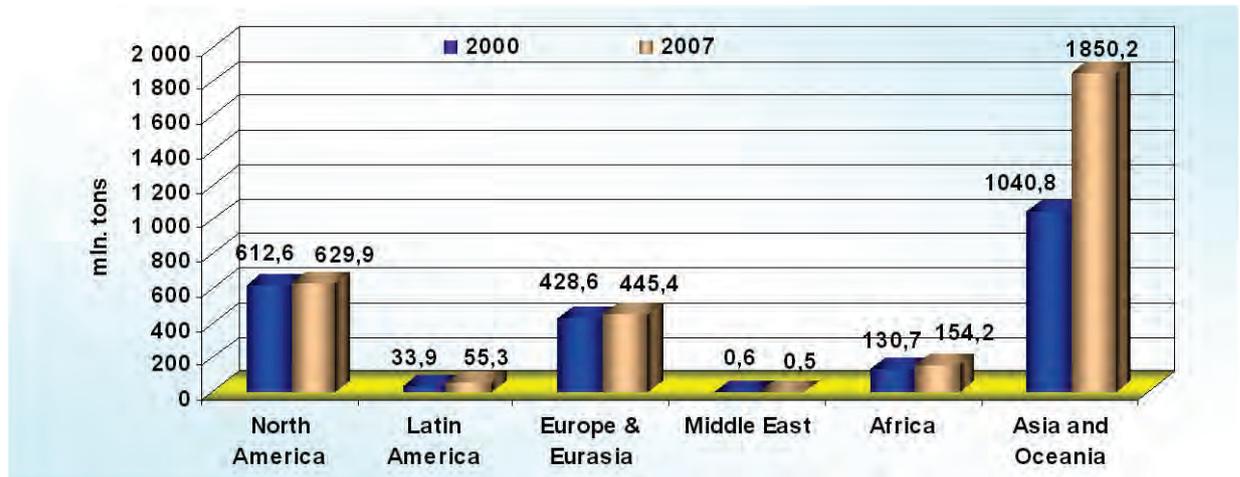


Source: BP Statistical Review of World Energy

During the period of 2000-2007 coal production in APEC has grown 1,5 times from 1,617.4 mln. tons to 2,425.3 mln. tons (in oil equivalent). APEC's share in the global coal output increased from 72% in 2000 to 77,4% in 2007. However, it shall be noticed here that APEC's share (excluding that of China) is decreasing, while China's share in the global output is growing.

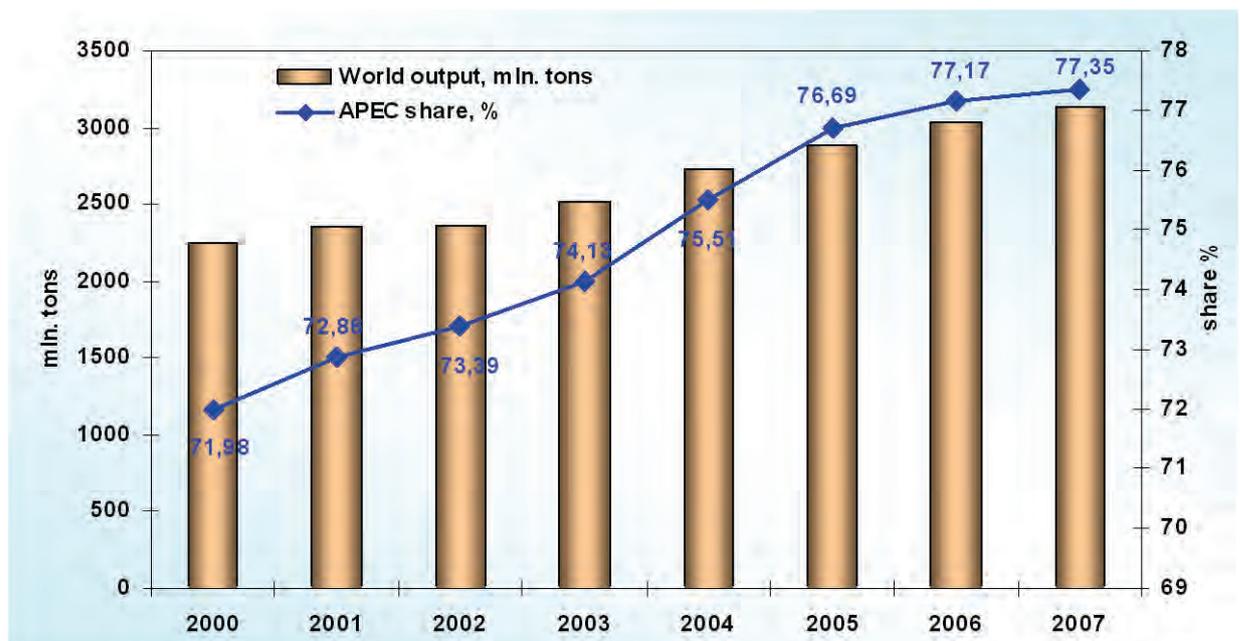
* Data Sources: BP Statistical Review of World Energy [8], AME [5], United Nations Statistic Division, CRU [10]

Coal Mining in 2000 and in 2007 by Major World Regions, in mln. tons (in oil equivalent)



Source: BP Statistical Review of World Energy

Global Coal Production (mln. tons in oil equivalent) and Share of APEC in Global Production (%)

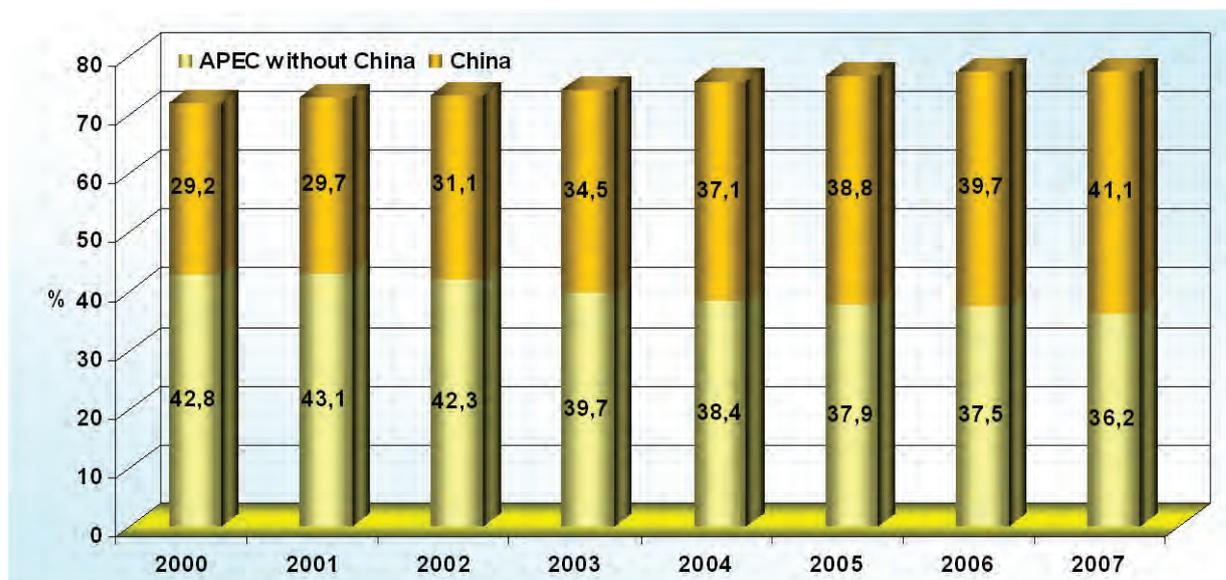


Source: BP, RUSMET

Among APEC members major coal manufacturing economies are China and the USA. Share of these two economies in the total output volume by APEC economies in 2007 amounted to 77,4%.

China is rich with coal. It ranks third by volumes of coal reserves in the world, and by volume of coal extraction and consumption China is the leading economy of the world. In 2002-2008 volume of coal production in the economy grew in average by 200 mln. tons, while average increase was 11 percent. Coal-mining industry played an important role in securing social and economical development of China.

Share of APEC, Excluding China and Share of China in the Global Coal Production (%)



Source: BP, RUSMET

Coal Production by APEC, mln. tons (in oil equivalent)

Economy	2000	2001	2002	2003	2004	2005	2006	2007
Australia	166.3	179.9	184.5	190.1	198.8	206.5	211.0	215.4
Canada	37.1	37.6	34.9	32.2	34.7	35.6	34.5	36.9
China	656.7	697.6	733.7	868.4	1,012.1	1,119.8	1,205.1	1,289.6
Indonesia	47.4	56.5	63.6	69.5	79.4	93.9	111.4	107.5
Japan	1.7	1.8	0.8	0.7	0.7	0.6	0.7	0.8
Korea	1.9	1.7	1.5	1.5	1.4	1.3	1.3	1.3
Mexico	5.4	5.3	5.3	4.6	4.7	5.2	5.5	5.9
New Zealand	2.2	2.4	2.7	3.2	3.2	3.2	3.5	2.8
Russia	116.0	122.6	117.3	127.1	131.7	139.2	145.1	148.2
Thailand	5.1	5.6	5.7	5.3	5.6	5.8	5.3	5.1
USA	570.1	590.3	570.1	553.6	572.4	580.2	595.1	587.2
Viet Nam	6.5	7.5	9.2	10.8	14.7	18.3	21.8	23.1
Other APEC economies	1.0	1.0	1.1	1.2	1.3	1.7	1.4	1.5
APEC, total	1,617.4	1,709.8	1,730.4	1,868.2	2,060.7	2,211.3	2,341.7	2,425.3

BP Statistical Review of World Energy

At the same time extensive methods of economic activities at coal mines, big number of relatively small coal mines, problems with accident prevention at worksite, aggravation of conflict between coal industry and environmental protection agencies are among the factors that hinder long-term development of the industry.

At the present time there are 14,000 small coal mines operating in the economy, where average production volume among them equals to 180,000 tons.

There is a need for acceleration in the rates of coal-mining complexes construction as well as increasing their share in coal mining industry of China. At the same time smaller mines should be either restructured or closed down.

State Administration of Work Safety (SAWS) has announced that in the current year it will close 1,000 smaller coal mines in order to decommission obsolete production facilities. Existing mines will be consolidated through buyouts and merger operations.

Presently, almost two thirds of coking coal is being produced by small coal mines that would often come under fire of criticism for their recurring safety problems.

According to China National Coal Association (CNCA), coal production volumes in China in 2008 amounted to 2,716 bln. tons, which is by 7,65% (or by 193 mln. tons) exceeded volumes of 2007. Of all produced coal, 705,1 mln. tons are coking coal. Ministry of Land & Resources predicts that by 2010 coal mining in China will reach the volume of 2,9 bln. tons, and by 2015 extraction volumes will be over 3,3 bln. tons, and by 2020 – 3,5 bln. tons.

As global financial crisis slashed demand and prices everywhere, increase of production, to a large extent, aggravated situation with market oversaturation.

Per Energy Information Administration (EIA) in 2008 USA had produced 1,170.2 mln short tons of coal, which is by 2,1% higher than in 2007.

Major US-based coal manufacturers are the companies Peabody Energy Corp, Rio Tinto America (Kennecott), Arch Coal which jointly account for 40% of all coal production in the economy.

Coal mining in Russia in 2008 equaled to 326,1 mln. tons and increased by 3,9% as compared with output in 2007.

For the first three quarters of 2008 production volume in Russia has gone beyond the same period indicators from 2007 by 7%, and this means that if it were not for the slump in production for the last three months of 2008 caused by the crisis, extraction volumes would have been even more than those of 2007.

In the last year production of the coking coal in Russia decreased by 6,6% and amounted to 66 mln. tons as compared with indicators of the previous year.

It is expected that coal (i.e. anthracite) output in Viet Nam in 2009 will increase up to the level of 42 mln. tons, and 20 mln. tons of them will be shipped for export, mainly for the needs of Chinese thermal power plants. Contracts to supply some 16 mln. tons of coal to China have already been signed. It is considered by experts that supply to China will be further increased due to high prices for coal in domestic Chinese market.

The Canadian Teck Resources Ltd. Company has begun selling its coal-mining assets (we are talking about metallurgical coal). It is believed that some of the company's assets will be purchased by Chinese companies. In October of 2008 the company decided to get rid of some of its assets for metallurgical coal-mining in order to reduce company's debt load. Currently negotiations are being held with many Chinese companies.

The Teck Resources Ltd. Company owns the following coal mining assets: Fording River mine, Line Creek mine, Coal Mountain mine, Cheviot Creek mine, Elkview mine, and Greenhills mine. In 2008 the company produced 23,009 mln. tons of coal and sold 22,978 mln. tons. Over half of all produced metallurgical coal was exported to Japan and Korea. If Chinese companies will buy some of those companies, supply volumes of coal from Canada to China will certainly increase.

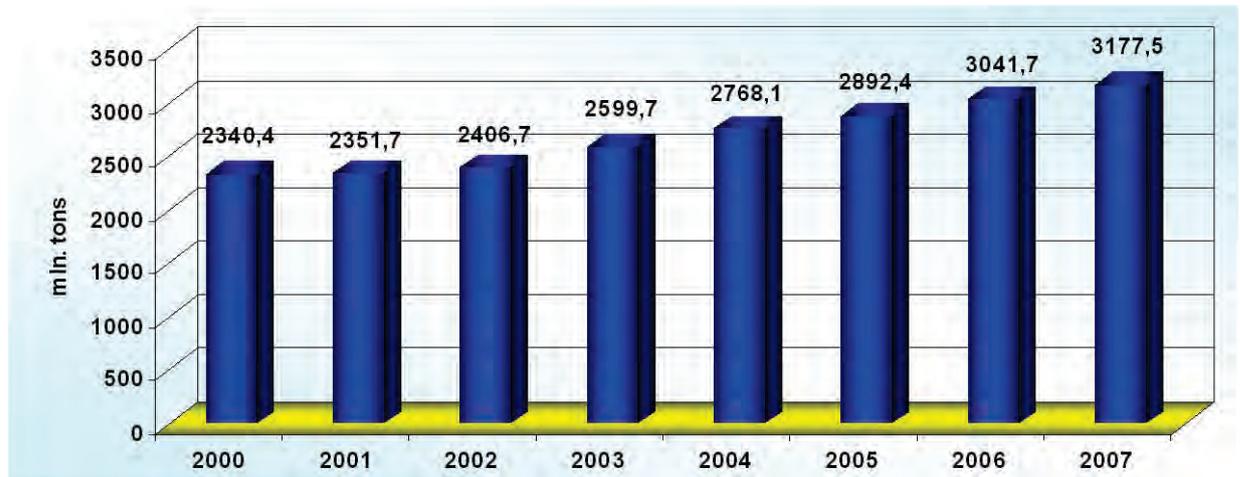
At the same time some major Chinese coal-mining companies like Shenhua Group Corp, Yangzhou Coal Mining and others are buying Australian coal assets.

7.2. Global Coal Consumption. APEC Share in Global Consumption.

In 2007 consumption of coal worldwide (in conversion to oil equivalent) amounted to 3,177.5 mln. tons, which by 1,4 times surpassed consumption level of 2000.

Main coal consumers are China, USA, India, Japan, Russia, South Africa, and Germany. 40% of the global energy is produced with coal. It is forecasted that demand for coal will continue to grow and by the year 2015 may increase by 32% in comparison with 2006, and by the year 2030 – by 59%. Two thirds of expected increase of demand will be initiated by China and India.

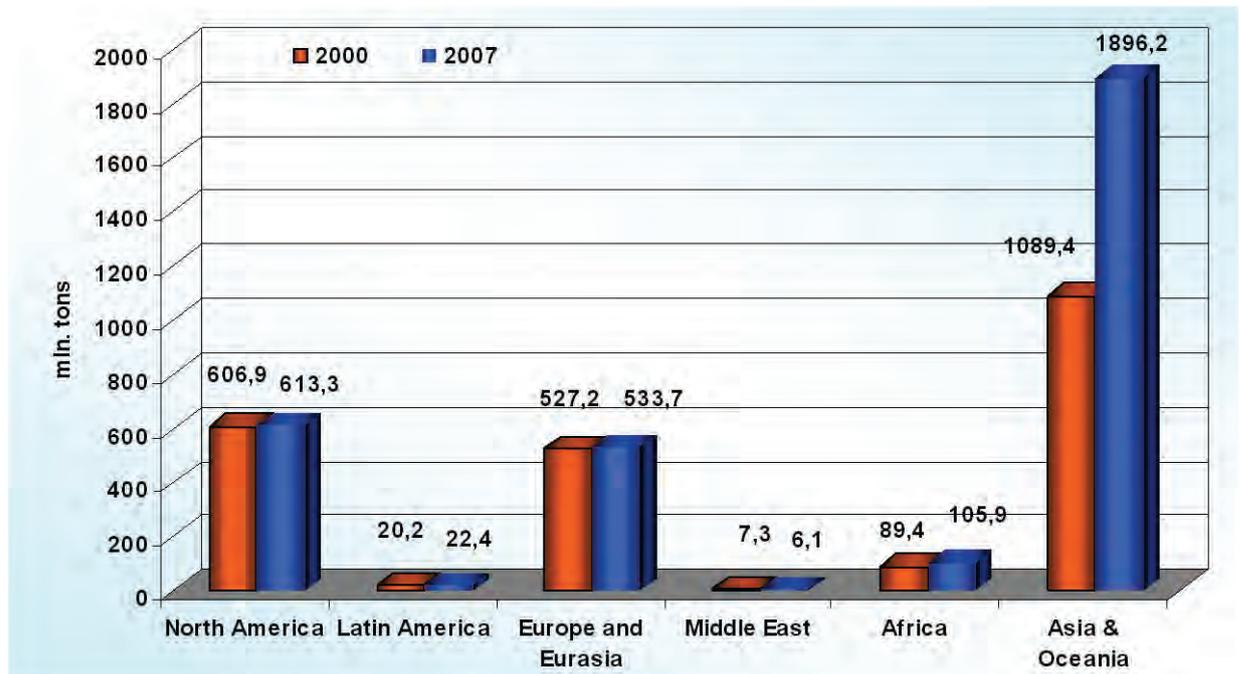
Worldwide Coal Consumption, in mln. tons (in oil equivalent)



Source: BP Statistical Review of World Energy

Technological base of global energy sector as well as the development of (global) industry points out to the fact that in the nearest 20 years share of coal in the world's energy sector (and extraction of coal, accordingly), especially of coal for energy purposes will continue to grow.

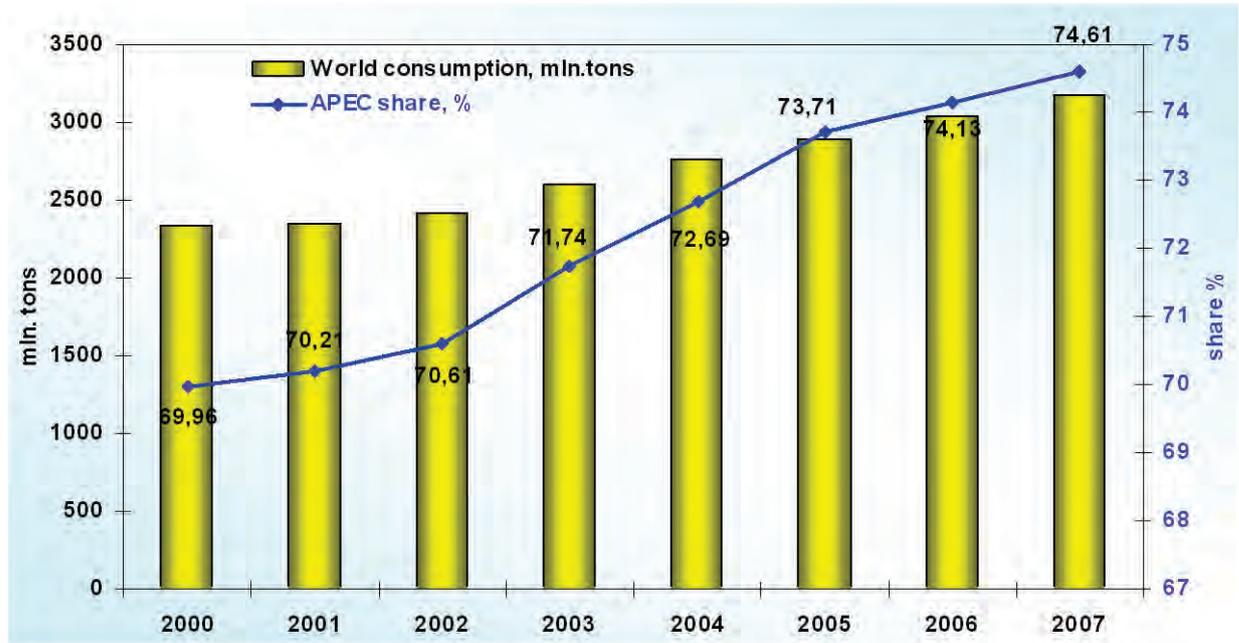
Coal Consumption by Regions in 2000 and in 2007, in mln. tons (in oil equivalent)



Source: BP Statistical Review of World Energy

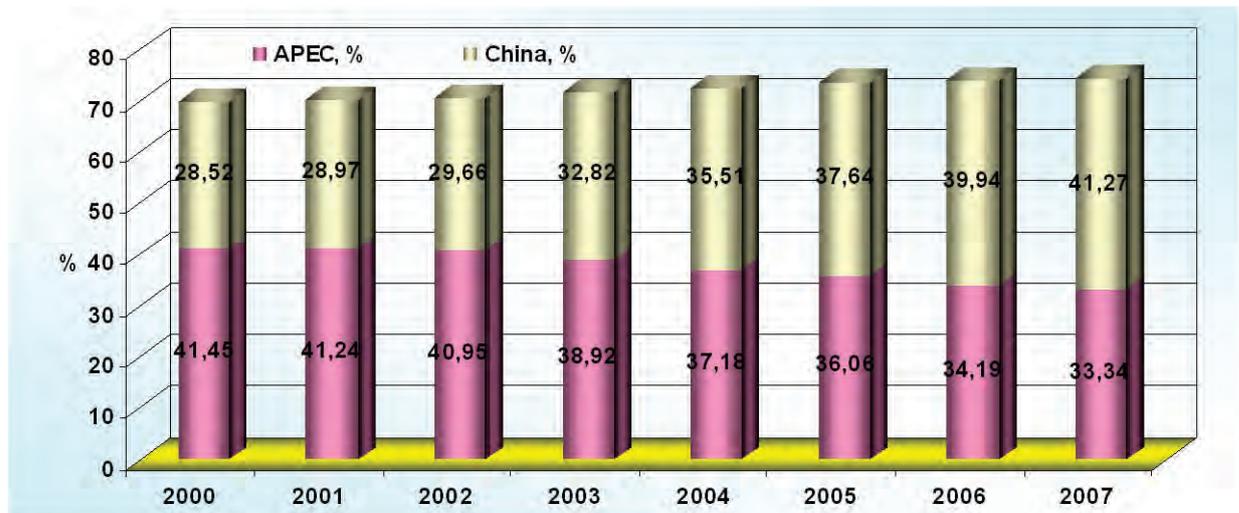
With each coming year APEC's share in the global coal consumption is growing. So, back in 2000 share of APEC in the global (coal) consumption was 70%, in 2007 it was 74,6%. Share of China (in terms of consumption and production), unlike those of other APEC members, keeps growing.

Global Consumption of Coal (in mln. tons) and Share of APEC in the Global Coal Use (%)



Source: BP, RUSMET

Share of APEC, Excluding China and Share of China in Global Coal Consumption, %



Source: BP, RUSMET

Coal Consumption by APEC, mln. tons (in oil equivalent)

Economy	2000	2001	2002	2003	2004	2005	2006	2007
Australia	46.5	47.9	51.3	50.5	53.1	54.9	56.9	53.1
Canada	31.8	34.0	31.6	33.4	29.9	31.7	30.9	30.4
Chile	3.0	2.3	2.4	2.3	2.6	2.6	3.2	3.3
China	667.4	681.3	713.8	853.1	983.0	1,088.8	1,215.0	1,311.4
Hong Kong, China	3.7	4.9	5.4	6.6	6.6	6.7	7.0	7.0
Indonesia	13.7	16.7	18.0	17.9	20.2	26.1	24.2	27.8
Japan	98.9	103.0	106.6	112.2	120.8	121.3	119.1	125.3
Korea	43.0	45.7	49.1	51.1	53.1	54.8	54.8	59.7
Malaysia	1.9	2.6	3.6	4.2	5.7	6.3	7.3	6.9
Mexico	6.2	6.8	7.6	8.6	7.0	9.1	9.1	9.2
New Zealand	1.1	1.3	1.3	1.9	2.0	2.2	2.2	1.7
Peru	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4

Philippines	4.3	4.5	4.7	4.7	5.0	5.7	5.5	5.9
Russia	105.2	102.4	103.0	104.0	99.5	94.2	96.7	94.5
Singapore	–	–	–	–	–	–	–	–
Chinese Taipei	28.7	30.6	32.7	35.1	36.6	38.1	39.6	41.1
Thailand	7.8	8.8	9.2	9.4	10.4	5.4	7.0	8.9
USA	569.0	552.2	552.0	562.5	566.1	574.2	565.7	573.7
Other	4.7	5.7	6.6	7.1	10.0	9.3	10.3	10.5
APEC, total	1,637.4	1,651.1	1,699.3	1,865.0	2,012.1	2,131.9	2,254.9	2370.8

BP Statistical Review of World Energy

The biggest coal consumers among APEC members are China and the USA. For the period of 2000-2007 China had doubled its consumption, which amounted to 1,215 mln. tons (in oil equivalent). In the same period, USA had increased its coal consumption by mere 0.8% up to 573,7 mln. tons (in oil equivalent).

USA demand for coal in 2008 was 1,122.8 mln. tons, which is by 9,8% over the levels of 2007 (then it was 1,022.9 mln. tons).

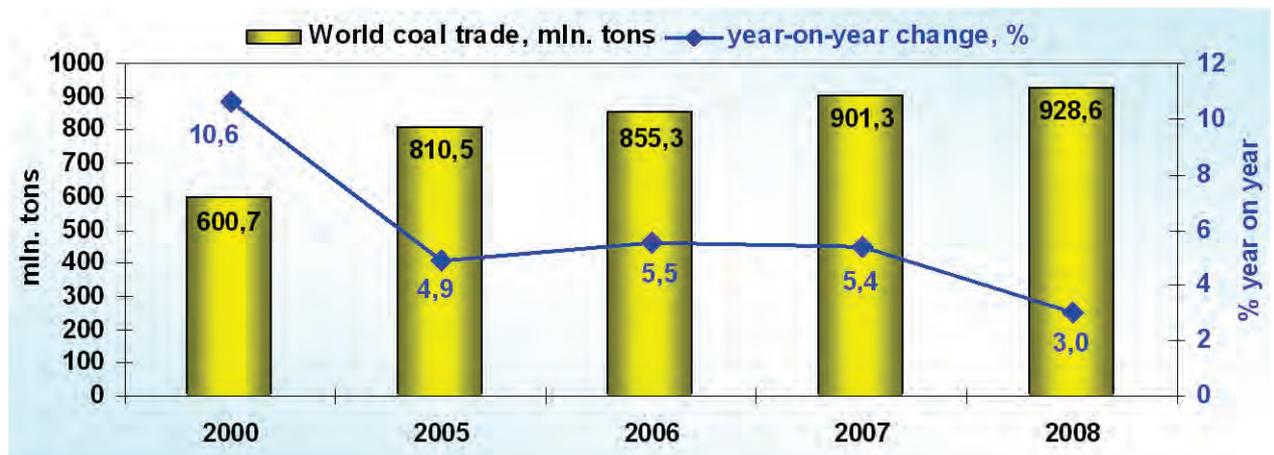
Demand of the US-based chemical enterprises in coal in the last year was 22,2 mln. tons (against 20,6 mln. tons in 2007). It is forecasted that in 2009 consumption levels for coking coal will go down to 20,2 mln. tons.

7.3. World Coal Trade

Uneven distribution of coal reserves in economies leads to development of foreign trade.

During 2000-2008, the world coal trade increased by 1.5 times from 600.7 to 914.7 mln. tons. Currently the world's exports and imports of coal products exceed 13% of total consumption volume. Declining demand will become a reason for the reduction of world's coal trade in 2009.

World's coal trade (mln. t.) and growth rate as compared to the previous year (%)



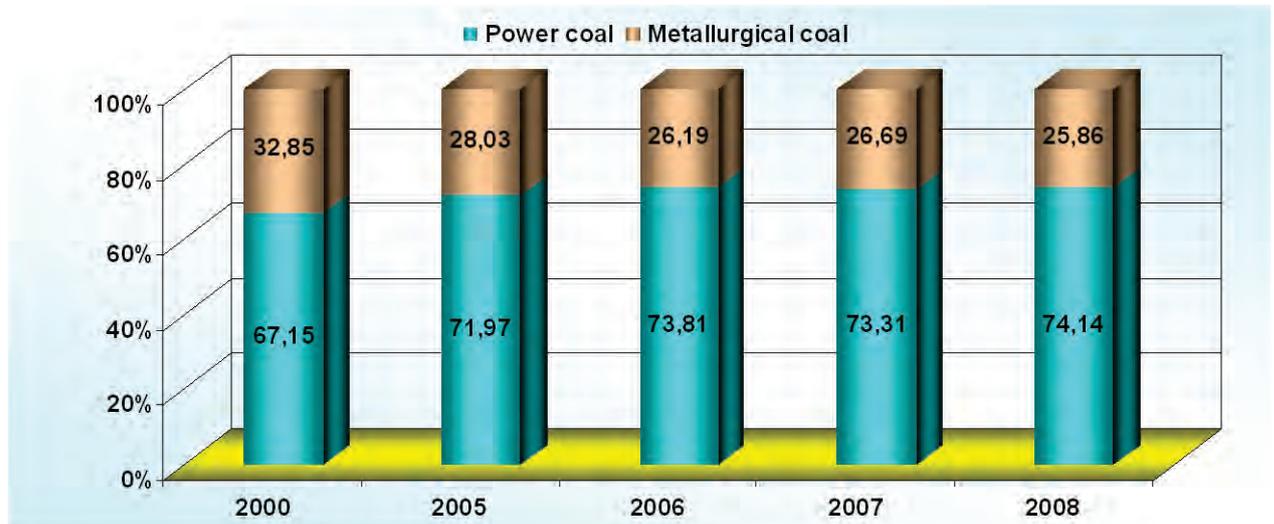
Source: AME, RUSMET based on United Nations Statistics Division

Coal Exports

In coal export trade, more emphasis is given to power-generating coal. Moreover, the proportion of power-generating coal in the world's trade is growing, and that of metallurgical coal is decreasing. The graph below indicates that the demand for thermal coal increases at a higher rate in economies which need to supplement their own mineral resources with imports

A further reduction of trade in metallurgical coal is expected in 2009 due to the crisis in the steel industry. Power generation sector, which uses power generating coal has been less affected by the crisis.

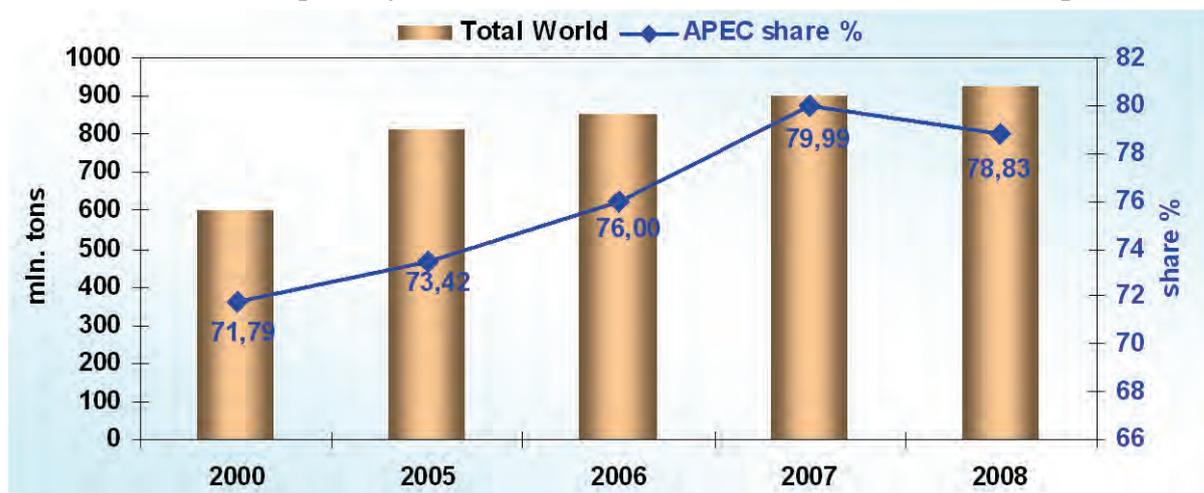
Coal foreign trade structure by types, %



Source: AME

From 2000 to 2007 the share of APEC in the world's exports of coal grew (from 71.8% in 2000 to 80% in 2007). However, in 2008 there was a decline of APEC's share in the world's exports of coal due to reduction in exports from a number of economies belonging to APEC. In particular, there was a decrease of coal exports from economies such as China, the USA, Viet Nam and Russia. The reduction of exports from China stems from the growth of domestic demand, in other cases – it occurs because of the crisis which is affecting the world's economy.

World's exports of coal (mln. t.) and APEC's share in the world's exports (%)



Source: RUSMET based on United Nations Statistics Division

The largest exporters of coal in APEC are: Australia, Indonesia, Russia and the United States. During the period under review there has been a sharp increase in the supply of coal to the world market from Australia (by 39.9% to 261.4 mln. tons), Indonesia (by 3.4 times to 197 mln. tons), Russia (by 2,2 times up to 97,4 mln. tons), there has also been an increase of the exports of coal from the United States, Viet Nam and Canada. At the same time, Chinese exports of coal have already been reducing for four consecutive years, which as it has been noted, is due

to increased demand in the domestic market. For example, in 2008 as compared to 2005, exports of coal from China dropped by 36.6% to 45.4 mln. tons.

Low demand for Russian coal in Europe encourages suppliers to expand and redirect target markets. To date, South-Eastern Asia is the most attractive region, particularly for Russian suppliers.

Exports of coal from APEC Economies, mln. tons.

Economy	2000	2005	2006	2007	2008
Australia	186,7	233,7	237,0	250,8	261,1
Canada	31,5	28,2	27,6	30,7	32,9
China	55,1	71,7	63,3	53,2	45,4
Indonesia	58,0	129,0	167,3	183,7	197,0
Russia	43,7	79,7	91,4	98,0	97,4
USA	53,0	45,1	53,1	64,9	77,9
Viet Nam	3,3	7,6	10,4	32,1	18,8
Others	0,0	0,0	0,1	7,7	1,3
Economies of APEC, total	431,2	595,1	650,0	720,9	732,0

Source: RUSMET based United Nations Statistics Division

The main global suppliers of metallurgical coal to the world market are Australia, the USA and Canada, and the main consumers are Asian economies (Japan, India, Korea, etc.) and the EU economies.

Largest exporters of metallurgical coal, mln. tons.

Economy	2000	2005	2006	2007	2008
WORLD, total	197,1	227,2	224,0	240,6	240,1
Australia	100,8	124,9	124,2	137,8	134,6
USA	29,8	26,0	25,0	29,3	38,7
Canada	28,4	26,7	24,6	26,7	26,6
Russia	7,6	11,3	10,3	13,3	13,6
Mongolia	...	2,3	2,2	3,1	3,6
China	7,8	5,3	4,4	2,6	3,5
Poland	5,2	3,1	3,6	2,4	1,5

AME, CRU

Australia

In 2008, Australia exported 261,4 mln. tons. of coal (of which 126.4 mln. tons was thermal, and 135 mln/ tons coking) which is 10.3 mln. tons. (or 4.1%) more than the 2007 export levels. Exports to Japan accounted for 118 mln. tons or 45% of total exports. India, Korea and Chinese Taipei are other significant importers. The average export price in 2008 was \$ 144.99 /t.

Exports of coking coal in 2008 decreased by 2,2% as compared to 2007 and amounted to 135 mln. tons. Average export price of coking coal in 2008 was \$189.56 /t. The main consumers of Australian coking coal are Japan and India, importing 50Mt and 24.8 mln. tons respectively in 2008.

In the supplies of coal the preference is given to solid grades of coal (more 62%). In 2008, shipment of hard coking coal from the economy was 83.6 mln. tons (lowered by 0.9%). Shipment of semi-soft grades and pulverized coal fuel (PCF) declined by 4.6% and amounted to 51 mln. tons.

Coking coal exports from Australia, mln. tons.

Type of coking coal	2007	2008
Total	137,894	134,623
including:		
Solid grades	84,442	83,647
Semi-soft grades and PCF	53,452	50,976

Tex Report

USA

The USA supplies part of coal produced in the economy to the world market. At the end of 2008, the U.S. exported 38.7 mln. tons of metallurgical coal, which exceeded the level of 2007 by 9.4 mln. tons (32%). The average price during this period increased by 51,1% and amounted to \$ 148.29 / t . Main consumers of the U.S. coking coal are Brazil, Canada and the Netherlands.

Metallurgical coal exports from the USA to other economies in 2008

Economy	Amount, thousand tons.	Volume, thous. \$	Average price, \$/t fas
Total	38 664,0	5 733 475	148,29
Brazil	5 456,8	862 571	158,07
Canada	3 330,6	333 421	100,11
The Netherlands	3 072,3	398 966	129,86
Italy	2 611,7	317 463	121,55
France	1 884,3	238 327	126,48
Great Britain	1 864,6	248 725	133,40
Turkey	1 702,8	382 336	224,53
Belgium	1 649,7	210 739	127,74

Tex Report

Canada

Canada provides significant amounts of coal for export. In 2008, the economy exported 32.91 mln. tons of coal, which is 7.2% more than in 2007. The main purchasers of Canadian coal are Japan and Korea. Shipments to Japan in 2008 increased by 6.3% up to 11.2 mln. tons, to Korea – by 15,3% up to 7 mln. tons. Approximately 81% of the total volume of Canadian coal exports is metallurgical coal.

At the end of 2008, exports of metallurgical coal from Canada slightly decreased (by 0.2%) as compared to 2007 and amounted to 26.64 mln. tons while the average export price rose to \$100.73 per ton and amounted to \$ 195.24 / t.

The main consumers of the Canadian metallurgical coal are Japan and Korea, which accounts for 37.5% of total exports.

Metallurgical coal exports from Canada to other economies in 2005-2008, mln. tons.

Economy	2005	2006	2007	2008
Total	26,80	24,64	26,68	26,64
Including:				
Japan	6,79	7,22	8,43	8,61
Korea	4,77	4,44	5,10	5,08
The USA	1,60	1,46	1,47	1,57
Brazil	1,72	1,58	1,45	1,45
Germany	1,76	1,68	1,73	1,38

Tex Report

Russia

According to customs statistics, exports of metallurgical coal from Russia in 2008 amounted to 13.614 mln. tons, which is 320 thousand tons (or 2.4%) more than in the previous year. Shipments to Ukraine, Russia's major consumer of coking coal, increased by 1,6% and amounted to 6.4 mln. tons. than in the previous year. Of the total exports, 1.556 mln. tons was shipped to Japan, which is 1.436 mln. tons or 48% less than in 2007.

Russian coking coal exports in 2007-2008, mln. tons.

Economy	2007	2008	Change , %
Total	13,293	13,613	2,4
Including:			
Ukraine	6,310	6,412	1,6
Japan	2,991	1,556	-48,0
Liechtenstein	0	1,061	-
Turkey	0,534	0,742	38,9
Romania	0,785	0,629	-19,8
Latvia	0	0,626	-
Finland	0,402	0,599	48,9

Tex Report

Viet Nam

Since February 15, 2009, Ministry of Finance of Viet Nam has decided to lower the export duty on coal, metallurgical coke and semi-coke from 20% to 10%. Due the global financial crisis, the exports of raw materials has dropped significantly, therefore many companies-exporters insisted on reducing taxes.

It should be reminded that the export duty on coal in the economy was established on January, 1, 2007 to restrict the export of coal due to the rising domestic demand. Since April 22, 2008 the Viet Nameese government raised export duty from 15 % to 20%. As a result of the increase, exports of hard anthracite coal, especially to China, fell distinctively. The export duties were expected to be increased up to 45%. However, the government suddenly reduced export duties to 10% on February, 15, 2009.

This year Viet Nameese suppliers are planning to export some 20 mln. tons of coal. Main consumers of Viet Nameese coal are China and Japan.

Viet Nam National Coal-Mineral Industries Group (Vinacomin) signed contracts with six Chinese companies for the supply of coal at a price which is 2 times lower than last year, to support export and save jobs because of the global crisis, which led to a decline in demand for coal.

Vinacomin plans to sell 16 mln. tons of coal to Chinese companies, including GD Power Development Co, at \$ 40 per ton fob. Providing market even while lowering the price by 2 times, would guarantee jobs for 100 thousand people.

Imports of coal

The share of APEC in world's imports of coal is growing (from 56.3% in 2000 to 59.2% in 2008).

Japan is the largest consumer of imported coal, not only in the economies of APEC, but in the world. During 2000 - 2008, coal imports into the economy increased by 31.9% and amounted to 191.7 mln. tons. However, the share of Japan in total imports of coal to the APEC economies is reducing (from 43% in 2000 to 34,9% in 2008). This has to do with sharply increased shares of other economies in the coal imports of APEC. In particular, the share of China increased from 0.6 to 7.4%, Malaysia - from 0,8 to 4,6%, the United States - from 3,3 to 5,6%.

World's imports of coal (mln. tons.) and APEC's share in the world's imports (%)



Source: RUSMET based on United Nations Statistics Division

Coal imports to APEC, mln. tons.

Economy	2000	2005	2005	2007	2008
Canada	19,8	21,1	20,9	18,5	20,6
Chile	4,4	4,0	4,9	6,0	5,5
China	2,1	26,2	38,1	51,0	40,8
Hong Kong, China	6,1	10,8	11,4	12,3	11,3
Japan	145,3	180,8	177,2	186,5	191,7
Malaysia	2,7	10,3	11,1	11,4	25,3
Mexico	2,4	7,3	7,6	5,3	5,0
Korea	63,8	76,8	79,7	88,3	99,6
Russia	25,5	22,4	25,7	23,4	30,9
Chinese Taipei	45,3	61,1	62,4	66,2	65,0
Thailand	4,1	8,5	11,1	14,2	15,9
USA	11,3	27,5	32,7	32,9	30,9
Others	5,3	7,5	7,4	7,8	7,1
APEC, total	338,1	464,2	490,3	523,8	549,7

RUSMET based on United Nations Statistics Division

Major importers of metallurgical coal, mln. t.

Economy	2000	2005	2006	2007	2008
Japan	62,4	78,9	79,7	79,9	80,7
India	12,2	19,2	19,1	23,6	26,1
Korea	18,0	16,2	15,1	17,3	19,7
Brazil	13,4	13,7	13,4	14,8	15,6
Italy	8,1	10,0	10,7	10,7	10,1
Germany	4,6	7,2	8,6	10,8	9,8
France	8,6	6,3	5,7	5,2	6,9
China	0,3	7,2	4,7	6,2	6,9
Great Britain	8,5	6,0	6,9	7,9	6,5
Belgium	3,8	3,7	4,0	4,2	5,3
Chinese Taipei	8,0	5,2	5,0	4,9	4,8

AME, CRU

China

Since the beginning of 2009, shipments of imported coal to China have increased dramatically. At the end of the first 4 months of 2009, China went from being a net exporter of coal to a net importer. Thus according to the results of January-April 2009, China imported

22.75 mln. tons of coal and exported 9.33 mln. tons. Thus, net imports amounted to 13.42 mln. tons.

At the end of the first 4 months of 2009, imports of coking coal to China has grown by 3,6 times (or by 4 531 tons) up to 6 275.6 thousand tons. In addition to that there is a dramatic increase of shipments from Australia (by 5.7 times) and Canada (by 4.8 times). It is worth noting that during the first 4 months of 2008, there was no shipments of coking coal from Russia to China, but in January-April, 2009, the economy received 149.3 thousand tons of Russian coking coal.

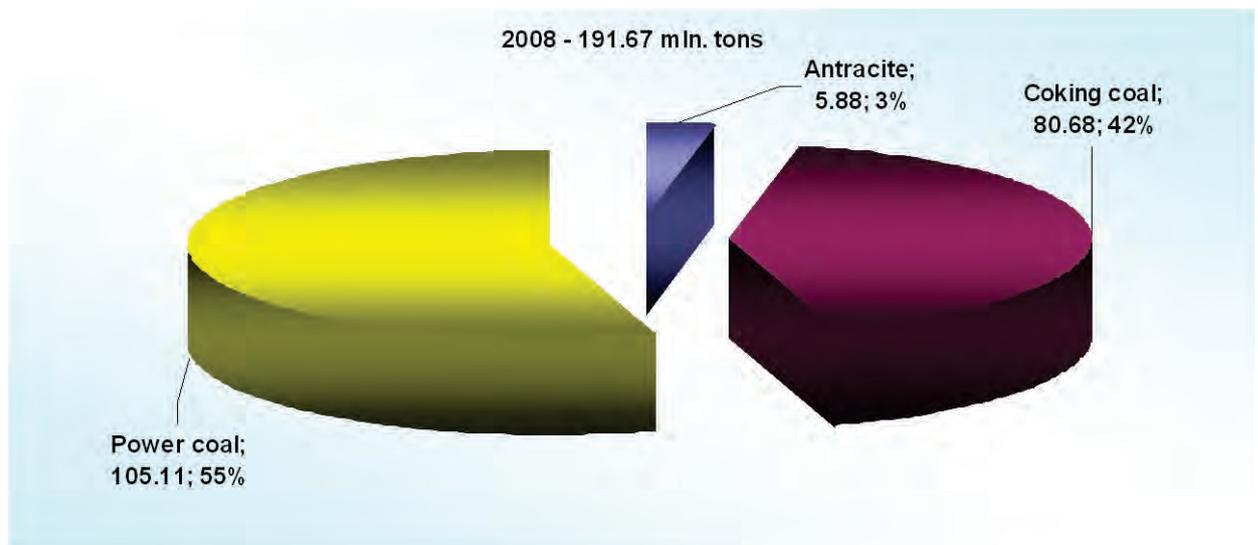
Japan

Main suppliers of coal to Japan are Australia, which in 2008 shipped 117.7 mln. tons of coal to Japan, and Indonesia with 35.5 mln. tons.

Of the total imports of coal, 42% falls on coking coal. At the end of 2008 the economy imported 80.7 mln. tons of coking coal at an average price of \$ 190.74 / t. The main supplier of this type of coal for Japan is Australia, which in 2008 shipped 45.9 mln. tons of coking coal at an average price of \$ 205.79 / t.

Shipments from Russia according to the results of 2008 amounted to 2 751.7 thousand tons, mainly it was hard coal grades with ash content of more than 8% at an average price of \$ 246.33 / t.

Imports of coal to Japan by types in 2008, mln. t. /%



Source: Tex Report

Imports of coking coal to Japan by economies in 2008

Economy	Amount, thousand tons.	Price, thous.yen	Average price, \$/t cif
Total	80 675,238	1 604 075 173	190,74
Australia	45 864,2	983 844 696	205,79
Indonesia	19 201,3	223 003 846	111,42
Canada	8 556,8	206 105 249	231,07
Russia	2 751,7	70 656 273	246,33
China	2 204,8	59 898 615	260,63

Tex Report

Average prices of coking coal supplied to Japan in 2008, \$/t

Type of coal	Average price	Russia	China	Australia	Canada	Indonesia
Coking coal of hard grades with ash content of less than 8 %	233,89	271,91	309,94	232,97	174,58	-
Other types of coking coal with ash content of less than 8 %	132,07	193,99	152,55	182,90	258,53	111,17
Coking coal of hard grades with ash content of more than 8 %	234,81	260,98	303,94	226,41	234,68	-
Other types of coking coal wit ash content of more than 8 %	191,58	223,77	276,68	187,67	228,87	233,55

Tex Report

Viet Nam

It is projected that Viet Nam in 2012 will import much less coal than it was expected earlier, since the financial crisis led to a delay in construction of new power plants. According to the Vinacomin projection, the economy will import 2 mln. tons of coal in 2012 instead of the Government's assessment of 10.5 mln. tons.

By 2010, coal production in the economy is estimated at 40-45 mln. tons instead of 48-50 mln. tons. At the same time, exports of coal in 2010 will be 20-22 mln. tons instead of the Government's assessment of 16 mln. tons.

The coal industry in Viet Nam needs investing VND279 trillion (\$ 16.4 billion) within the next 17 years, to increase coal production up to 100 mln. tons by 2025. Funding shall come from governmental resources and loans.

During 2010-2025, coal demand in Viet Nam will have increased by more than 10 times. Demand in the domestic market will grow from 32.5 mln. tons in 2010 to 98 mln. tons in 2015 and to 330 mln. tons in 2025. Two thirds of the demand will come from coal-fired power plants.

Japan, India and Korea are three largest importers of metallurgic coal. In 2008, 52,7% of total metallurgic coal imports fell on these three economies.

Korea

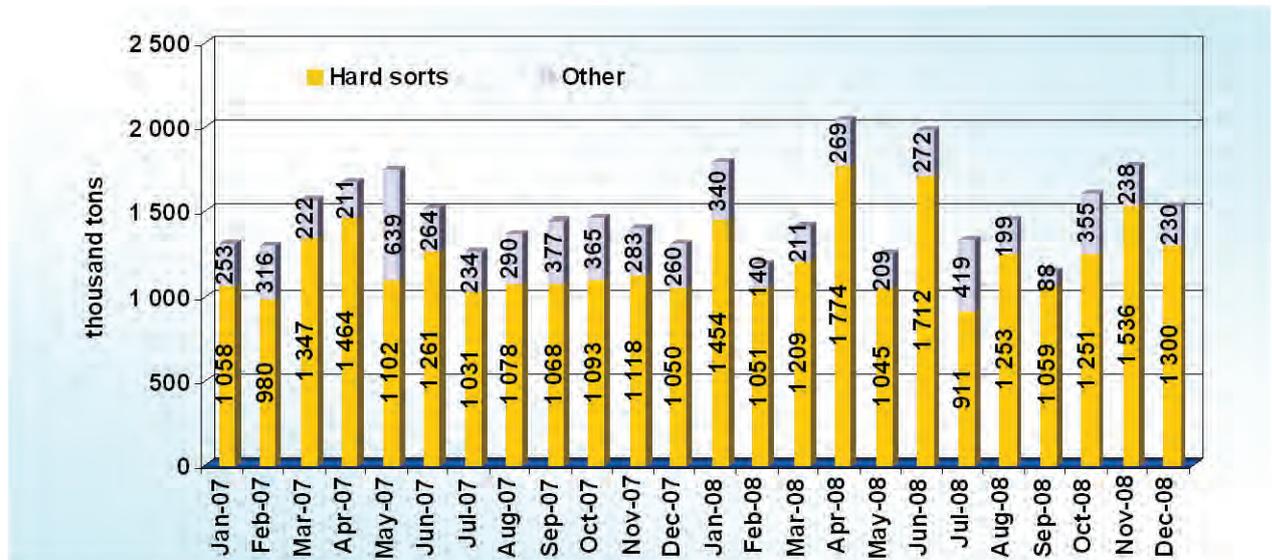
Korea is the second largest, after Japan, importer of coal in the world. Demand for coal in Korea this year was supposed to increase because of implementation of new energy generating capacities. Demand for coal which is used primarily in the power industry of the economy should increase by 30% while consumption- by 28.2%. It should be noted that Korea is the second largest importer of coal from Australia.

In 2008, coal imports in Korea increased by 12.8% as compared to 2007 and amounted to 99.58 mln. tons. About 20% of total imports of coal was coking coal.

At the end of 2008, Korea imported 19.7 mln. tons of coking coal, which is 13.9% more than the level of 2007. Hard coking coal grades were the major part of the purchases (80.9% of the total imports). Thus, on the basis of 2008 the economy bought 15.9 mln. tons of this type of coal in the world market, which is 15.8% higher than the level in 2007. Imports of other types of coal increased by 6.7% and stood at 3.76 mln. tons .

The main suppliers of coking coal to this economy are Australia and Canada.

Imports of coking coal to Korea by months, thousand tons.



Source: CRU

7.4. Price Trends in the Coal Market

In mid-March, a new standard of contract prices was established in the course of negotiations on the prices of metallurgical coal between Billiton Mitsubishi Alliance (BMA) and Japanese consumers. Thus, the contract price in 2009 f.y. for coking coal of hard grades, depending on the grade, was \$ 129 fob for Peak Downs and Saraji coals, \$ 128 fob Goonyella and Riverside coal, and \$ 115 for Gregory coal. Thus, compared with the prices of the previous fiscal year, contract prices declined from \$ 170 - \$ 172 / t, representing 57-59,6%.

After this, the price level for 2009 f.y. was agreed upon with other suppliers like Rio Tinto, Anglo Coal, Xstrata Coal, Peabody Energy, Teck Coal (Canada).

It should be noted that prices for BMA high quality hard coking coal grades (Peak Downs and Saraji) were set at \$ 300 /t fob in 2008 f.y.

The sharp decline in prices for coking coal has led to a decline in the demand for it from metallurgical enterprises, particularly due the forced reduction of production in iron and steel industry in Japan, Europe, and the United States, caused by a drastic downturn in the global economy. For example, Japanese manufacturers have reduced steel production by 40%.

Since 2009, demand for metallurgical coal has declined as a consequence of reducing demand for metal products due the economic downturn. Reduced demand for coal has led to reduction in contract prices for 2009 f.y. For example, prices for hard coking coal grades dropped from \$ 170-172 per ton a year ago to \$ 115-129 / t fob (a decrease by 57-59%).

Such a sharp decline in prices for hard coking coal grades (more than twice) along with falling demand for metallurgical coal, caused a serious blow to the export-oriented suppliers from Australia and Canada.

Moreover, suppliers from Canada have been affected more severely because of higher production and transportation costs than those of Australian manufacturers.

The favorable factor for Canadian suppliers was the fact that the contract prices did not drop down to the level of 2007, as it had been expected, due to an increased demand from China. If the prices for hard coking coal grades had dropped to the level of 2007 f.y. (\$85-98/t fob), the coal mines in the north east of Canada would have had to close down. However, contract price for 2009 has stood at \$115-129/t fob, which will make possible to keep the mines working but will lead to lower production volumes.

The specifics of the negotiations for the 2009 fiscal year were the fact that the agreement on the price level for the Russian metallurgical coal was reached with producers of pig iron. In fact, in February, many Russian suppliers of coal, except for Mechel, agreed on the prices for hard coking coal and pulverized fuel grades (PFG) for 2009 f.y. with suppliers from other economies, including Australia, and accepted the price reductions required by Japanese consumers.

The prices for Russian suppliers were set at \$85-95/t. fob for hard coking coal grades and at \$80-85/t. for pulverized fuel. After the Australians and Canadians agreed upon their prices for hard coking coals that stood at \$115-129/t fob, the Russian prices proved lower by \$30/t. Russian suppliers made a drastic decline in the prices for hard coking coal grades so as to find new markets in Asia, particularly in Japan, because of the dramatically reduced demand for it not only in the domestic market of Russia, but in the main export market - in European economies.

In mid-April, negotiations on the prices for Chinese metallurgical coal came to completion. Prices for high quality hard coking coal grades were set at \$130 per ton fob. Prices for Chinese coking coal in the domestic market by far exceed the export prices, partly due to the high demand for coking coal in the domestic market. Exports from China will recover, when there is a balance between domestic and export prices.

In early March POSCO from Korea and Australian suppliers from Queensland agreed on the price for pulverized fuel for 2009 f.y. at about \$ 90 /t fob. After that Japanese consumers began to make contracts with suppliers of pulverized fuel from Queensland. Essentially, Japanese consumers make contracts pulverized fuel at \$ 87-88 / t fob.

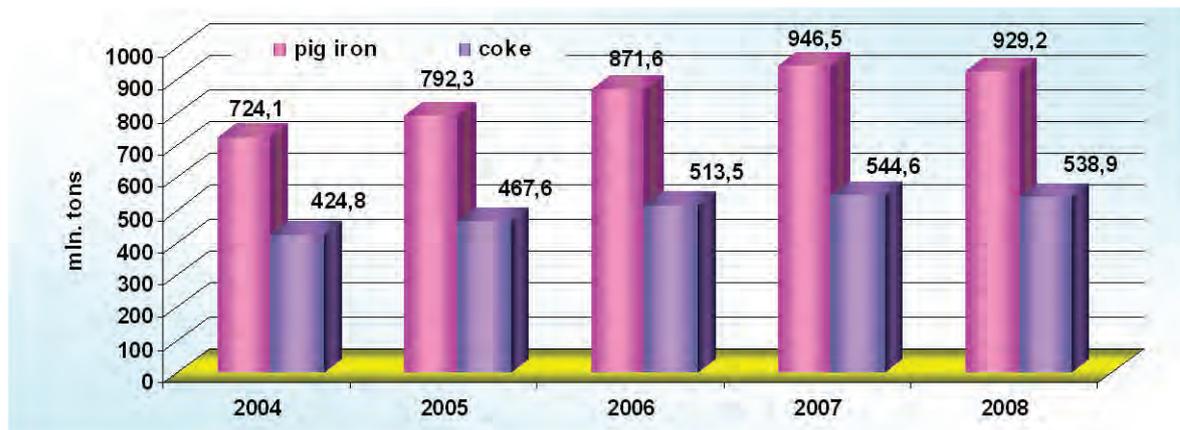
At the same time, prices for Viet Nameese anthracite for 2009 f.y. were set at \$ 90 / t fob for pulverized fuel (Hongay No.6) and at \$ 80 / t fob for concentrate for pulverized fuel (Hongay No.8).

As far as contract prices for semi-soft coking coal grades, in the middle of March iron producers agreed on the price for power generating coal supplied from New South Wales (Australia) at \$ 70/t fob. In mid-April, negotiations with major suppliers were completed, and the price for semi-soft coking coals stood at \$ 78-83 / t fob.

8. APEC'S ROLE IN THE WORLD MARKET OF COKING COAL*

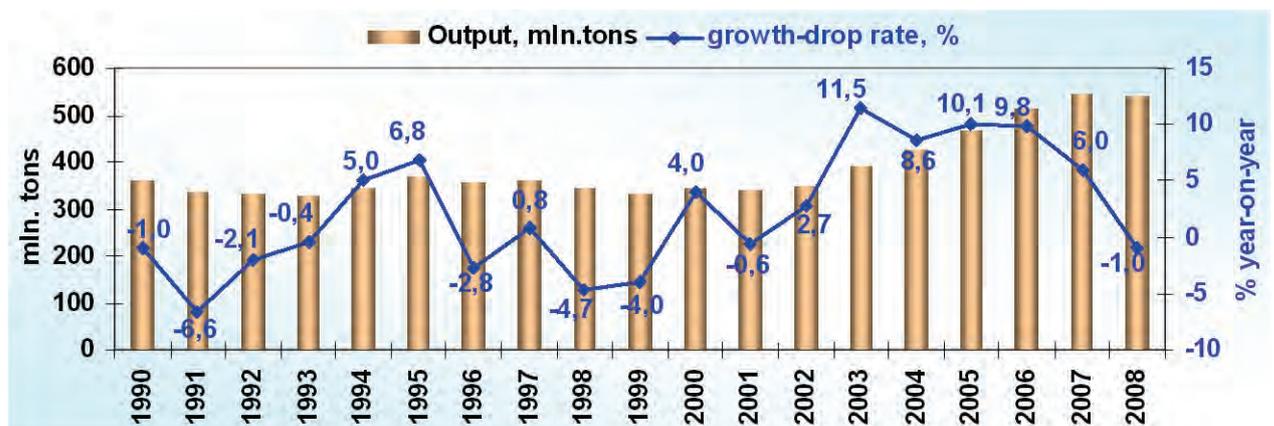
The development of the world's steel industry governs both growth and decline in production and consumption of coke. According to RUSMET, in 2008 the world production of coke amounted to 538.9 mln. tons, which is 1% less than in 2007. During 2000-2008 world's production of coke increased by 1.6 times. Growth of production has by large occurred because of Asian economies, especially China.

World's production of coke and iron, mln. tons.



Source: WSA, RUSMET

Dynamics of worlds' coke production (mln. tons.) and growth-reduction rate (% as compared with the prev.year)



Source: Resource-Net, RUSMET

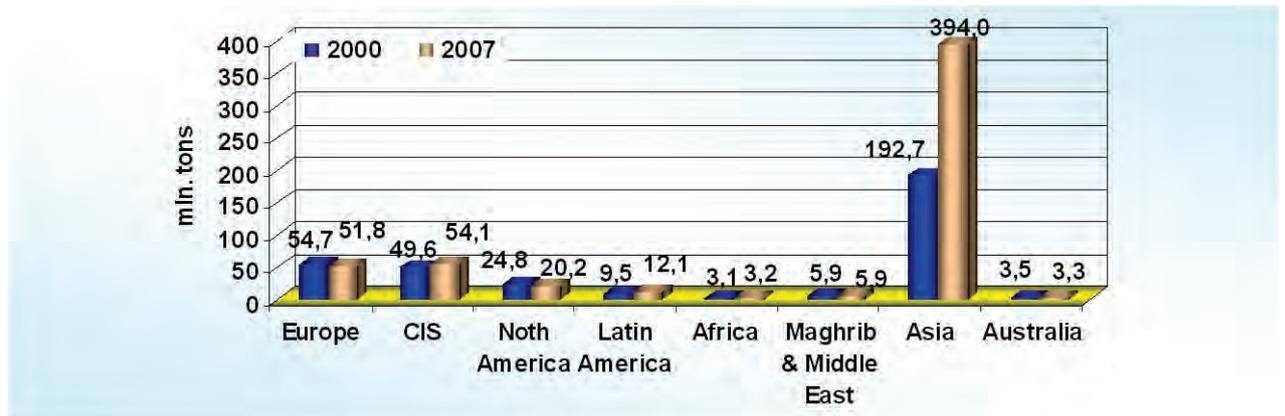
During 2000-2007 coke production in APEC increased by 1.84 times and amounted to 432.18 mln. tons. During the period under review the share of APEC in the world production of coke greatly increased: from 68.3% in 2000 to 79.4% in 2007 which primarily occurred due to increased production of coke in China.

The largest coke producer is China, that makes about 60% of global coke production. Also major manufacturers of coke are Japan, Russia, Ukraine, India and the United States.

Main consumers of coke are steel plants. Also, stable volumes of coke are used by non-ferrous metal productions, ceramic, glass, chemical, and a number of other industries.

* Data Sources: WSA [2], AME [5], United Nations Statistics Division, Resource-Net, Tex Report [3]

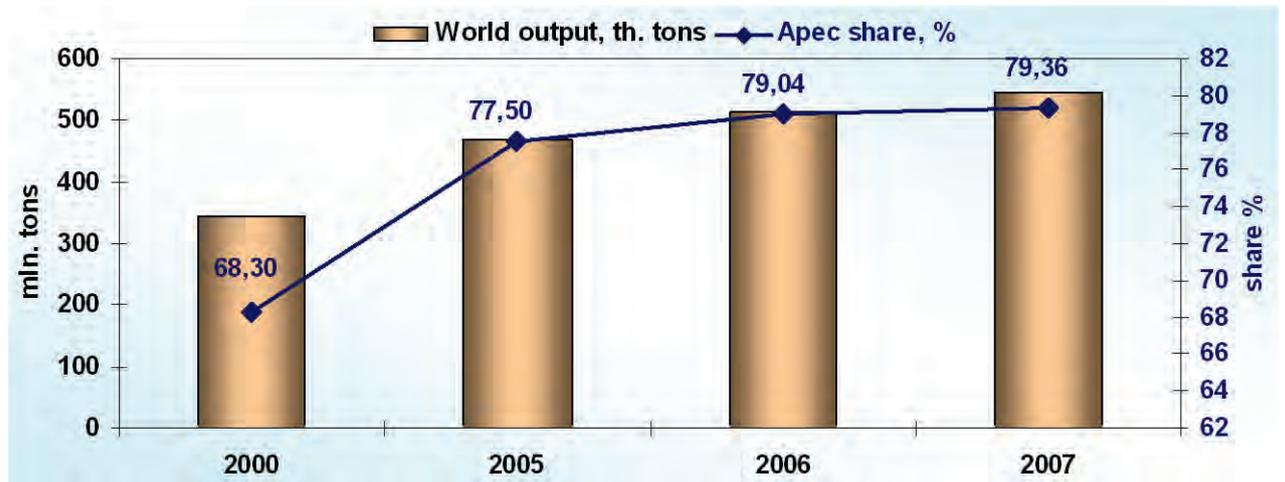
Coke production in regions in 2000 and 2007, mln. tons.



Source: Resource-Net, RUSMET

China is the largest coke consumer among other economies. In 2008, the use of coke in this economy exceeded 310 mln. tons.

World's coke production (mln. tons.) and APEC's share in world's production (%)



Source: Resource-Net, RUSMET

APEC's coke production, mln. tons.

Economy	2000	2005	2006	2007
Australia	3,479	3,278	3,117	3,323
Canada	3,242	3,098	3,136	3,051
Chile	0,48	0,493	0,494	0,493
China	121,84	254,117	297,68	321,714
Japan	38,396	38,095	38,077	38,354
Korea	11,267	10,246	9,887	9,949
Mexico	2,235	1,973	1,998	2,036
Russia	30,047	31,703	32,661	33,91
Chinese Taipei	4,348	3,953	3,577	4,11
USA	19,307	15,266	15,103	15,097
Viet Nam	0,13	0,139	0,141	0,14
APEC's economies, total	234,771	362,361	405,871	432,177

Resource-Net, RUSMET

Chinese coke producers cut production volumes due to lower demand for it from the steel industry. Some producers of coke are even willing to sell their products below cost, which will lead to lower profits.

In 2008, coke production in China fell by 0.4% as compared to 2007 and stood at 323.5 million t. The most significant decrease in production of coke in the previous year occurred in November -December – it fell by 25-30% as compared with the previous year.

In December 2008, the Chinese Government examined the state of coking industry in the economy, identified the deployment and allocation of production, technologies, equipment, and equipment for environmental protection. This will enable them to discontinue the use of outdated equipment, to reduce unnecessary power, as well as to increase the concentration of production and competitiveness of China's coke industry.

So far only 49 companies have been found fit for work, with 26 of them being located in the province of Shanxi and having a capacity of more than 600 thousand tons / year.

The Shanxi Coking Industry Association (SCIA) and 25 companies that are members of the association, recently created a joint venture to purchase coking coal in the province of Shanxi.

The joint venture, Shanxi United Coal Coke Co, will allow individual producers of coke to buy coking coal on long-term contracts. Until that time, most coke producers were unable to make long-term contracts with suppliers of coking coal in the province of Shanxi, because their purchases were in small volumes. Most of them bought coking coal in the spot market, where prices of RMB are 150 / t (\$ 22 / t) higher than the contract prices.

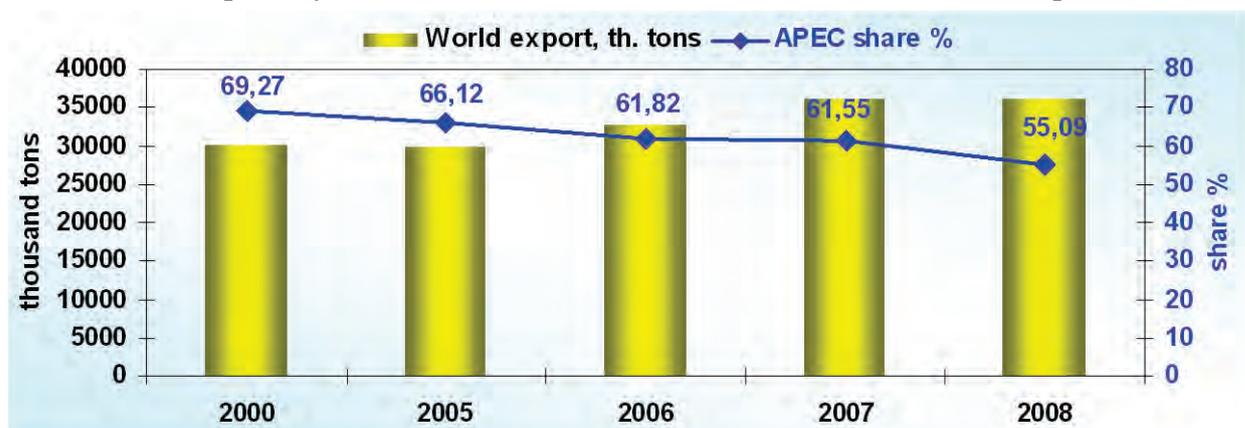
Although prices of coke have begun to grow due to the restoration of domestic steel market, high price of coking coal is still a threat. Currently, the price of metallurgical second-rate coke in province Shanxi is RMB1 650-1 700 per ton, while producers buy coal at RMB1 250-1 300 / t.

Creating a joint venture in the province of Shanxi will create resources of coal in the province. SCIA - is the largest shareholder in the joint venture, the remaining 70% are distributed among private producers of coke, including Shanxi Meijin Energy Co., Shanxi Ruide Coking Co., Shanxi Lubao Group and Shanxi Jinye Coal & Coking Group.

8.1. Main Coke Exporters

During 2000-2008 foreign trade in coke increased by 20% and amounted, according the estimations of RUSMET, to 36,15 mln. tons. Exports of coke from APEC were relatively stable and stood at some 20 mln. tons. The only exception was 2007, when volumes of exports rose to 22.3 mln. tons, which occurred due to increased shipments from China and Russia.

World's exports of coke (thousand tons.) and APEC's share in world's export (%)



Source: RUSMET based on United Nations Statistics Division

China is not only the largest consumer of coke, but also is its main supplier to the world market. However, the Chinese government is trying to reduce the taking coke out of the economy by increasing export tariffs and reducing export quotas.

Also, Poland and Russia supply significant amounts of coke to the world market.

It should be noted that the share of APEC in world's exports of coke has been steadily declining: 69.3% in 2000 and 55.1% in 2008.

Exports of coke from APEC, thousand tons.

Economy	2000	2005	2006	2007	2008
Australia	100	351	292	604	1151
Canada	150	362	103	178	120
Chile	42	31	38	35	30
China	15214	12883	14541	15330	12127
Japan	2611	1639	1981	1607	974
Malaysia	0	2	4	29	1182
Korea	0	14	12	10	10
Russia	1508	2840	1786	3151	3002
The USA	1220	1634	1473	1310	1318
Others	35	10	4	3	3
APEC, total	20880	19765	20233	22256	19916

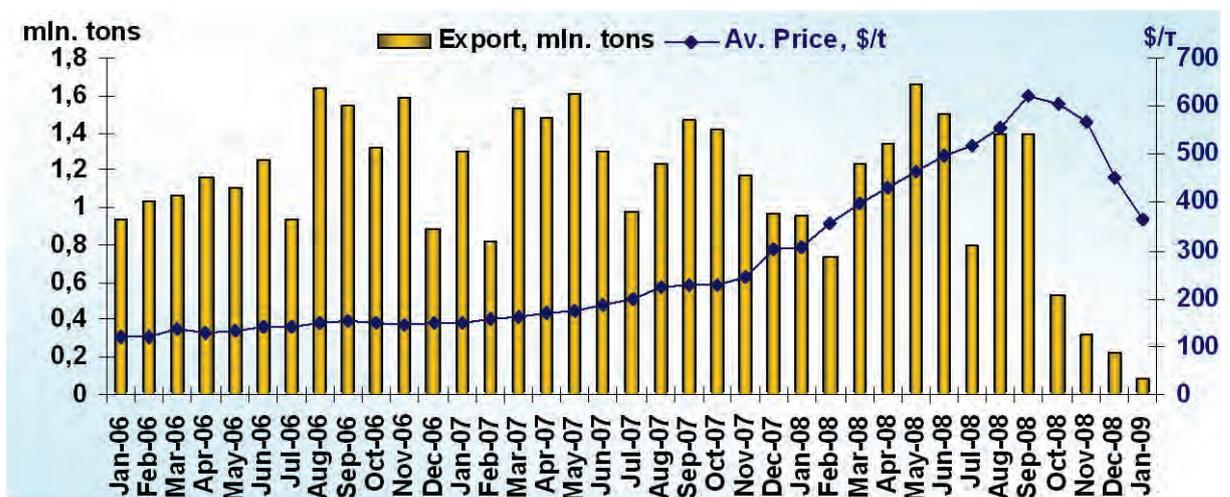
RUSMET based on United Nations Statistics Division

China

Since production of coke is a highly polluting, energy-and resource-consuming production, the Chinese government formulated a policy of reduction of coke exports. The Ministry of Finance increased the temporary export duties from 15 to 25% beginning on January,1, 2008. The Ministry of Commerce removed 7 companies from the second list, to which export quotas are granted. In addition to this, beginning on August 20, 2008, export duties on coke have been increased to 40%.

Because of export quotas and high export duties on coke, export of this product from the economy fell drastically last year. Furthermore, the economic crisis that occurred in the second half of 2008 led steel companies to start reducing production because of declining demand, which in turn led to a decline in demand for raw materials. Exports of coke began to fall, resulting in lower export prices.

Export of coke from China (mln. tons.) and average export prices (\$/t fob)



Source: Tex Report

In 2008, the economy exported 12.127 mln. tons of coke, which is a 20.7% decrease as compared to the previous year. In value terms, exports of coke stood at \$ 5.81 billion (an increase by 90.1%). Average export prices of Chinese coke in the past year increased by 140% and amounted to \$ 478.9 / t.

Due to the reduction in demand, the export of coke began to fall in October of last year and continued to fall in November and December. The average monthly price fell from a peak in September (\$ 620 / t) to \$ 446.4 per ton in December. In January 2009, exports of coke from the economy dropped to 80 thousand tons and the average export price – down to \$ 365.05 / t.

China's Ministry of Commerce (MOC) has issued the first part of the export quota for 2009. The first part of the quota was only 5.78 mln. tons and was distributed among 37 coke exporters. The largest of these companies are Sinochem (440 thousand tons), Minmetals (400 thousand tons), Shanxi Datuhe Trading (360 thousand tons), Sinosteel (330 thousand tons) and Xiaoyi Jinyan Power Coal Chemicals (270 thousand tons).

The export quota for this year will definitely be lower than in the previous year, since the second part of the quota is usually lower than the first one. The second part of the quota will probably be released in mid-2009.

China's Ministry of Commerce (Mofcom) released 591 tons of export quotas for coke exporters with foreign investments, which is 53% less than in 2008.

Quotas are distributed among 11 companies, located in the provinces of Shanxi, Yunnan and Henan. The main buyers of export quotas are Shanxi Sanjia Coal Chemicals (120 thousand tons), Shanxi Jiexiu Antai Coking (115,500 thousand tons) and Shanxi Loudong General Nice Coking & Gas (105 thousand tons).

In 2008, the export quota stood at 1 252 thousand ton for the 13 companies with foreign investments in China.

Russia

In 2008, exports of coke from Russia decreased by 4,8% in comparison with 2007 and amounted to 3 million t. The main consumers of Russian coke are Belgium and Kazakhstan, which accounted for approximately 51% of total exports of coke from the economy last year. The shipments of Russian coke to Ukraine fell drastically as compared to the results of 2008 (an almost 1 mln. t. decrease down to 436.4 thousand tons).

Exports of coke from Russia in 2007-2008, thousand tons.

Economy	2007	2008	Change, %
Total	3 151,148	3 001,142	-4,8
Including:			
Belgium	337,705	813,746	141,0
Kazakhstan	666,472	714,086	7,1
Ukraine	1 418,180	436,361	-69,2
Iran	168,900	431,304	155,4
Germany	218,947	221,428	1,1
Slovakia	121,492	138,696	14,2

Tex Report

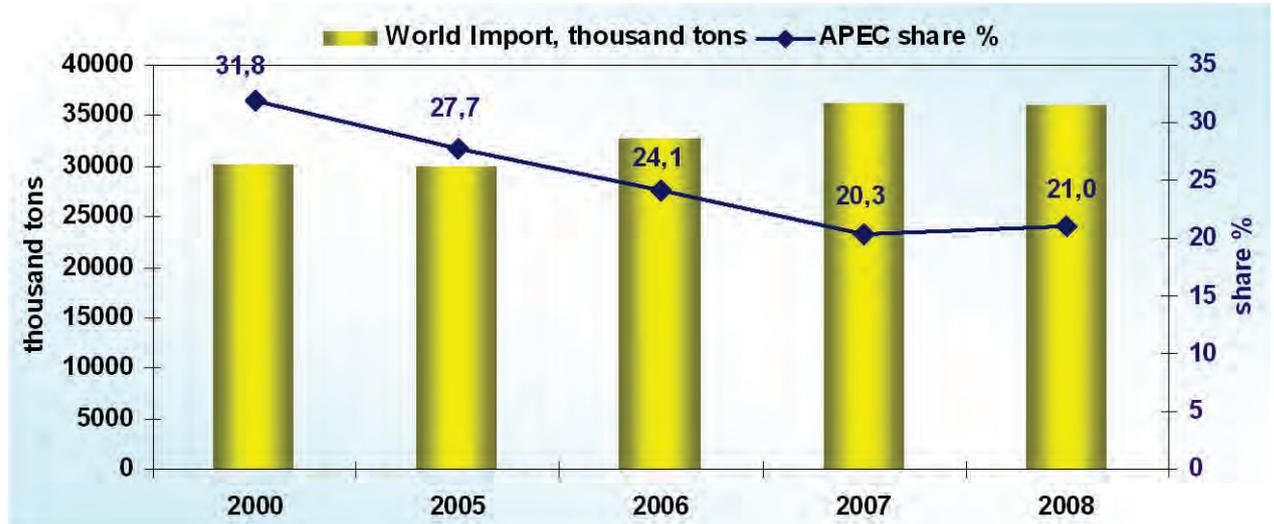
8.2. Importers of Coke

Main consumers of imported coke are Germany and India. In fact, India has increasingly been buying coke in the world market due to the fact that it does not have much coking coal

reserves nor the capacity for manufacturing coke. In 2007, imports of coke in the economy increased by 8,8% and amounted to 4.7 mln. tons

APEC's share in the world imports is also declining. Thus, in 2000, it was 31.8% and in 2008 it was 21%. It occurred primarily because of Japan reducing purchases of imported coke during 2000-2008 which declined by 38.6%.

World's imports of coke (thousand tons.) and APEC's share in world's imports (%)



Source: RUSMET based on United Nations Statistics Division

Imports of coke to APEC, thousand tons.

Economy	2000	2005	2006	2007	2008
Australia	54	31	180	20	1
Canada	1062	948	839	757	1406
Japan	2693	2693	1778	2090	1654
Malaysia	421	21	229	674	17
Mexico	638	391	324	299	299
Peru	198	235	330	316	316
Korea	305	341	314	551	314
Russia	167	153	53	169	164
Thailand	74	71	54	66	54
The USA	3648	3202	3690	2231	3270
Viet Nam	12	56	69	115	69
Others	320	135	20	64	19
Total APEC	9594	8277	7881	7353	7584

RUSMET based on United Nations Statistics Division

Japan

In 2008, Japan imported 1 654.4 thousand tons of coke, which is 20.9% less than in 2007. The average price of imported coke stood at \$ 586.25 /t. China has been a major coke supplier to Japan and its share in the total shipments runs up to 85%. Supplies from China were made at an average price of \$ 610.5 / t.

Nippon Steel had to import coke from China due to the fact that, because of the fire coke furnace batteries 4 and 5 had been stopped at Yawata. In 2008, Nippon Steel imported 487 thousand tons of Chinese coke for its factories in Yawata, Kimitsu and Nagoya.

Imports of coke to Japan in 2008 (thousand tons.) and average import price (\$/t)

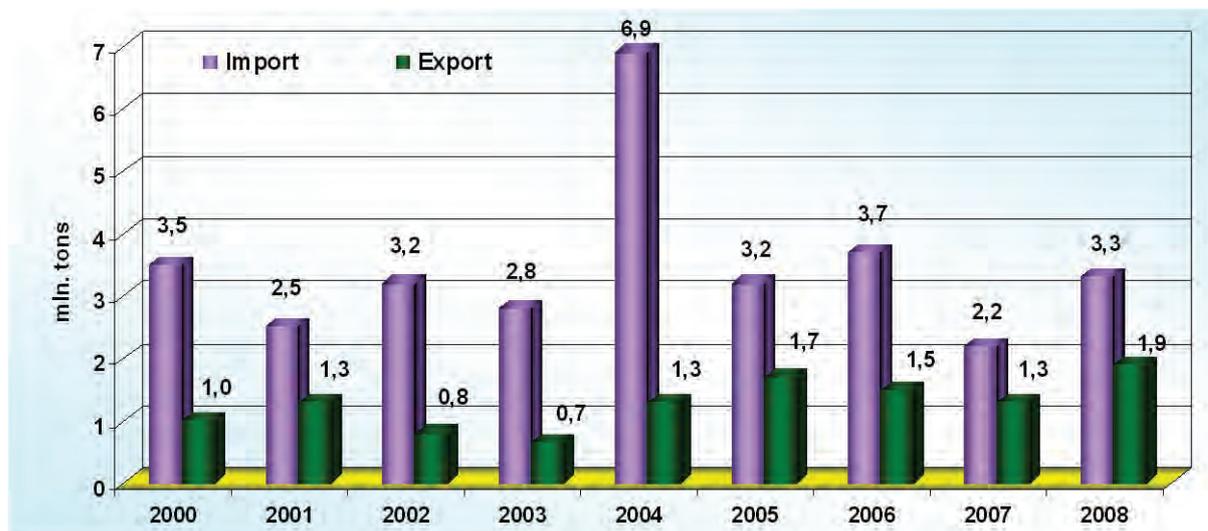
Economy	Volume, thousand tons.	Average price , \$/t cif
Total	1 654,4	586,25
China	1 425,8	610,50
Australia	75,9	517,47
Chinese Taipei	87,1	381,64

Tex Report

USA

The USA is the largest importer of coke among APEC's economies. In 2008, coke imports to the USA amounted to 3,27 mln. tons., which is 49,3 % more than that of 2007. Last year an average import price increased by 2,4 times and went from \$215,5/t to \$512,7/t . China and Japan are largest importers of coke to the USA and their share in the total imports runs up to more than 73 %.

Foreign trade in coke in the USA, mln. tons.



Source: Tex Report

Coke imports to the USA 2008, thousand tons.

Economy	Volume		Average price, \$/t fas
	Thousand tons.	thous. \$	
Total	3 268,58	1 675 916	512,7
China	2 148,83	1 212 768	564,4
Japan	547,50	200 598	366,39
Columbia	376,29	166 430	442,3

Tex Report

9. WORLD MARKET OF PIG IRON*

9.1. Overall Review of the Pig Iron Market

Even in the first half of 2008 the world market experienced a strong growth of demand for ferrous metals, including pig iron, which due to a dramatic rise of the cost of fuel and power resources, led to a significant increase in its price. In part, this growth of prices for ferrous metals in the world market during this period was associated with speculative actions of certain companies as individual market participants. Growth of prices was also encouraged by data provided by leading analytical companies which projected a further increase in prices due to the insufficient supply of ferrous metals in the market.

But the situation changed even by the beginning of the fourth quarter. Demand for ferrous metals, including pig iron, in the world market, amid a drastically growing global financial crisis, declined rapidly. As a result, most of the leading iron and steel companies were forced to cut production of pig iron, steel and rolled products, to take out of operation whole enterprises or separate units or to considerably reduce the loading of existing equipment.

The crisis had a particularly serious affect on the metallurgical complex of the CIS. On the one hand, this occurred due to the export-orientation of metallurgical enterprises in Russia, Ukraine and Kazakhstan, and on the other one due to the weak steel and iron consumption in the market of this region. Moreover, problems with lending to projects in the construction field, a sharp reduction of purchasing power along with non-payments crisis made this already difficult situation even worse.

Blowing-out of blast furnaces does not happen only at the iron and steel enterprises of the CIS, but also at the leading steel companies both in Europe, and Asia, including Japan and China. Thus, at the end of January of 2009, JFE Steel stopped the blast furnace 3 which output was 2.5 mln. tons per year at the Fukuyama plant. A little earlier, the company had stopped the blast furnace 3 with the output of 3.25 mln. tons per year at the Kurashiki plant. This decision of the company's management is definitely linked to the situation on the world market. Obviously, the blown-out furnaces will be brought back into operation as the market situation improves.

Back in September of 2008, blast furnace 1 with an output of 3 mln. tons of pig iron per year was stopped for the reconstruction at the Baoshansk iron and steel plant belonging to Baosteel Iron and Steel Co. The reconstruction of the furnace was completed in three months, but the company's management due to a low demand for ferrous metals was not in a hurry to put the reconstructed unit in operation. Currently, the companies have put the unit back into operation.

Leading steel companies of the world, including ArcelorMittal Steel Group, are forced to shut down their main metallurgical units, including blast furnaces. For example, ArcelorMittal Steel Group's plants in France in Florange and Fos-sur-Mer at the beginning of the 2009 worked at 50% of their capacity. One of the two blast furnaces were shut at Florange as early as in November of last year. It was expected to be put back in operational in February of this year. But, according to the Group's estimation, the blast furnace is unlikely to be put into operation during the first half of 2009. The trade unions do not believe that the furnace will be put back in operation anytime this year. Overall capacity of the two blast furnaces at Florange is 2.8 mln. tons per year.

There are two blast furnaces with overall capacity of 5.1 mln. tons per year at Fos-sur-Mer. One of the furnaces was also stopped. It was expected to be put back in operation in the beginning of the current year. The administration of ArcelorMittal approved of the production

* Data Sources: WSA [2], AME [5], Tex Report [3], MySteel [24], CBI China, CRU [10]

level of ferrous metals at these two plants, in accordance with the existing regional market demand.

China Steel Corp (CSC) of Chinese Taipei intended to complete reparation of blast furnace 3 with an output of 2.8 mln. tons of pig iron per year earlier than scheduled at the plant in Kaohsiung hoping that the situation in the pig iron market would improve in the second half of 2009.

The German steel company Hettenwerke Krupp-Mannesmann (HKM) decided to change the date of the reconstruction of blast furnace «A» from 2010 to 2009. The reconstruction of the furnace was scheduled for the second quarter of 2009. It should be noted that the furnace had already been shut in December of last year. The capacity of furnace «A» is 2.5 mln. tons per year. The capacity of the second furnace, installed at the plant, is 2.7 mln. tons per year. The reconstruction of the furnace will not increase its power.

The decline in demand for ferrous metals led to the Korean Posco stopping blast furnace 4 at the plant in Gwangyang for 3 months initially. But then it was decided to extend the time of shutdown up to five months. Blast furnace 4 was shut down on February, 18, and it is expected to be put back in operation on July, 26. Originally, the company planned to stop the furnace for reconstruction to increase its capacity from 3800 to 5500 cubic meters by May of this year. Because of the stoppage the company will reduce pig iron production by 1,3-1,4 mln. tons.

Posco extended the duration of stoppage of the furnace as a consequence of falling demand for steel from the automotive industry in the economy. It is projected that the production of automobiles in Korea could drop by 6.5% in the end of 2009 as compared to the previous year and would amount to 3.6 million automobiles (as opposed to 3.8 million automobiles in 2008 according to the Korean Automobile Manufacturers' Association).

Demand for commercial pig iron had weakened significantly in all commodity markets, but it fell sharply in October-December. During summer holidays consumers had refrained from active transactions in all regional markets because they waited for further decline of prices for pig iron, but then there was a very low level of demand amidst deepening global financial crisis, especially in the fourth quarter of last year. Prices for pig iron reached their minimum as compared to the previous year.

The rapid decline in prices for ferrous scrap, as well as for IORM in the spot market was not a good factor in maintaining prices for pig iron in the world market. Thus, if in June 2008, prices for large-sized steel scrap shipped from the United States in Korea stood at \$ 734 per ton c&f, then in the second half of August it was only \$ 530 / t, and at the end of October -- \$ 210 /t. As a consequence, there was a decline of the pig iron price level (for deliveries to Japan) from \$ 900 /t c&f in June to \$ 700 per ton in the second half of August and \$ 500 per ton in October, 2008

By the beginning of November 2008, customers' price offer rolled down to an even lower level, thus limiting the possibility of steel companies to supply pig iron for export, because its production cost if the prices stood, for example, at \$ 300-350 / t , would be, in fact, close to being below cost.

In early November, prices for commercial pig iron in the domestic market of Brazil also reduced and reached its minimum value of \$ 350 per ton fob. Export prices for pig iron from the CIS fell dramatically, too.

It is clear that after the speculative rise of prices for pig iron in the first half of 2008 amidst recession of the world economy, prices for metal essentially fell to a record low as compared to the recent years.

However, in January-September 2008, there was an increase in pig iron production in the world as compared to the same period last year, which took place mainly because of Asian economies. However, negative changes in the global economy and a falling demand for ferrous metal in all regional markets did not only lead to reduced production of pig iron in September of this year as compared to the previous month, but it was lower than the same period last year.

. In the fourth quarter of 2008, pig iron production continued to fall. Iron and steel companies including Russia, some economies in Europe, the USA and Ukraine had to stop cast furnaces or to slow down their operation.

According to WSA, in 2007, the world's pig iron production increased by 8,4 % and exceeded 943 mln. tons as compared to 2006 (870,5 mln. tons. in the previous year). China, Japan, and Russia became the largest pig iron producers and by the end of 2007 produced 64% of worlds' pig iron.

It is clear that the projected increase of pig iron production up to 1 bln.t. in the end of 2008 failed. Nevertheless, according to our prognosis, after the period of decrease and stagnation of demand for ferrous metals and consequentially for pig iron production comes to an end, metal production will continue to grow in the future. It is obvious that the production level of 1 bln.t. of pig iron can already be reached in 2011-2012.

According to WSA data, world's pig iron production in 2008 decreased by 2 % and stood at 927,1 mln. tons. Furthermore, even in September world's pig iron production decreased by 4 mln. tons. and amounted to 76,8 mln. tons. as compared to the previous month. But even after that the decline in production of pig iron continued. In October, pig iron production hardly amounted to more than 70 mln. tons., and in November it hit its lowest of 2008 – only 63,7 mln. tons. In December of last year pig iron production slightly improved as compared to November and stood at 64,6 mln. tons.

However, according to the results of 2008, there was a decline in pig iron production in most regions excluding other Europeans economies and economies of Asia.

Moreover, the most considerable reduction of pig iron production occurred in the CIS – by 8,8 %. A big cut in pig iron production was also noticed in China in September-December. The pig iron production in the economy according to the results of the previous year, in WSA's data, declined by 0,1 % as compared to the prior year and stood at 470,7 mln. tons.

World's crisis which became more severe in the fourth quarter of 2008 led many economies to cut their pig iron production. Korea and India were the only ones among other large producers of pig iron that were able to increase pig iron production in 2008. Growth of production was noticed in economies with relatively small output of pig iron – in Turkey (by 5%), in Belgium, Canada, Mexico, and some others.

Share of Asian economies in total world pig iron production amounted to 67,6 % in the end of 2008 (66,3 % in the previous year).

World's pig iron production in January-April, 2009, thousand tons.

Economies, regions	2007	2008	Change, %	4 months 2008	4 months 2009	Change, %
EU(27 economies)	116 737	108 440	-7,1	38 775	20 263	-47,7
Other European economies	7 720	8 375	8,5	2 802	2 550	-9,0
CIS	89 930	82 038	-8,8	31 178	20 864	-33,1
North America	48812	46 702	-4,3	17 373	8 621	-50,4
South American economies	40 110	39 491	-1,5	13 521	7 413	-45,2
African economies	6 586	6 041	-8,3	2 046	1 508	-26,3
Asian economies	627 235	627 181	0,0	211 214	202 424	-4,2
Australia and Oceania	7 048	6 679	-5,2	2 342	1 306	-44,2
WORLD, total*	946 297	927 123	-2,0	265 793	319 983	-16,9

**Results are based on 42 economies, WSA's members*

It should be noted that in 2008 almost all the EU economies excluding Bulgaria, Belgium, Finland, and Spain, experienced a decline in pig iron production. Germany which is a number one producer of pig iron among the EU economies cut its production by 6,6 % down to 29,1 mln. tons. (more than 31 mln. in the prior year). Even a greater decline in production of pig iron was noticed in France - by 8,5 %, as well as in most of Eastern Europe.

In other European economies pig iron production grew by 8,5 % up to 8,4 mln. tons. (7,7 in the previous year). This growth of production mainly occurred due to expanding production of pig iron in Turkey – by 5% up to 6,55 mln. tons. (6,235 mln. tons. a year earlier). In Serbia, the growth was 6,5 % and amounted to 1,58 mln. tons.

Even in the end of January-September of 2008, growth of pig iron production in the USA was 4,8 % and amounted to 28,151 mln. tons. (26,853 mln. tons. a year earlier). But decrease in production in the fourth quarter led to a decline in pig iron production in the USA by 8,7 % down to 33 mln. tons. (36,16 mln. tons) according to the results of 2008.

A decrease in pig iron production in Mexico and Canada was not so drastic as in the USA. Therefore, these economies experienced a production growth of 14,5 and 5,4 % respectively.

In the economies of South America, some growth in production was noticed in Chile and Peru. But Brazilia – the main producer of pig iron, cut its production by 1,7 % down to 35 mln. tons. There was also a cut in production in Africa and Oceania, and it stood almost at the same level in Asia.

In 2008 China reached new record highs in steel and pig iron production. According to China Iron & Steel Association, steel production in May and June of 2008 exceeded 46 mln. tons, and pig iron production was more than 43 mln. tons. These are monthly records in steel and pig iron production in all history of China. But there was a decline in production both of steel and pig iron in July-September.

In the fourth quarter of 2008, China had an expected reduction of pig iron production. Its production fell to its minimum level of 33,5 mln. tons.(November) but it grew up to 36 mln. tons (December). The world's crises affected China but not to the same degree as it affected, for example, Russia and Ukraine.

The situation did not improve in the beginning of 2009. Pig iron production in January and February of this year was slightly above 64 mln. tons. In March, there was a slight increase of pig iron production in the world up to 69,2 mln. tons. But in April pig iron production fell again to 66,3 mln. tons.

According to the WSA data, in January-April of 2009, 265,8 mln. tons. of pig iron was produced in the world which 16,9 % lower than the corresponding period of the previous year. Besides, all regional markets cut pig iron production in January-April of 2009. The most considerable decline in production occurred in the EU economies (27 economies) – by 47,7 %, as well as in the economies of North America – by 50,4 %, and South America by 45,2 %.

Largest pig iron producers, thousand tons.

Economy	2008	2007	Change, %	4 months 2008	4 months 2009	Change , %
China*	471 100	471 682	-0,1	158 738	163 786	3,2
Japan	86 171	86 771	-0,7	29 355	18 875	-35,7
Russia	48 266	51 156	-6,3	18 001**	12 458,1**	-30,8
USA	32 992	36 155	-8,7	12 534	5 314	-57,6
Ukraine	30 777	35 431	-13,1	12 166	7 982	-34,4
Brazil	34 969	35 571	-1,7	11 967	6 477	-45,9
Korea	31 210	29 437	6,0	10 125	7 852	-22,4
Germany	29 105	31 150	-6,6	10 051	5 538	-44,9
India	28 900	28 828	0,2	9 679	9 536	-1,5

*based on WSA's data

** based on Rosstat's data (pig iron and cast furnace ferroalloy)

According to the results of the first four months of 2009, among individual economies pig iron production grew only in Turkey (by 2,4 %), Iran (by 15,5 %), China (by 3,2 %), and also in Columbia as compared to the corresponding period of the previous year. Among the leading

world's pig iron producers, greatest reduction of production of pig iron occurred in the USA - by 57,6 %, in Brazil – by 45,9 %, in Germany – by 44,9 %, in Japan – by 35,7 %, in Russia – by 30,8 %. Some economies, namely, Bulgaria and Peru, stopped pig iron production completely.

When analyzing the world's pig iron production excluding China, it could be noted that according to the results of four months of 2009, reduction of production in the other economies fell by 36,7 %.

But it should be stated that in April leading pig iron manufactures slowed down reduction of pig iron production. Besides, there are positive signs of improvement in the world economy which makes it possible to project a gradual growth of pig iron production in the second half of 2009. It is necessary to mention a slight increase of price for commercial pig iron in the world market.

Due to the global financial crisis and reduction of demand for ferrous metals, many pig iron and steel companies are forced to revise their investment programs and postpone the implementation of these programs.

Nevertheless, many economies around the world continue to build new pig iron and steel enterprises including the ones with a complete cycle. India especially has many projects of building new pig iron and steel plants, but for a number of them, its implementation is still questionable.

Launching of a blast furnace at a plant belonging to JSW Steel Ltd, India, was scheduled for March of this year. The launch of the furnace with a volume of 4300 cubic meters and a capacity of 2.8 mln. tons per year was postponed because of the situation on the world market. The company believes that at this point it would be quite difficult to actualize the surplus quantities of pig iron in a low demand market. This will be a third blast furnace of the company, which already has two blast furnaces, one of which with an output of about 3 thousand tons of pig iron a day had been temporarily stopped, but then was blown-in again. The overall output of the two furnaces was 4 mln. tons of pig iron per year.

At the same time in February of 2009, a Iranian company Esfahan Steel started a launch of a third cast furnace with an output of 1,4 mln. tons. a year. The company produced its first pig iron in March of this year. Launching of the new unit made it possible to increase the company's capacity up to 3,6 mln. tons. of steel per year. As part of its further development, the company is planning a construction of a fourth blast furnace with the same capacity of 1.4 tons per year. This project will allow the company to bring its production capacity up to 5 mln. tons of finished steel per year.

A Venezuelan state pig iron ore company CVG Ferrominera Orinoco (FMO) is planning to build a production of commercial pig iron. The enterprise is expected to be launched in late 2009 or in early 2010. The company planned to start the construction in the first quarter of 2009. The new company, which will have a capacity of 320 thousand tons of pig iron a year, will include two blast furnaces. The company is located in Ciudad Piar. The company is planning to build another pig iron production with a product capacity of 120 thousand tons per year in El Pao in the future. Although both companies may be located in Ciudad Piar. They will use charcoal for pig iron production.

In 2006, the world trade in pig iron remained at the level of 2005 and stood at 17,6 mln. tons. according to WSA. In a regional context, the major exporters of pig iron are the CIS economies (45% of total exports) and the economies of South America. However, in the past few years, the supplies of pig iron to the world market from India have been increasing whereas shipments from China have been decreasing. According to Rusmet's estimations, in 2007, world trade in commercial pig iron grew slightly as compared to 2006 and reached 18.2 million t. And this happened despite a slight decline in exports of pig iron from Brazil and Russia, because of increased supply from other economies, particularly Ukraine. According to preliminary data, the world's exports of pig iron in 2008 amounted to 17.5 mln. tons maximum.

Brazil and Russia are biggest pig iron exporters, jointly meeting approximately 70% of global demand.

North American economies, particularly the USA, Europe, Korea and now Japan are greatest consumers of imported pig iron. The USA's share in the world's total imports of pig iron is around 30 %.

If during the first months of 2008, there was a slight decline in exports of pig iron on part of several economies, including Ukraine, a drastic rise in prices for ferrous metals in the world market, including pig iron, especially in the second quarter, helped to increase exports.

But early in the second half of the year, demand for pig iron products in the world market began to weaken. Prices for pig iron in the world market went down after the drop of price for ferrous scrap. In September and October, prices for pig iron continued to decrease rapidly. And despite this, demand for pig iron in the world market remained low. Besides, it should be taken into consideration that it is simply unprofitable for metallurgical companies to sell pig iron at prices at or below cost.

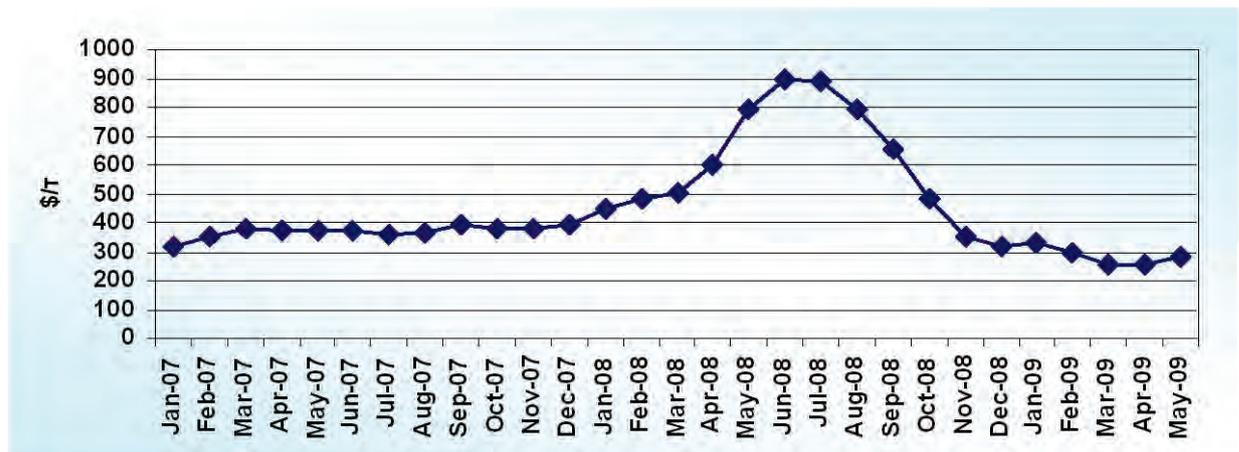
Under these conditions, the number of transactions for shipping pig iron dropped sharply, which had a negative impact on the volume of world pig iron trade. Shipments of pig iron in July and August were mostly conducted according to the contracts that had been made earlier, therefore, a significant reduction in the exports of commercial pig iron in July and August was not expected. But it was already in September- December when the world's exports of pig iron declined essentially. Leading exporters - Brazil and Russia, were simply forced to cut supplies of pig iron to the world pig iron market, due to a sharp decline in demand and low prices.

At the end of February 2009, most Chinese consumers suspended purchases of pig iron in the Far East economies due to reduction of prices for finished steel products. Market participants reported that they were willing to buy pig iron at \$ 270-275 /t c&f. But not all suppliers were willing to sell their products at this price.

Thus, Ukrainian exporters offered pig iron to Chinese consumers at \$260-265/t fob (\$280-285/t c&f) in late February. Russian pig iron was offered at \$280-285/t fob the Black Sea ports (\$300-305/t c&f).

At the same time Indian companies did not change their prices for pig iron in late February and kept them at \$290-300/t fob (\$310-315/t c&f). A relative stability on the Indian market made it possible for them not to change prices. Prices for Brazilian pig iron in the Far East economies were \$300-320/t c&f in late February.

Prices for Brazilian pig iron supply to the USA on a barge, NOLA, \$/t.



Source: CRU monitor

Prices for pig iron in the American market weakened in late February after a slight growth in January as compared to mid-December of 2008. Brazilian pig iron was offered in the American market at \$290-295/t fob northern ports (\$300-305/t c&f) in late February. Pig iron producers from southern Brazilian economies offered pig iron at \$265-270/t fob (\$285-290/t c&f). But some Brazilian exporters were willing to lower pig iron prices to 260/t fob. Ukrainian

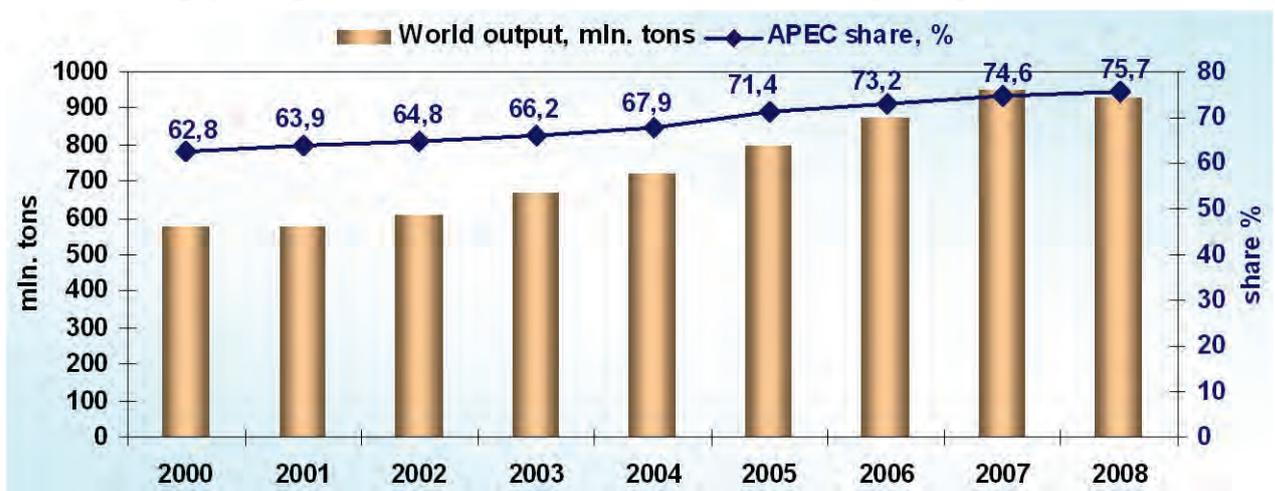
pig iron was shipped to the USA at \$270-275/t c&f (\$255-265/t fob), and Russian pig iron was \$295-300/t c&f (\$280-285/t fob) in late February.

The situation did not improve in March or April. A slight increase in prices for pig iron in the world market was registered only in May.

9.2. APEC Role in Pig Iron Market

APEC economies occupy the dominant position in pig iron production and consumption in the world. And APEC share in the global output of pig iron was showing growth in 2000-2008. As far back as in 2000 APEC achieved 62.8% of the global pig iron production, whereas in 2008 it gained 75.7%. January-April 2009 was the first time when APEC share in the global pig iron production exceeded 80 % and totaled 89.9%.

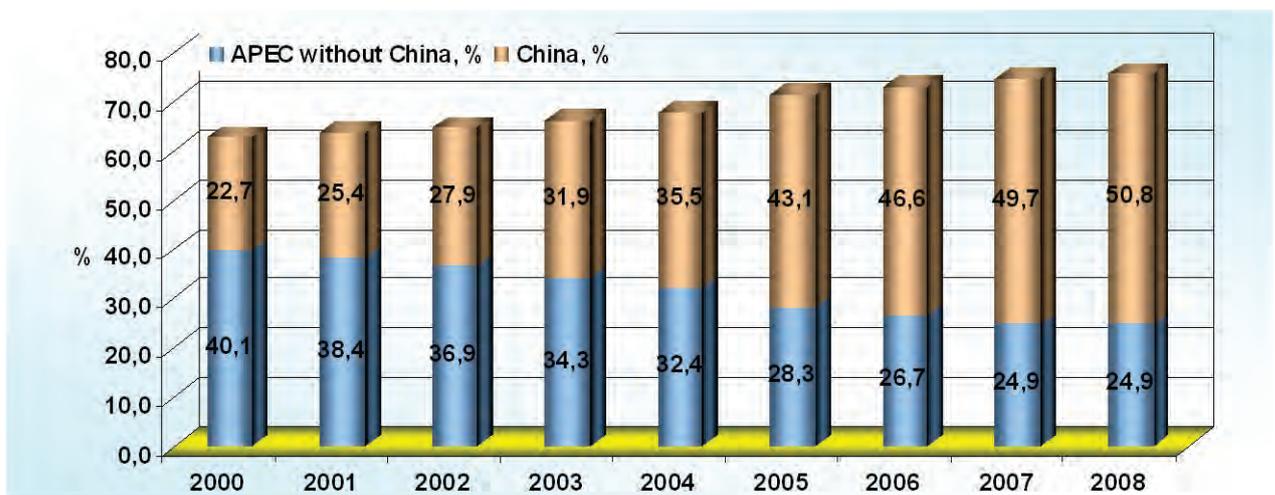
Global pig iron production (mln. tons) and APEC share in global production (%)



Pig iron production exists in 13 out of 21 APEC economies, and China, Japan, and Russia are top three in the world pig iron production.

In 2008, APEC economies produced 701.6 mln. tons of pig iron, which makes it nearly 94% higher than in 2000 (361.8 mln. tons).

APEC share excluding China and share of China in global output of pig iron, %



APEC growing share in the global output was supported mostly by faster growth of pig iron production in China. During 2000-2008 pig iron production in China increased nearly by 260% and exceeded 471 mln. tons. Pig iron production growth was particularly aggressive in 2002-2007. During 2000-2008 dozens of steel factories were constructed in China and that became the basis for such growth in the economy.

Pig iron production in APEC in 2000-2008, thousand tons

Economy	2000	2001	2002	2003	2004	2005	2006	2007	2008
Australia	7,049	6,017	6,106	6,116	5,735	6,203	6,433	6,369	6,057
Canada	8,904	8,302	8,670	8,554	8,828	8,274	8,305	8,579	9,040
Chile	1,024	897	964	988	1,137	1,074	1,115	1,147	1,150
China	131,034	147,067	170,745	213,785	256,738	344,732	407,554	471,419	471,100
Japan	81,071	78,836	80,979	82,091	82,974	83,058	84,270	86,771	86,171
Korea	24,937	25,898	26,570	27,314	27,556	27,309	27,559	29,437	31,210
Mexico	4,856	4,373	3,996	4,183	4,278	4,047	3,790	4,078	4,670
New Zealand	603	646	617	700	719	652	664	679	622
Peru	327	316	240	226	272	263	306	351	395
Russia	44,492	44,941	46,614	48,707	50,311	49,065	52,220	51,516	48,266
Chinese Taipei	9,618	10,001	10,169	10,260	10,354	9,447	10,407	10,518	9,800
USA	47,878	42,107	40,225	40,644	42,291	37,222	37,903	36,337	32,992
Viet Nam	47	48	146	200	187	202	211	170	160
APEC, total	361,840	369,449	396,041	443,768	491,380	571,548	640,737	707,371	701,633

Source: WSA

APEC share in the global pig iron production, %

Economy	2000	2001	2002	2003	2004	2005	2006	2007	2008
World, total	100								
Including:									
Australia	1.22	1.04	1.00	0.91	0.79	0.77	0.74	0.67	0.65
Canada	1.55	1.44	1.42	1.28	1.22	1.03	0.95	0.90	0.98
Chile	0.18	0.16	0.16	0.15	0.16	0.13	0.13	0.12	0.12
China	22.74	25.43	27.94	31.91	35.46	43.05	46.58	49.69	50.81
Japan	14.07	13.63	13.25	12.25	11.46	10.37	9.63	9.15	9.29
Korea	4.33	4.48	4.35	4.08	3.81	3.41	3.15	3.10	3.37
Mexico	0.84	0.76	0.65	0.62	0.59	0.51	0.43	0.43	0.50
New Zealand	0.10	0.11	0.10	0.10	0.10	0.08	0.08	0.07	0.07
Peru	0.06	0.05	0.04	0.03	0.04	0.03	0.03	0.04	0.04
Russia	7.72	7.77	7.63	7.27	6.95	6.13	5.97	5.43	5.21
Chinese Taipei	1.67	1.73	1.66	1.53	1.43	1.18	1.19	1.11	1.06
USA	8.31	7.28	6.58	6.07	5.84	4.65	4.33	3.83	3.56
Viet Nam	0.01	0.01	0.02	0.03	0.03	0.03	0.02	0.02	0.02
APEC, total	62.80	63.87	64.82	66.23	67.87	71.38	73.23	74.57	75.68

Based on the WSA and Federal State Statistics Service

Most of APEC economies produce pig iron as part of the complete steelworks process to cover their in-house requirements. And in APEC economies there are quite a few companies specializing in pig iron production that supply commercial pig iron to the market, including export.

It is worth noting that most of APEC economies are net importers of pig iron and only Russia is a leader in export. The total export of pig iron from APEC in 2008 is estimated at 6.2 mln. tons, which is approximately 35% of the global export of commercial pig iron. At the same time, USA is the leading importer of pig iron in the world among the APEC economies (unless the EC economies' import is taken altogether). Major pig iron importers are Japan, Korea, Chinese Taipei, Thailand, and China, that is currently expanding procurement activities for this metallurgic product from abroad.

APEC economies with pig iron production cover most of the required volumes relying on the their output of pig iron.

Pig iron consumption in APEC slightly exceeds the portion in its total global output due to import surplus of 4 mln. tons in 2008. Thus, the share of APEC economies in the global consumption of pig iron in 2008 equaled approximately 76%. (versus about 64% in 2000). And China contributed the most to the increased portion of APEC economies in the global consumption.

APEC participants are major importers and exporters of pig iron at the same time and they directly influence the pig iron demand and supply in the world market and price trends as well.

Chinese steel companies take the leading position in pig iron production in the world, without taking into account the positions of ArcelorMittal Group.

9.3. China, the Major Pig iron Producer and Consumer

China is a leading producer of ferrous metals in the world, including pig iron. In the first six months of 2008, China continued increasing production of ferrous metals, including pig iron and steel, whereas in July the output demonstrated decline versus the record high gained in May and June. However even in this period the growth rate of pig iron production continued to decline.

As far back as in 2007 the increase in the output of pig iron amounted to nearly 15.7%, while in January-April 2008 it reached only 9.6%, and January-September resulted in 5.1%. End of 2008, pig iron production in the economy rose only by 0.4% compared to the previous year and totaled 470.7 mln. tons. According to the WSA, pig iron production in China fell by 0.1% and amounted to 471.1 mln. tons.

Iron and steel smelting in China in 2006-2008, mln. tons

Month	Pig iron			Steel		
	2006	2007	2008	2006	2007	2008
January	29.23	36.03	38.73	30.23	38.12	41.18
February	28.69	34.04	37.54	30.08	36.14	38.88
March	32.43	38.07	41.53	33.35	40.16	44.87
April	32.45	37.85	41.27	33.71	40.32	44.68
May	34.47	39.55	43.04	35.70	41.30	46.01
June	35.22	40.04	43.39	36.74	42.12	46.94
July	34.5	39.67	41.98	36.6	41.6	44.89
August	35.2	40.8	40.05	36.4	42.7	42.57
September	35.06	39.51	37.55	36.36	42.71	39.61
October	36.07	40.84	34.13	37.82	42.92	35.90
November	36.13	39.91	33.52	38.07	39.69	35.19
December	36.63	40.63	36.23	38.08	41.31	37.79
TOTAL	413.64	471.4	470.7	422.66	489.0	500.49

Source: WSA, CRU monitor,

Increased pig iron production in the economy in the first six months was largely due to its increased consumption in steel making process. High prices for ferrous scrap in the first six months of 2008 underlay the increase of pig iron percentage in the steel charge. And the expansion of steel production in the economy against the rising pig iron consumption rate kept maintaining steel producers' vigorous demand for pig iron. But the second half of 2008 showed a sharp decline in the prices for ferrous scrap and pig iron.

Most major companies (with the output more than 10 mln. tons of pig iron per year) significantly increased the output of pig iron in 2008, except Shougang Group that reduced the output in 2008 by more than 20% down to 11.8 mln. tons but this was due to the relocation of the company's facilities from the capital. So it is worth noting that significant reduction in the pig iron production took place in Beijing, by 41.5%. Small-scale businesses also showed reduction in the output of pig iron.

Production of pig iron in China by groups and companies, mln. tons

Company	2008	2007	Change, %
Total	470.674	471.419	-0.16
Leaders	359.886	353.929	1.68
Including:			
Hebei Iron & Steel Group Co., Ltd	30.37	26.51	14.57
Shanghai Baosteel Group Co.	29.25	29.36	-0.39
Wuhan Iron & Steel (Group) Co., Ltd	26.23	24.47	7.18
AnBen Iron & Steel Group Co., Ltd	23.51	23.32	0.83
Jinan Iron & Steel Group Co., Ltd	21.34	23.31	-8.47
Jiangsu Shagang Group	18.77	18.45	1.59
Anshan Iron & Steel Co., Ltd	16.08	16.10	-0.14
Tangshan Iron & Steel Co., Ltd	14.607	12.365	18.14
Magang (Group) Shareholding Co., Ltd	13.78	12.70	8.50
Ma'anshan Iron & Steel Co., Ltd	13.78	12.70	8.50
Wuhan Iron and Steel Company Limited	13.6	11.65	16.69
Shougang Group	11.811	14.856	-20.50
Jiangsu Shagang Group Co., Ltd	11.04	11.10	-0.53
Shandong Shiheng Special Steel Group Co., Ltd.	10.29	10.83	-4.97

Source: CRU Monitor, Mysteel, CBI China,

Export of pig iron from China in 2006-2008

Economy	2006		2007		2008		Change, %
	thousand tons	tsd. \$	thousand tons	tsd. \$	thousand tons	tsd. \$	
Total	867.025	271,881.692	689.180	247,456.612	250.829	127,921.360	-63.6
Including:							
Japan	705.695	224,118.546	543.696	192,051.337	153.590	75,385.112	
Korea	121.661	35,523.135	67.736	25,326.991	81.847	45,906.584	20.8-71.8
Australia	21.928	6,863.464	25.09	9,358.376	-	-	-
Chinese Taipei	9.913	3,157.400	21.182	8,345.708	12.205	5,364.140	-42.4
Hong Kong, China	3.285	854.127	17.941	4,844.984	2.774	1,097.537	-84.5
India	-	-	7.751	5,503.407	-	-	-
Viet Nam	-	-	2.692	418.193	-	-	-
Thailand	2.431	721.327	1.45	425.401	0.110	69.431	-
Philippines	0.86	261.624	0.48	153.690	-	-	-

Source: Mysteel, CBI China

Apparent consumption of pig iron in China in 2005-2008, mln. tons

Indicators	2005	2006	2007	2008
Production	337.4	404.2	469	470.7
Export	2.2	0.9	0.69	0.25
Import	0.3	0.2	0.82	0.36
Apparent Consumption	335.5	403.5	469.13	470.81

Source: WSA, Mysteel, Rusmet evaluation

Hundreds of companies in different provinces and municipalities, including Beijing, Hebei, Shanxi, Henan, Jiangsu, Shandong, Zhejiang, Jiangxi, etc. are shutting down old blast furnaces.

In the province of Hebei, China, in the first six months of 2008, the companies liquidated outdated blast furnaces to the total capacity of 1.2 mln. tons per year, and coke oven blocks to the total capacity of 1.35 mln. tons per year. By 2010, Hebei Province should dismantle blast furnaces to total capacity of 5.69 mln. tons per year, and steel furnaces to the total capacity of 8.13 mln. tons per year, in compliance with an order signed by the National Development and Reform Commission (NDRC). In 2008, in the province of Liaoning in northern China, 220 small-scale enterprises were shut down. The total capacity of pig iron and steel companies amounted to 6 mln. tons per year.

In 2008, 112 small-scale steelworks in Anhui Province in China were shut down. Except Maanshan Iron & Steel, in the province there were mainly small and medium-sized companies. So, before the shutdown, the capacity of 120 small-scale pig iron companies in the province amounted to 6.8 mln. tons per year, and 12 mln. tons per year for steel production. Those were 35% and 45% respectively of the total available capacity in the province.

At the same time, in the province of Anhui measures are being taken to support industrial enterprises. RMB 87.9 billion (\$ 12.9 billion) were expected to be spent to support 111 businesses and projects in the province, including Maanshan Iron & Steel (production facility refit).

Chinese Jiangyin Xingcheng Special Steel, a subsidiary of CITIC Pacific, March 28, 2009, planned to put into operation a new blast furnace, its volume being 3,200 cubic meters and its capacity being 2.7 mln. tons per year. The company started the construction of the furnace in 2007 and completed early this year, followed by the furnace testing.

Iron ore will be supplied by CITIC Pacific that made an investment into a joint iron ore project in Australia, which is expected to be launched in 2009 (the capacity being 27.6 mln. tons. of concentrate and pellets per year). The production facility is located in Jiangyin, Province of Jiangsu.

According to the China Iron & Steel Association, Chinese steel companies could go back to reducing the output of pig iron and steel in the first months of 2009, since the domestic market showed no signs of recovery in demand for steel products. In January and February, some small and medium-sized companies in Hebei Province and Tangshan Area stopped operation or started shutting down blast furnaces.

Hebei Zongheng Iron & Steel shut down one of two blast furnaces of 4,450 m³. Previously, that blast furnace was suspended in September last year and resumed operation in January this year.

At the same time, February 16, 2009, Chinese Baosteel launched blast furnace 1 again. That blast furnace with the output capacity of about 4 mln. tons per year, was stopped on September 1, 2008, for refitting. The blast furnace was expected to be re-launched after refitting in December, but the commissioning of the furnace was postponed due to the low demand in the domestic market.

Several steel companies in China determined to defer some new projects. Thus, Baosteel suspended the construction of Zhanjiang new metallurgical facility for 10 mln. tons per year of steel in Guangdong Province, whose startup was scheduled for 2010. In addition, the company

suspended the operation of the Corex facility that was commissioned November last year in Shanghai.

Despite the fact that, according to CISA estimate, pig iron and steel production in 2009 will be significantly lower than in 2008, many steel companies do not plan to cut production.

In 2009, Chinese Baosteel Group (including Bayi Steel) plans to produce 24 mln. tons of pig iron, 28 mln. tons of steel and 27 mln. tons of rolled metal. In 2008, the company made 25 mln. tons of steel. That means the Group expects only a slight drop in ferrous metal production versus 2008.

Despite the problems in economy, by 2012 the Group intends to reach the capacity of 80 mln. tons per year, the President of Baosteel said in mid-January. The President of the Group pointed out that it is difficult to predict the development of the ferrous metal market situation in 2009 and prices for steel that may be susceptible to significant changes but still remain relatively low. The Government's investment of RMB 4 trillion (\$ 585 billion) to support the economy will have some impact on the economy's steel industry. The growth in demand for ferrous metals due to infrastructure development projects in China will not be able to keep the demand for metal up in other regions.

According to the President of Baosteel, the reduced demand in the market and high operating costs will lead to further mergers and acquisitions in the economy in 2009. He also expressed hope that the Government will support the consolidation process of the economy steel industry.

High prices for fuel and energy and raw materials resulted in a significant increase in production cost of ferrous metals in China, and pig iron in particular. According to the China Iron & Steel Association (CISA), in the first six months of 2008, the average pig iron production costs in the economy increased by about 57.6% compared to the same period of the previous year.

It is only in the first six months of 2008 that the cost of coal fuel rose by 36.8%, coking coal – by 61.6%, coke – by 81.8%, imported IORM – by 53.9%, and the local iron ore – by 95.5%. And in June the cost of pig iron, coking coal and coke increased by 70.2%, 94.9% and 113.4% respectively. As a result, the profitability of steel companies went down, and some of them suffered losses.

The situation changed again in October. Prices for IORM in the spot market continued to fall, and reached a low in mid-March 2009 (\$65/t of Indian ore). But it does not make adjustments to production since the demand for steel in the first quarter was not active.

Some two or three years ago, China was the largest supplier of pig iron to the world market. Current day export of pig iron from China is quite low. In 2007, China supplied only about 0.7 mln. tons of pig iron to the world market. Then, in the first quarter of 2008, the export of pig iron from China went down to 69 tsd.t, and the full-year export totaled approximately 360 tsd.t. China ships pig iron mostly to Japan and Korea.

Import of pig iron into China in IQ 2009, thousand tons

Economy	January-March 2008	January-March 2009	Change, %
Total	487.363	127.272	282.9
Russia	129.422	-	-
Japan	101.259	0.289	...
India	94.5	-	-
Brazil	87.549	105.784	-17.2
Ukraine	38.5	-	-
N. Korea	19.984	16.905	18.2
Australia	15.75	-	-

Source: WSA, AME, Tex Report, Mysteel, CBI China, CRU monitor

However, in 2008 China significantly reduced the import of pig iron versus the previous year, by more than 63% down to 0.25 mln. tons. It is worth noting that in 2006 the economy imported 169.8 tsd.t of pig iron, which is 37% lower than in 2005. In 2007, the import of pig iron

into the economy increased manyfold and reached nearly 0.82 mln. tons. The main suppliers of pig iron to China are Brazil, India, Russia and North Korea.

However, already in 2009, the situation started changing. China, alongside several other economies, increased the output of pig iron in January-April 2009 versus January-April 2008 by 3.2% up to 163.8 mln. tons significantly increased international purchases. And the import of pig iron in the first quarter went up versus the first quarter of 2008, more than 3.5 times up to 487.4 tsd.t (versus 127.2 ts.t the year before). Each major exporter, except Brazil, managed to profit from this type of demand in China and increased their supplies. Like, in the first quarter, Russia supplied more than 129 tsd.t of pig iron to China (versus zero supplies in the first quarter of 2008).

China is the largest consumer of pig iron in the world. In 2006, the apparent consumption of pig iron in the economy increased by 20.3% up to 403.5 mln. tons. In 2006 the portion of China in pig iron global consumption increased up to 46.3%. In 2007 and 2008 the output and consumption in China practically equaled.

9.4. Major Pig Iron Exporters

Brazil

Brazil is a major producer of pig iron in the world. At the end of 2008, the economy ranked fourth after China, Japan and Russia in the global output of pig iron.

In 2007, the output of pig iron in Brazil exceeded 35.5 mln. tons, which is 9.5% higher than in 2006 (32.45 mln. tons). In January-September 2008, pig iron production in the economy increased compared to the same period of the previous year by 6.5% and exceeded 27.8 mln. tons. And this is despite the fact that at the beginning of the year, many companies had to suspend the blast furnaces due to torrential rains.

Rains had an adverse effect on Brazilian pig iron producers' operation in Carajbs in April 2008. According to the Sindifer, 18 out of 40 blast furnaces in Carajbs were not operational in April because of rain. Also, in January 7 blast furnaces were out of operation in the region, five were not operational in each of February and March. Similar situation occurred in May. In April, 45 out of 106 blast furnaces were suspended in Minas Gerais. This state had 49 blast furnaces out of operation in January, 48 in February, and 46 in March. The situation in the state evolved as a result of economic difficulties due to the weakening of the dollar against the real, and low competitive ability compared to producers of pig iron in Carajbs for exporting to the USA.

Already in 2008, the production of pig iron in Brazil decreased versus 2007 by 1.7% and amounted to almost 35 mln. tons. In the last months of 2008 pig iron production in the economy underwent reduction. In November, the output of pig iron totaled 2.3 mln. tons, and in December, it went down to below 2 mln. tons. Normally pig iron production per month amounted to 3.3-3.8 mln. tons. The situation did not improve at the beginning of 2009. Moreover, the output of pig iron in the economy dropped to the minimum of 1.6-1.65 mln. tons (January-March 2009). In April, the production of pig iron in the economy fell down to less than 1.6 mln. tons. In total in January-April 2009 the output of pig iron in the economy equaled 6.48 mln. tons, which is 45.9% lower than the same period last year.

Such reduction in the output of commercial iron was marked not only at the companies that depend on the global market demand, but also at major steelworks. Small-scale producers of pig iron suspend blast furnaces. In addition, financial constraints do not allow purchasing imported coke and coking coal and there have been constant problems with charcoal in the recent years.

The problems with charcoal supplies are not expected to be resolved completely in the near future. Limited supplies of charcoal, especially during the wet period, result in insufficient workload of existing blast furnace facilities. Brazilian producers of commercial pig iron have to

shut down blast furnaces. The situation in the world market of ferrous metals had an adverse effect on pig iron producers' in Brazil. Commercial pig iron producers exercised a rapid process of suspending blast furnaces resulted in no more than 20% of blast furnaces being in operation in the beginning of 2009 to produce commercial pig iron.

The production of ferrous metals, including pig iron, was expected to grow in the next few years in Brazil mainly due to the construction of full cycle facilities equipped with blast furnaces. The total capacity of new projects, some of which were planned to be implemented in cooperation with foreign steel-making companies, including Japan, China, EU economies, is estimated at 34-35 mln. tons per year. But currently the leading steel companies are reviewing their investment programs, so we can expect that the implementation of projects in Brazil will be deferred or canceled altogether.

Brazil is one of the largest suppliers of commercial pig iron to the world market. In 2007 the economy reduced the exports of pig iron versus the previous year by 4.9% down to 5.95 mln. tons. Such decrease in exports of pig iron happened for the second year in a row. The exports breakdown includes the USA as the primary importer. In total in 2007 Brazil shipped 3.659 mln. tons of pig iron to the USA, which made 61.5% of the total export of pig iron from the economy. Nevertheless, the supplies of pig iron into the USA dropped compared to the previous year to 15.4%.

The major consumers of Brazilian pig iron are Thailand, Chinese Taipei, Spain, and China. In addition, Brazil supplied pig iron to Malaysia, Mexico, Australia, Netherlands, Argentina, Italy and other economies. 2008 was the first time with high peaks in export and prices for pig iron and sharp drops in shipments and prices, respectively.

In the first quarter of 2008, Brazil increased the exports of pig iron by 1.3% compared to the same period the previous year to 1.57 mln. tons. The export growth occurred due to increased supply of pig iron to the USA (by 7.5%), to Chinese Taipei and Italy. Shipments of pig iron to other economies declined.

In the first six months Brazil supplied the total of 3.163 mln. tons to the world market, which is 12% higher than in the first half of 2007. According to the SECEX, the exports into the USA went up by only 2.2% to 1.7 mln. tons. At the same time Brazil significantly increased shipments of pig iron to Asian and some European economies. As a result, Chinese Taipei ranked second in purchasing Brazilian pig iron (the increase is 88.4% up to 286.2 thousand tons).

According to other data, the exports of Brazilian pig iron in the first half reached 3.78 mln. tons (the increase is 13.5% versus 3.33 mln. tons in January-June 2008).

According to customs statistics, exports of pig iron from Brazil in August 2008 amounted to 657 tsd.t, which is 27.5% higher than in the same period in the previous year. Further on, the exports level underwent decline. Mainly this was due to the reduction of supplies to the USA in the fourth quarter, which is the main consumer of Brazilian pig iron. Exports to the Asian region also went down. At the end of the year, the shipment of pig iron from Brazil reached the lowest. In December, the supply of pig iron from the economy amounted to only about 99 tsd.t. A lot of major consumers did not purchase pig iron in December at all, including Thailand, Spain, China, Italy, etc.

As a result, the supply of pig iron from Brazil to the world market in 2008 increased by 5.9% compared to 2007 and amounted to nearly 6.3 mln. tons. The exports of pig iron into the USA increased slightly (by only 0.5%). A more significant increase in the supply of Brazilian pig iron was to some Asian economies, particularly in Chinese Taipei (by 40.6%), Thailand (15%), North Korea, and Korea. Also, Brazil increased shipments to Australia and Italy because Italy preferred to purchase Brazilian and not Ukrainian pig iron end of last year.

Prices for pig iron end of last year tended to drop sharply due to the aggravating global financial crisis and declining production and demand for ferrous metals.

In May 2008, the prices for exported Brazilian pig iron from Carajbs and Minas Gerais reached \$800-810 per ton on FOB terms of delivery, and late in May American steel companies executed contracts for the supply of pig iron from Brazil at \$850 - 860 per ton on FOB Gulf of

Mexico ports terms of delivery with shipments to take place in October and November 2008, then in August the price proposals for pig iron went down to \$750 per ton on FOB terms of delivery. The fall in prices accelerated to the end of 2008.

The situation did not improve in the first quarter of 2009. Some increase in prices at the beginning of the year switched to another decline again. Already in mid-March price offers for Brazilian pig iron fell to \$230/t FOB. Some positive changes were noted only in May 2009, which caused some increase in prices for pig iron.

Reducing demand for ferrous metals in the world market resulted in a reduction of commercial pig iron production in Brazil and its supply to the world markets. In March 2009, Brazil exported 279 thousand tons of pig iron, which is 30.9% lower than the same period last year. The main supplies of 150 tsd.t of pig iron in March were made to China. It is worth noting that in March 2008 only about 1 thousand tons of pig iron were supplied to China. In March, Brazilian companies supplied 111 thousand tons of pig iron to the USA, which is 0.2% more than in March last year. In total for the first quarter of 2009, Brazil exported 1.005 mln. tons of pig iron, which is 36.1% lower than the same period last year. In terms of the year accounted this is slightly over 4 mln. tons.

In the structure of exports Brazil reduced exports to the USA by 21.5% compared to the first quarter of 2008 down to 614 thousand tons. The portion of the USA in the total Brazilian exports in the first quarter was 61.1%. The supply of pig iron to China grew in the first quarter of 2009, more than by 8 times and reached nearly 210 thousand tons (about 26 tons the year before).

In addition, Brazil increased exports of pig iron in the first quarter of this year to Korea almost by 3 times up to 86.3 thousand tons (versus 28.78 thousand tons the year before). Brazil has significantly cut or completely ceased the exports of pig iron to the rest of the economies.

Export of pig iron from Brazil to economies, t

Economy	2007	2008	Change, %	IQ 2008	IQ 2009	Change, %
Total	5,947,610	6,299,600	5.9	1,572.372	1,004.944	-36.1
Including:						
USA	3,659,313	3,676,348	0.5	782.526	614.418	-21.5
Chinese Taipei	341,037	479,449	40.6	103.284	3.024	-97.1
Spain	332,652	310,951	-6.5	137.242	0.85	-99.3
Thailand	342,519	393,872	15.0	124.967	0.85	-100.0
China	317,037	170,613	-46.2	25.980	209.740	707.3
Italy	55,683	170,341	205.9	87.450	2.028	-97.7
Australia	85,504	147,124	72.1	27.292	1.032	-96.2
Mexico	133,561	130,828	-2.0	26.834	0.06	-99.8
North Korea	36,961	129,847	251.3	-	1.5	--
Korea	35,956	191,184	431.7	28.783	86.304	199.8

Source: WSA, AME, Tex Report, Customs clearancer

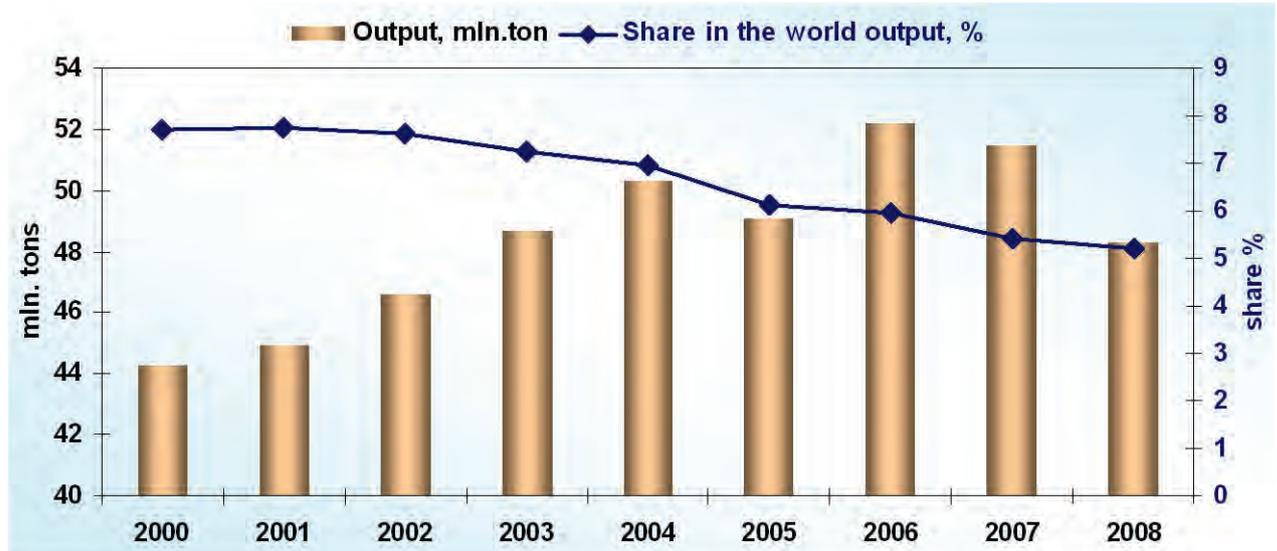
Russia

Russia is one of the leaders in pig iron production and ranks third in the world after China and Japan. End 2008, the output of pig iron including blast-furnace ferroalloys in the economy fell by 6.3% versus the previous year and amounted to 48.27 mln. tons (51.52 mln. tons the year before). Such a sharp drop in production was due to the influence of the global financial crisis on the economy and the decline in demand and output of ferrous metals in the fourth quarter of 2008. In general, the production of pig iron in the economy in 2000-2008 increased by nearly 8.5%.

The growth in pig iron production in Russia in 2000-2008 was due to a general increase in steel production in the economy and the expansion of commercial export of pig iron to the world market. For the past few years, Russia and Brazil have been top export suppliers of commercial pig iron to the market.

The rise in the output of pig iron in the economy during this period was due to significant investment into this industry by Russian metallurgical companies. All the leading metallurgical plants as well as specializing companies in the economy increased the output of pig iron in 2000-2008. However, the share of Russia in world production of pig iron tends to reduce.

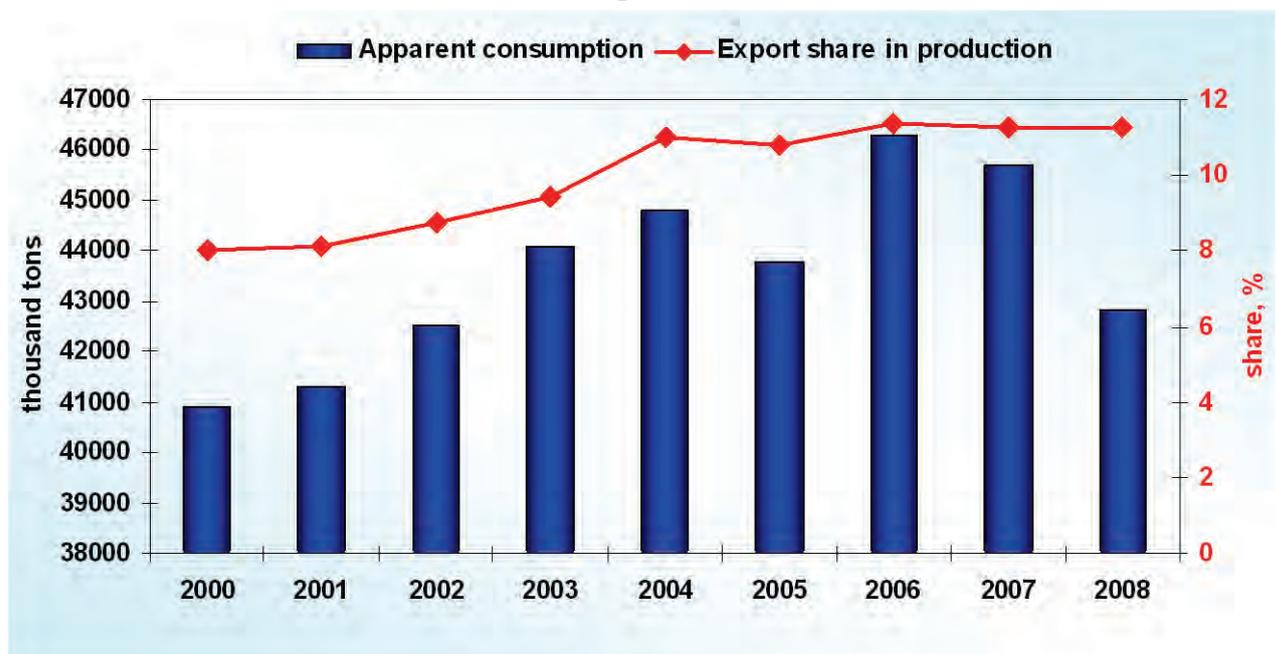
Output of pig iron in Russia (mln. tons) and the portion of Russia in the global output (%)



Source: Based on Federal State Statistics Service, Federal Customs Service

Apparent consumption of pig iron in the economy before 2006 had a tendency to growth and was decreasing afterwards. The reduction in consumption is due to expanding electric steel production in the economy, and in 2008 also due to the general drop in the output of ferrous metals during the recessions.

Apparent consumption of pig iron in Russia (thousand tons) and the percentage of export in the output (%)



Based on Federal State Statistics Service, Federal Customs Service, and Rusmet Experts

2008 stands out in the development of Russian economy that rapidly progressed in this century. Negative changes in the economy resulted in reduced production of pig iron.

In 2008 the only company that managed to somewhat build up the production (by 2.3%) among the leading producers of pig iron was JSC ZSMK, while the rest of the companies, including MMK, Severstal, Tulachermet and others, reduced the output. Particularly noticeable was the decline in the economy pig iron production in the fourth quarter of 2008.

The falling demand in domestic and foreign markets underlay the decline in production of pig iron in the economy in the fourth quarter. In the first-to-third quarters, the output of pig iron exceeded 13 mln. tons (the maximum level was recorded in January-March (13.7 mln. tons)), and only 8.15 mln. tons in the 4th quarter. Pig iron production went down at almost all the steelworks in Russia. The decline in the output led to shutting down blast furnaces, including JSC NLMK, OJSC Severstal, JSC MMK, OJSC Tulachermet and others.

Steel companies sought to use those shutdowns to repair the blast furnaces, which was economically feasible and reasonable.

At the same time, the situation with pig iron production in January-September last year was quite favorable for the steel companies in Russia. In January-September 2008, Russia increased the output of pig iron by 4.4% versus the same period in the previous year, up to 40.12 mln. tons (versus 38.43 mln. tons the year before). And the increase in pig iron production took place practically at all the leading steel companies of the economy, except JSC ChMK and JSC NkMK. But such reduction was more than enough compensated for by the increased production at the rest of the steelworks.

However, October was marked by a considerable decline of pig iron production in Russia, while commercial production of pig iron was reduced to a minimum. This happened due to a limited demand for pig iron with the prices being at the lowest as they dropped at that time down to \$350/t in the foreign regional markets.

Therefore, under the circumstances, the companies suspended blast furnaces or transferred some of them to slow-wind operation. First of all, it refers to OJSC Tulachermet that switched over all three blast furnaces to slow-wind operation in October. Later on, one of the blast furnaces was shut down for category I major repairs that will at least take the period throughout 2009. Svobodny Sokol Steelworks and Kosogorsky Steelworks minimized the output as well.

Major steelworks produce the amount of pig iron required for steel production. In November 2008, the output of pig iron in Russia amounted to less than 2.4 mln. tons, and 2.3 mln. tons in December.

In the first months of 2009, the situation somewhat improve against the recessional November and December 2008. January and March showed an increase in pig iron production versus the minimum level late in 2008. So Russian steelworks started resuming operation of blast furnaces suspended at the end of 2008. For instance, in February JSC MMK put into operation two blast furnaces, other companies also re-started the suspended blast furnaces.

The production of pig iron in Russia in 2009 is likely to decrease versus 2008 but from then on Russian economy is expected to overcome the crisis and increase the output of ferrous metals, including pig iron.

Long-term development of pig iron production in the economy is associated mainly with full cycle plants that are expected to allocate significant funds to improve aggro-blast-furnace process, refit existing units and construct new blast furnaces as part of the sustainable development programs. Several Russian companies planned to expand and upgrade pig iron facilities but have to defer the implementation till the post-crisis period. So far all the companies adopted crisis operation plans and minimized their investment programs. However, there is no basis to expect significant pig iron production increase in Russia since the economy is expanding the production of electric steel.

It is worth noting that steel companies have chosen the correct operation strategies in adverse conditions to shut down uneconomic units and to carry out repairs and upgrade. When the market situation improves, they will be able to utilize updated blast furnaces.

Russia is one of the world leaders for pig iron export supplies. In 2007, the economy supplied 5.8 mln. tons to the world market. Russia mainly exports outside the CIS.

Pig iron production in Russia by companies, thousand tons

Company	2006	2007	2008 *	Change, %
Russia, total	52,362.3	51,515.5	48,265.7	93.7
Including:				
MMK	9,732.6	9,482.4	8,432.2	88.9
NLMK	9,042.9	9,055.8	8,406.6	92.8
Severstal	8,199.5	8,758.5	8,124.8	92.8
ZSMK	5,950.0	5,246	5,364.1	102.3
NTMK	4,994.2	5,346.3	4,807.1	89.9
ChMK	3,633.9	3,686	3,583.2	97.2
Uralskaya Stal	2,493.6	2,796.3	2,749	98.3
Tulachermet	2,992.3	2,831.7	2,820.3	99.6
NkMK	1,810.1	1,480.1	1,182.9	79.9
Svobodny Sokol Steelworks	801.8	793.4	835.1	105.3
Kosogorsky Steelworks	759.4	753.6	727.3	96.5

**Pig iron and blast furnace ferroalloys*

Based on Federal State Statistics Service, Federal Customs Service, and Rusmet Experts

In 2008, the situation changed due to the sharp rise in prices for pig iron during the first six months. Russian steelworks that mainly cover their needs for IORM using their own assets, sought to increase the export of pig iron, the main markets for Russian pig iron being the USA and European economies.

Russia increased the export of pig iron in the first quarter of 2008 to 1.36 mln. tons, which is significantly higher than that for the same period of the previous year (versus 1.26 mln. tons the year before). And growth in exports of pig iron was due to the increasing supply to foreign economies beyond CIS up to 1.29 mln. tons (versus 1.21 mln. tons the year before). Please note significant pig iron supplies from Russia to the USA market. However, according to the USA, there were zero supplies of pig iron from Russia in the first quarter whereas for the first half of 2008, Russian pig iron exports exceeded 2.8 mln. tons, which is approximately 100 tons more than during the same period in the previous year.

The fourth quarter showed a particularly steep drop in exports. The most prominent buyers in the structure of Russian pig iron exports are the USA (1.35 mln. tons), EU economies, and the Far East economies such as Korea (341 tsd.t), and Japan (230 tsd.t).

In the first quarter of 2009, exports of pig iron from the economy was slightly over 1 mln. tons, which is more than 20% lower than the 2008 export performance at the world market in the first quarter of 2008.

The financial crisis in the world has led to a sharp decline in demand for ferrous metals, including pig iron, resulting in the price drop.

Export prices for Russian iron dropped sharply in the last few months. As far back as in July 2008, the price for pig iron were \$930-980 per ton, FOB terms of delivery, already in October, the prices went down to \$380-450/t. The prices for pig iron kept on falling during January-March and went down to \$250/t.

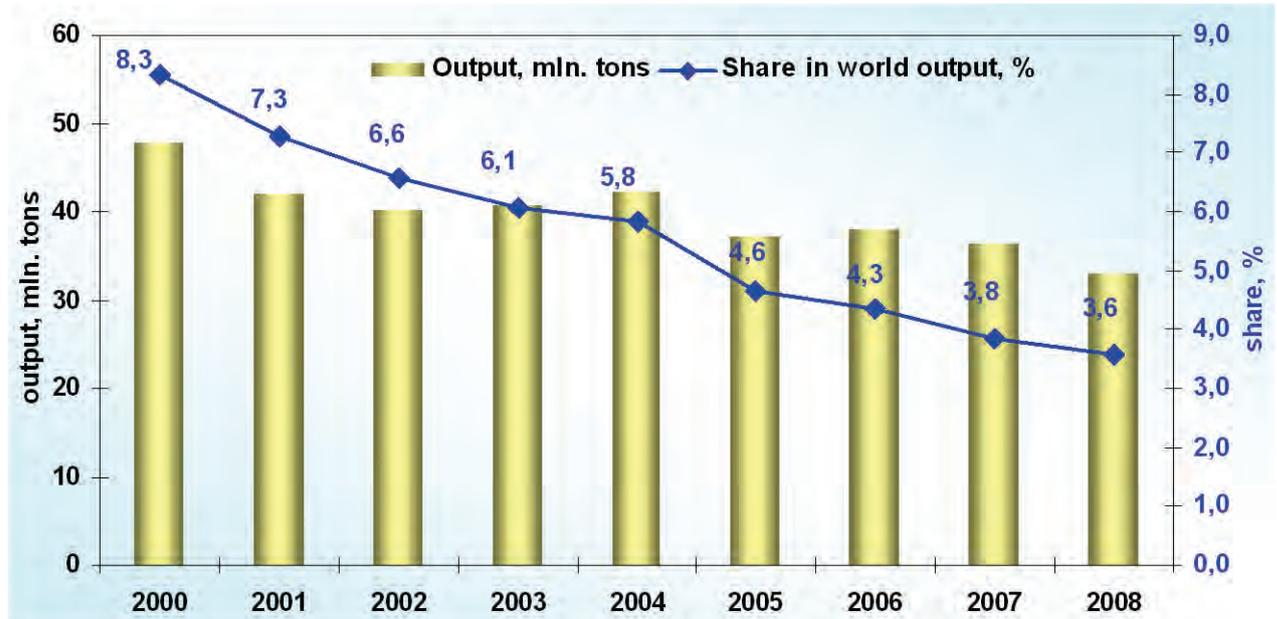
Therefore, in the context of reducing demand and falling prices, Russian steel companies have cut production of commercial pig iron. First of all, this refers to OJSC Tulachermet, OJSC Kosogorsky Steelworks (with two blast furnaces shut down), and Svobodny Sokol Steelworks.

9.5. Major Pig Iron Importers

USA

The USA is one of the leading producers and consumers of pig iron in the world. In 2008, the USA ranked only fifth in the output of pig iron, after China, Japan, Russia and Brazil. While as far back as in 2000 the economy ranked third in the output of pig iron in the world, after China and Japan.

Pig iron production in the US (mln. tons) and the portion of the USA in the global output (%)



Based on the WSA

Reduced pig iron production is largely due to the changes in the structure of steel production, namely the increase of electric steel production in the economy. In addition, environmental restrictions and high payroll and electric power expenditure resulted in steel companies having to import more pig iron, mainly from Brazil.

According to the WSA, in 2008, the economy produced about 33 mln. tons of pig iron, which turned out 31.1% lower than in 2000. Please bear in mind that the USA felt the negative impact of the economic crisis earlier than other economies, resulting in a significant drop in production of ferrous metals, and pig iron as well, during the last months of 2008. In 2008, in the USA, like in most other economies of the world, the steel industry exercised favorable conditions during the first six months and reflected growth in the output of ferrous metals. However, aggravating financial crisis end of last year led to a sharp drop in the output of pig iron and steel in the economy.

As a result, in 2008, the USA showed reduction in the output of pig iron by 8.7% versus the previous year down to 33 mln. tons (versus 36.55 mln. tons the year before). Steel production in the USA in 2008 decreased by 6.8% down to 91.49 mln. tons. The reduction of pig iron and steel production, for instance, in December 2008 versus December 2007 amounted to 38.6 and 52% respectively. The workload of steel production facilities fell down to 50%, and during some weeks it was below 50%. At the same time, in January-September 2008, the output of pig iron in the economy increased by 4.8% and reached almost 28.2 mln. tons.

The output of pig iron continued falling in 2009 and already in February, the production dropped to 1.2 mln. tons, and then went slightly up in April and exceeded 1.3 mln. tons. The total pig iron production for January-April 2009 in the USA amounted to 5.3 mln. tons, which is 57.6% lower than in the same period last year.

Therefore it is not surprising that imports of pig iron into the USA in 2008 decreased versus 2007 by 4.6% and totaled less than 5 mln. tons (versus 5.22 mln. tons the year before).

In the recent years the USA has been the world's largest importer of pig iron. But the import of pig iron in the USA has shown a downward trend. In 2006, the USA imported 6.7 mln. tons, which is 12% higher than 6 mln. tons in 2005. At the end of 2007, the imports of pig iron in the economy equaled 5.22 mln. tons, which was 22.5% lower than in the previous year. In 2000, the imports of pig iron into the USA amounted to around 5 mln. tons.

In the first quarter of 2008, the imports of pig iron in the USA decreased by 14.4% versus the same period of the previous year and equaled 814.331 tsd.t. Reduction of import to a great extent is due to the dollar losing position against other currencies. Primarily, reduced import of pig iron to the U.S. market was due to Russia, which, according to the US Dept. of Commerce, Bureau of the Census, made a zero supply during the first quarter 2009.

Brazil that has traditionally been the main supplier of pig iron to the U.S. market increased the supplies by 6.1% up to 766.547 tsd.t in January-March last year (versus 722.326 tsd.t the year before). The portion of Brazil in the total imports of pig iron into the USA for the first quarter last year was 94.1% (versus 75.9% the year before).

During 2008, Russia cut off supplies of pig iron to the USA market versus the previous year by 37.5% down to 711.3 tsd.t (versus over 1.1 mln. tons the year before). According to the Federal Customs Service, the supply of pig iron to the USA in 2008 amounted to nearly 1.35 mln. tons (versus 2.03 mln. tons in 2007).

At the same time, Brazil increased the supply of pig iron to the USA by 2.8%. As a result, the portion of Brazil in the structure of U.S. imports of pig iron rose to 72.5%, while Russia's portion went down to 14.3%. Also, Ukraine's and Canada's portions in the total imports of pig iron in the USA went up. Although Ukraine increased the supply of pig iron to the USA by 9.6% in the past year, the total amount was still less than 310 tsd.t.

Brazil and Russia are the major importers of pig iron into the USA, 89% in 2007 and nearly 87% in 2008.

In the first six months of 2008, the prices for imported pig iron went up due to the overall rise in prices for pig iron in the world market and increased costs for fuel and energy resources. The prices for pig iron, when supplied to the USA in June 2008, were almost \$900/t on a barge, NOLA terms of delivery. End of last year, the prices for pig iron dropped sharply and were already \$320/t on the same terms of delivery.

In January 2009, the prices for imported pig iron in the USA slightly increased and then continued falling in March and April down to \$256/t on a barge, NOLA terms of delivery. However, in May, the prices for imported pig iron in the USA went slightly up.

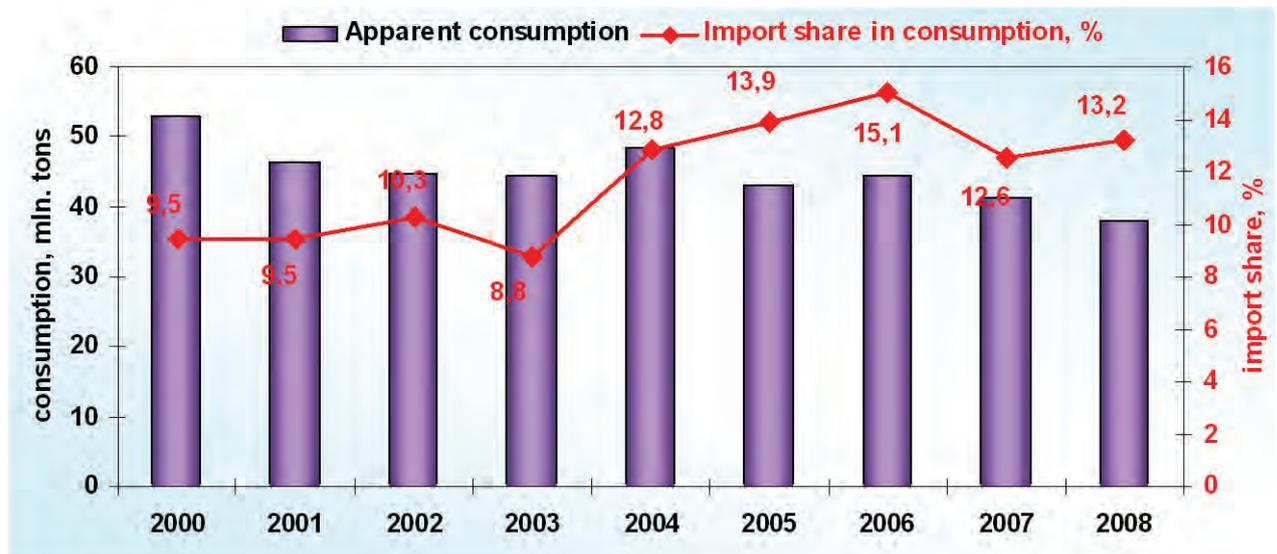
Import of pig iron into the USA in 2008

Economy	2007		2008		Change, %
	thousand tons	Percentage in Import	thousand tons	Percentage in Import	
Total	5,218.999	100.0	4,977.872	100.0	-4.6
Including:					
Brazil	3,509.161	67.2	3,606.952	72.5	2.8
Russia	1,137.181	21.8	711.278	14.3	-37.5
Ukraine	282.360	5.4	309.526	6.2	9.6
South Africa	114.035	2.2	93.905	1.9	-17.7
Canada	113.751	2.2	181.626	3.6	59.7
Sweden	-	-	33.365	0.7	-
Venezuela	15.282	0.3	29.206	0.6	91.1
Trinidad & Tobago	47.133	0.9	11.974	0.2	-74.6

Based on the Tex Report

Exports of pig iron from the USA are not significant and are not critical for the evaluation of apparent consumption in the economy. The percentage of import in consumption during 2000-2008 tended to grow and reached the maximum high in 2006 (over 15 %).

Apparent consumption of pig iron in the USA (mln. tons) and percentage of import in consumption (%)

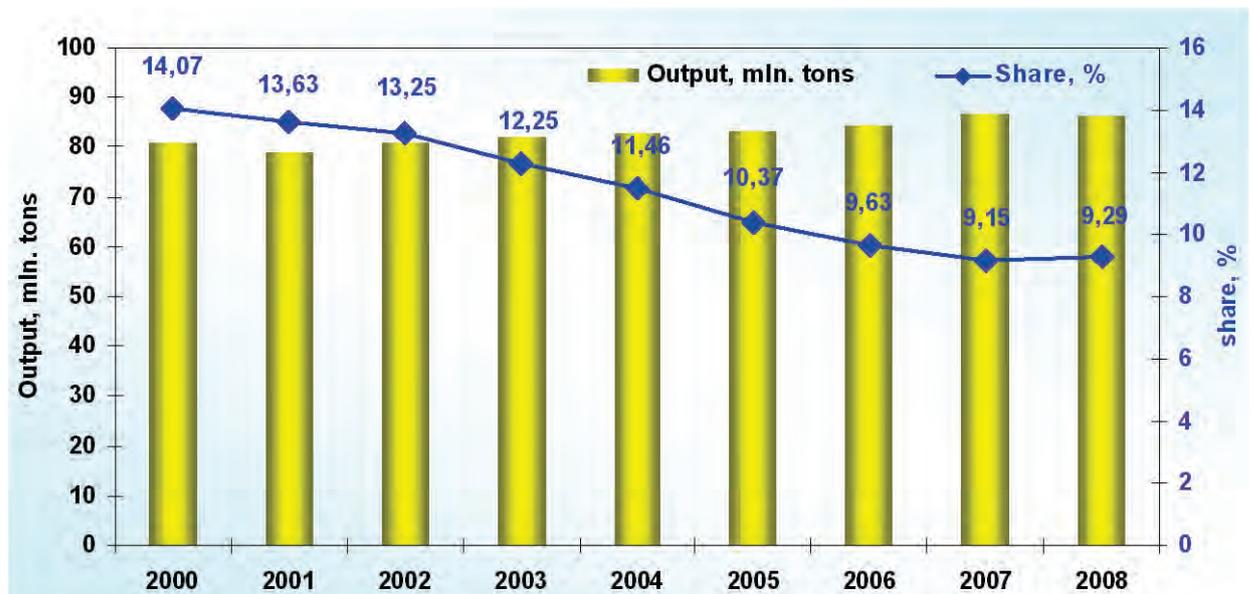


Based on the WSA, Tex Report

Japan

Japan rank is the second after China in the global output of pig iron. The level of pig iron production in the economy over the past few years has been quite stable, and has varied depending on the level of steel production in the economy, because steel production process in Japan is based on the converting technique of steel making.

Production of pig iron in Japan (mln. tons) and the portion of Japan in the global output (%)



Based on the WSA, Tex Report

The maximum production of pig iron in the economy during 2000-2008 was recorded in 2007 and amounted to 86.8 mln. tons. In 2008, due to the aggravating world economic crisis in the economy the production declined versus 2007, but the decline was negligible, 0.7% down to about 86.2 mln. tons. But as compared to 2000, in 2008 Japan increased the production of pig iron by 6.3%. The portion of Japan in the world output of pig iron has a tendency to decrease. As

far back as in 2000, the share of Japan accounted for 14.1% of the world output of pig iron, and only 9.3% in 2008.

In 2007, most steel companies who own businesses with a full metallurgical cycle, except Nippon Steel, increased pig iron production.

In January-August 2008, many Japanese steel companies again increased the output of pig iron and this led to the increase in the economy production within 2.6% versus the same period of the previous year, up to nearly 58.9 mln. tons. A new blast furnace was commissioned at Nagoya factory to enable Nippon Steel to boost the output of pig iron in January-August 2008 by 72%. The production increase at Nagoya factory equaled 29.2%. JFE Steel and Sumikin Iron & Steel slightly reduced the output, 1.5% and 0.1% respectively.

Though at the end of the year the Japanese steel companies had to reduce the output of pig iron. In November and December 2008, economy production of pig iron amounted to 6.5 and 6.1 mln. tons respectively. This is lower than performance in January-October 2008: from 7.1 to 7.5 mln. tons.

In the first months of 2009, Japan exercised a significant drop in pig iron production against a sharp reduction in steel production – down to 5.5 mln. tons in January and 4.4 mln. tons in February. The economy kept on showing lower production in April, too - 4.4 mln. tons. But it's important that the sharp reduction in the output in Japan ceased. Still, in January-April 2009, production of pig iron in Japan declined compared to the same period of the previous year by 35.7% down to 18.9 mln. tons. This is the minimum output of pig iron in a single month over the past decade.

Most of the steel companies that produce pig iron significantly reduced its production. Already in December the decline was more than 30%, for instance, at the Fukuyama factory, JFE Steel.

Steel companies have to shut down blast furnaces due to the ferrous metal market situation. Specifically, JFE Steel stopped two blast furnaces.

Pig iron smelting at Japanese metallurgic companies, thousand tons

Company / Factory	2008	2007	Change, %
<i>Nippon Steel</i>	<i>29,455.186</i>	<i>28,690.545</i>	<i>102.7</i>
Kimitsu	9,987.080	9,965.013	100.2
Nagoya	7,781.521	6,724.977	115.7
Yawata	3,370.175	3,552.005	94.9
Oita	8,316.410	8,448.550	98.4
<i>JFE Steel</i>	<i>28,969.155</i>	<i>30,657.741</i>	<i>94.5</i>
Chiba	3,942.538	4,182.556	94.3
Keihin	4,373.936	4,452.904	98.2
Kurashiki	9,680.836	10,302.020	94.0
Fukuyama	10,971.845	11,720.261	93.6
<i>Sumitomo Metal Kashima</i>	<i>8,130.827</i>	<i>7,763.384</i>	<i>104.8</i>
<i>Sumitomo Metal Kokura</i>	<i>1,405.898</i>	<i>1,487.734</i>	<i>94.5</i>
<i>Sumikin Iron & Steel</i>	<i>3,970.398</i>	<i>3,969.611</i>	<i>100.0</i>
<i>Kobe Steel</i>	<i>8,330.142</i>	<i>8,313.590</i>	<i>100.2</i>
Kakogawa	6,863.944	7,051.041	97.3
Kobe	1,466.198	1,262.549	116.1
<i>Nisshin Steel</i>	<i>3,625.142</i>	<i>3,609.638</i>	<i>100.4</i>
<i>Hokkai Iron</i>	<i>2,284.388</i>	<i>2,278.512</i>	<i>100.3</i>
TOTAL	86,171.136	86,770.755	99.3

Based on the Tax Report

In the recent years Japan has been quite a prominent importer of pig iron. In 2007, the import of pig iron into the economy went slightly down because national steel companies showed pig iron production growth up to 1.309 mln. tons (by 8.1 %).

Import of pig iron into Japan by economies

Economy	2006		2007		2008	
	thousand tons	tsd. \$	thousand tons	tsd. \$	thousand tons	tsd. \$
Total	1,425.46	479,578.747	1,309.361	518,869.000	879.476	53,630.102
Including:						
Russia	297.722	98,228.262	340.192	135,159.100	269.594	17,147.872
Brazil	100.748	32,745.779	311.519	117,695.300	202.693	12,788.551
India	179.978	58,540.314	373.132	136,695.000	132.146	8,075.408
Korea	8.122	2,057.124	46.903	16,964.340	148.332	8,182.274
South Africa	22.598	8,646.293	21.996	9,031.116	27.990	2,037.974
China	731.029	260,267.241	165.067	89,739.420	13.860	874.440
Ukraine	-	-	-	-	35.511	2,155.992
Serbia	-	-	9.992	4,179.590	5.009	254.681
Chinese Taipei	63.954	13,467.818	37.675	8,490.112	35.491	1,460.853

Based on Tax Report

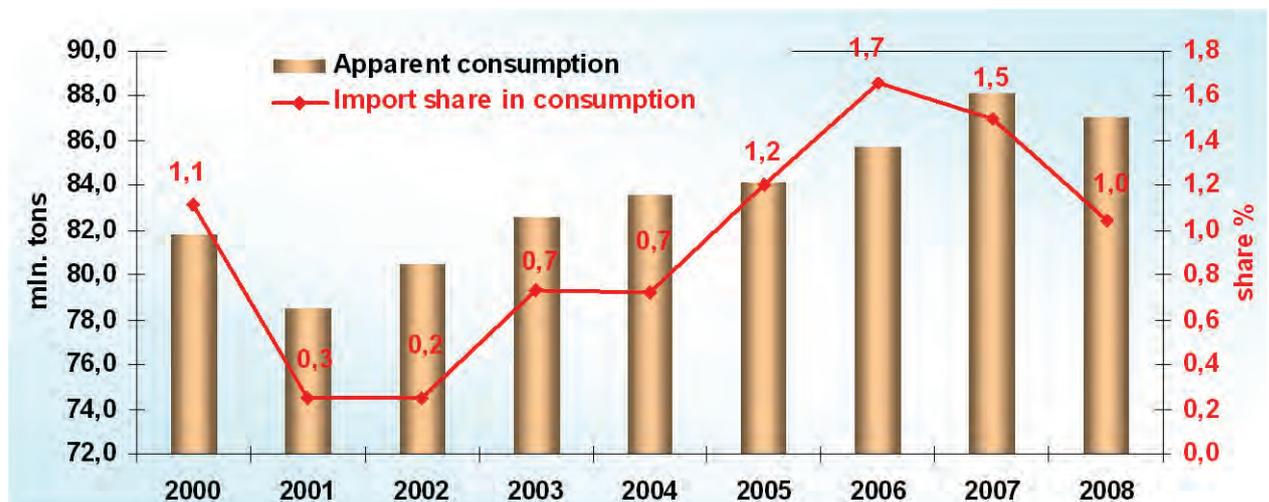
In 2008, imports of pig iron into Japan amounted to about 879.5 tsd.t, which is almost 33% lower than in the previous year. Major suppliers are Russia, Brazil, India and Korea. In 2008, Russia ranked first in pig iron supplies to Japan. In 2000, imports of pig iron to Japan has increased drastically compared to 1998 and 1999 and reached 851 tsd.t, which is only slightly lower than in 2008. Though the imports of pig iron significantly went down again in 2001 and 2002 and began recovering only starting 2003.

Exports of pig iron from Japan in the last few years has been very low (less than 50 tsd.t per year) and had no significant impact on the domestic market.

In total in 2008, Japan exported 40.6 tsd.t of pig iron. Japan shipped 31 tsd.t out of the total export to Korea and 6.3 tsd.t to Thailand. But until 2002, Japan had been a major exporter of pig iron and in 2002, the exports of pig iron out of the economy amounted to almost 680 tsd.t.

Japan rank is the second after China in the consumption of pig iron.

Apparent consumption of pig iron in Japan (mln. tons) and the share of import in the consumption (%)

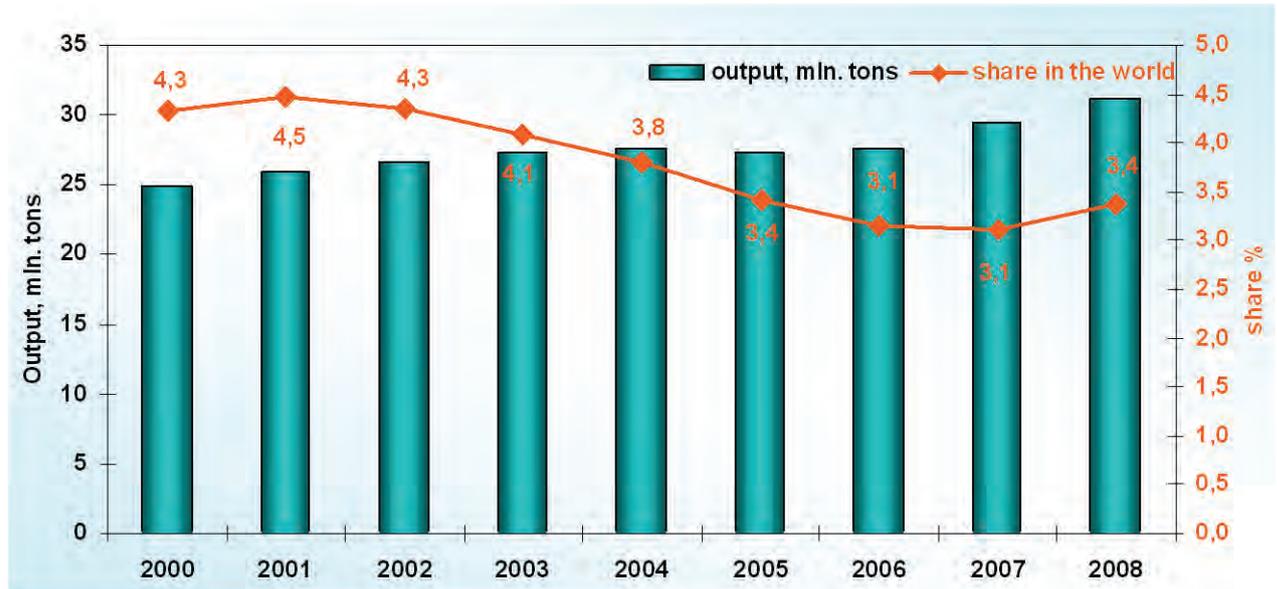


Based on the WSA, Tex Report

Korea

Korea significantly increased the output of pig iron during 2000-2008: almost by 25.2% up to nearly 31.2 mln. tons. The main producer of pig iron in the economy is Posco. Korea ranks sixth after the USA in the output of pig iron in 2008.

Pig iron Output by Korea (mln. tons) and Economy's World Market Share (%)



Source: WSA, Tex Report, customs statistics

The portion of the economy in the global output of pig iron tends to decrease despite the production growth. This is due to the sharply increased output of pig iron in the world resulting from pig iron production expansion in China.

Korea is a large-volume importer of commercial iron. In 2008 Korea slightly increased the pig iron import volume versus the previous year by 4.35 %, up to 1.22 mln. tons (versus 1.17 mln. tons). In the middle of the last year Korea did the major purchase. Within the first half of 2008 almost 550 thousand tons of pig iron was imported into the economy, which is 2.7 % higher versus the same period the previous year (535.5 thousand tons). Though, this year during January to August the pig iron import volume reached almost 922 thousand tons, which is 21.5 % higher versus the same period the previous year. At the end of the last year, at the time of the world financial crisis and decline in ferrous metal demand, Korea cut down the pig iron import volume. In the first quarter of 2009 Korea again reduced the pig iron import volume, by 53.5 % versus the same period the previous year, up to 116.5 thousand tons (versus 250 thousand tons in the previous year). In addition, based on the customs statistics data, in the first quarter of 2009 there was a significant decline in Russian pig iron import volumes, almost by 94 %, up to 7.8 thousand tons (versus 123.7 in the previous year). However, Brazil has increased the import volumes to the Korea market by 76.9 %, up to 96 thousand tons. That is, in the first quarter of 2009 the Brazil share of the total pig iron import volume for Korea was as much as 82.2 % (21.6 % versus 1Q, 2008).

Pig iron Import to Korea in 2007 and 2008, Thousand tons

Economy	2008	2007	Change, %
TOTAL	1 216.731	1 165.975	4.35
Including:			
Russia	420.783	557.948	-24.6
Brazil	370.025	138.446	167.3

China	166.494	103.718	60.5
Chinese Taipei	43.903	60.650	-27.6
Japan	32.912	38.848	-15.3
South Africa	22.134	27.100	-18.3
India	147.228	68.527	114.8
Ukraine	6.055	170.236	-96.4

Source: WSA, Tex Report, customs statistics

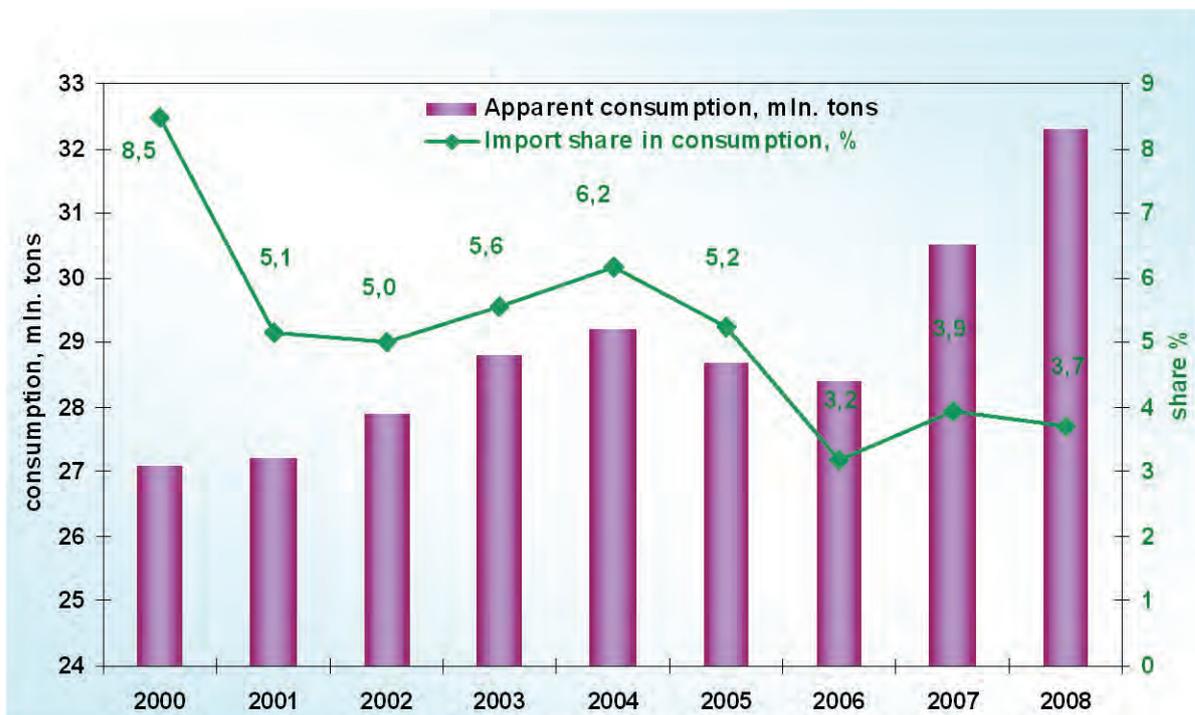
Last year major pig iron importers to the Korea market are Russia, Brazil, India, and China. Whereas Russia has significantly reduced the import volumes for Korea in 2008 versus 2007 and Ukraine almost withdrew from the Korea market, Brazil, India, and China have increased their import volumes to Korea.

Brazil and China have increased the pig iron import volumes to Korea by 167.3 and 60.5 %, and up to 370 and 166.5 thousand tons correspondingly. India has increased the commercial iron import volume to Korea more than twice, up to 147.2 thousand tons.

According to the Korea customs statistics, in 2008 Russia imported almost 421 thousand tons of pig iron, which is 24.6 % less versus the previous year volume. Japan also has cut down the pig iron import volume by 15.3 %, up to 33 thousand tons.

In addition, Chinese Taipei, South Africa, and Hong Kong, China also export their pig iron to Korea. Note that in 2008 Ukraine exported only 6 thousand tons of pig iron versus over 170 thousand tons in 2007.

Apparent Pig iron Consumption in Korea (mln. tons) and Import Share in Consumption (%)



Source: WSA, Tex Report

Pig iron consumption in Korea is mainly due to the metallurgical production of the economy. The pig iron production growth resulted in reduced import ratio in consumption. During recent years the import ratio in consumption has stabilized at the level of 3-4 %.

Chinese Taipei

Chinese Taipei is one of large-volume importers in APEC. In 2008 Chinese Taipei imported 778 thousand tons of pig iron, which is 8.1 % lower versus 2007 volumes. Brazil is a key pig iron exporter to Chinese Taipei – 57.3 % of the total import value. In the past few years Brazil has gradually increased the pig iron export to Chinese Taipei – from about 206 thousand tons in 2006 to 446 thousand tons in 2008. At the same time Russia, which earlier was a leading pig iron exporter to Chinese Taipei, is cutting down the export volumes. As a result, the Russia's share of pig iron import volumes to Chinese Taipei decreased from 57 % in 2006 to 32.2 % in 2008.

Besides, South Africa, Viet Nam, Japan, China and other economies also export pig iron to Chinese Taipei.

Pig iron Import to Chinese Taipei (Source: Chinese Taipei Directorate General of Customs)

Economy	2006		2007		2008		2008/2007 Change, %
	Thousand tons	Import Share, %	Thousand tons	Import Share, %	Thousand tons	Import Share, %	
TOTAL	682.6	100	846.2	100	777.8	100	-8.1
Including:							
Brazil	205.7	30.1	339.5	40.1	446.0	57.3	31.4
Russia	389.2	57.0	328.6	38.8	250.2	32.2	-23.9
South Africa	26.0	3.8	26.7	3.2	35.5	4.6	32.8
India	39.8	5.8	26.9	3.2	22.3	2.9	-16.9
Viet Nam	9.4	1.4	18.9	2.2	10.3	1.3	-45.7
Japan	0.5	0.1	0.5	0.1	5.6	0.7	...

10. FERROUS SCRAP GLOBAL MARKET*

10.1. APEC Role at the Ferrous Scrap Market

The world economic crisis, which caused the reduction of steel output globally, resulted in reduced volumes of ferrous scrap consumption. In 4Q, 2008, the world demand for ferrous scrap dropped by 30-40 %.

Still, the USA remains the world leading exporter of ferrous scrap. In 2008 the ferrous scrap export from this economy increased by 30.7 % versus the previous year. The major export growth occurred in May to August, 2008, with over 2 mln. tons of a monthly supply volume.

In 2008 European economies, especially Germany, Great Britain, France, and Netherlands have kept their world export volumes at the level of 2007.

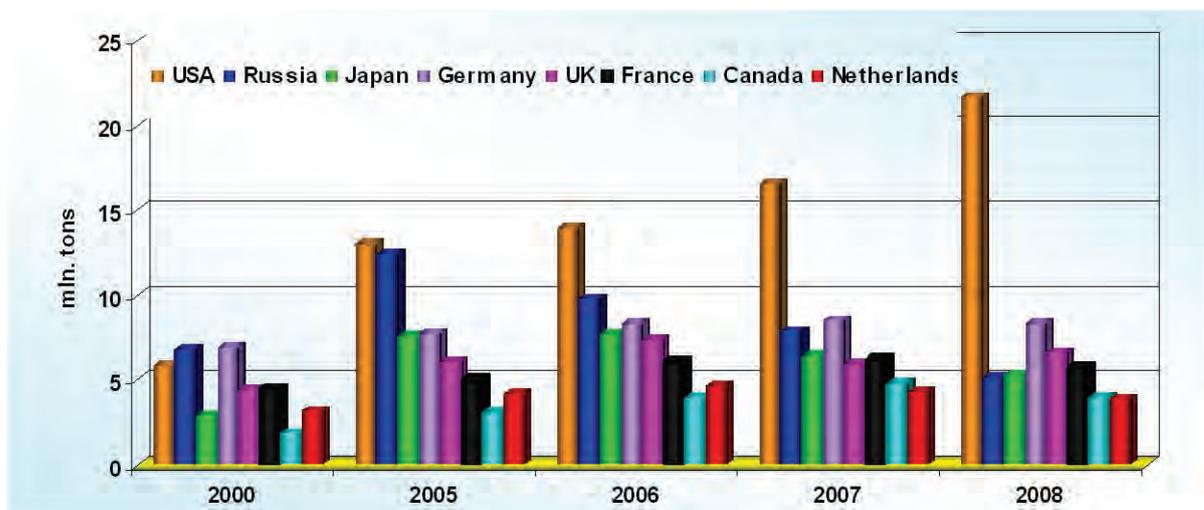
Japan and Russia cut down their ferrous scrap export volumes to the world market in 2008 versus 2007 by 17 and 35 % correspondingly due to reduced export volumes at the end of the year after the world economic crisis spread out. Besides, the growth of ferrous scrap consumption in Russia must be born in mind which is due to the development of electric steel production.

Turkey is the world leader among the ferrous scrap exporters. In 2008 there was a slight growth in the ferrous scrap export, by 1.7 %.

The APEC share on the world ferrous scrap market is quite significant. The APEC export share globally increased by 33 % in 2000, and by 45 % in 2008 mainly due to increased supply volumes from the USA. The APEC import share on the world level reduced from 40 % in 2000 to 32 % in 2008. The APEC share reduction was due to reduced supply volumes to China. Besides, there are significant differences in the data, given by China sources, on the ferrous scrap export volumes to China by various economies as compared to the data of those economies. E.g., the ferrous scrap export volumes from USA and Japan to China are much higher versus the data provided by China. This difference is big enough.

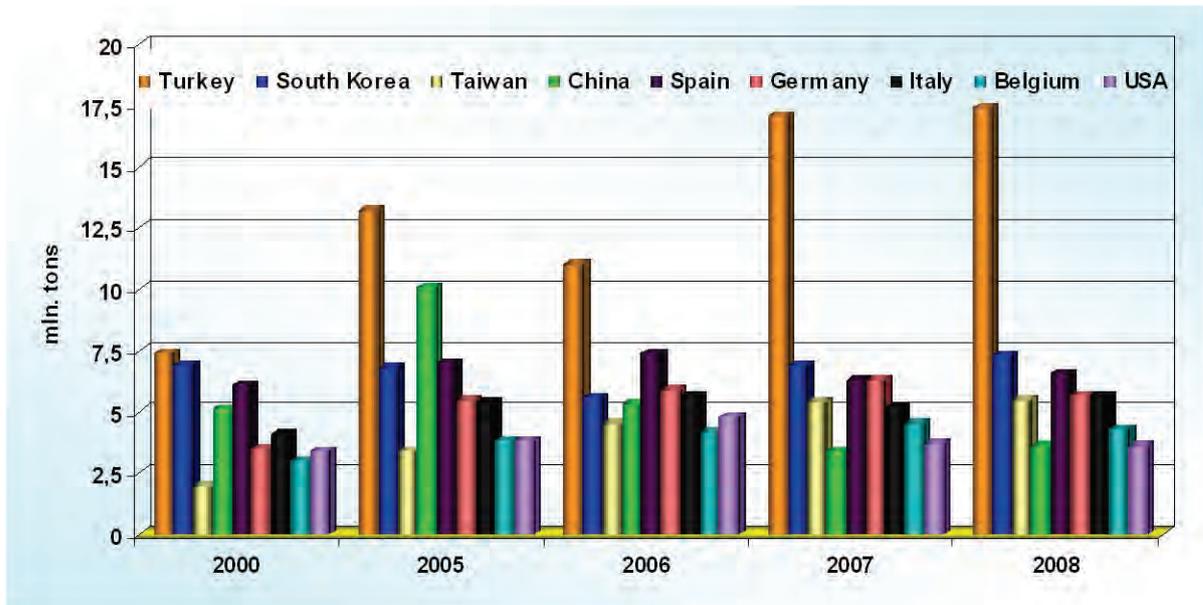
Although China is increasing the ferrous scrap import volume for the prices are more attractive versus iron ore prices, the ferrous scrap export volume to China reduced versus 2000 – from 5.1 to 3.6 mln. tons in 2008. The peak import volume in China was registered in 2005.

World Leading Exporters of Ferrous Scrap, mln. tons

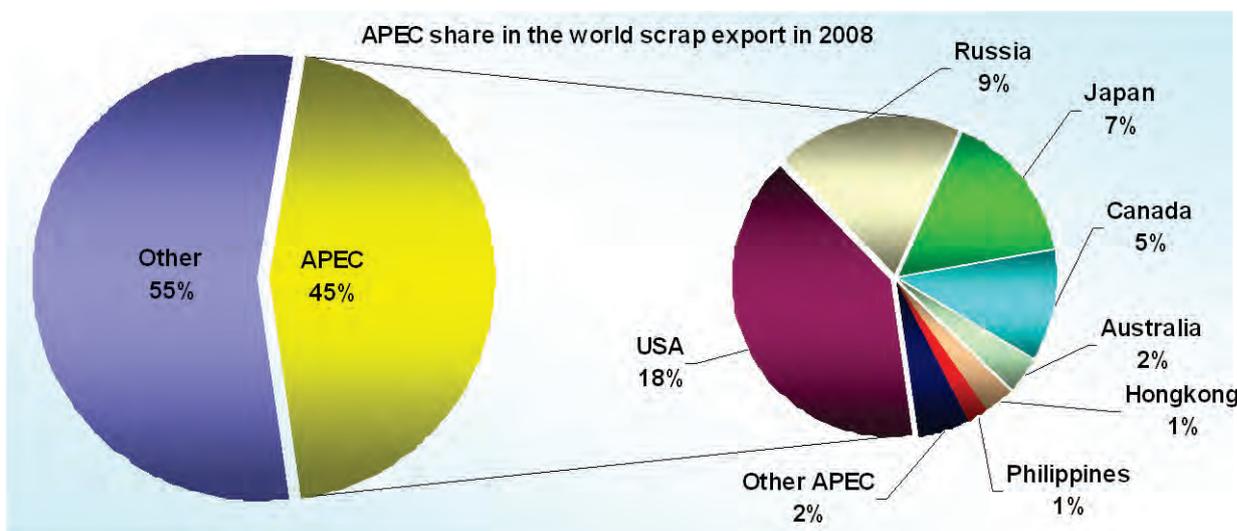
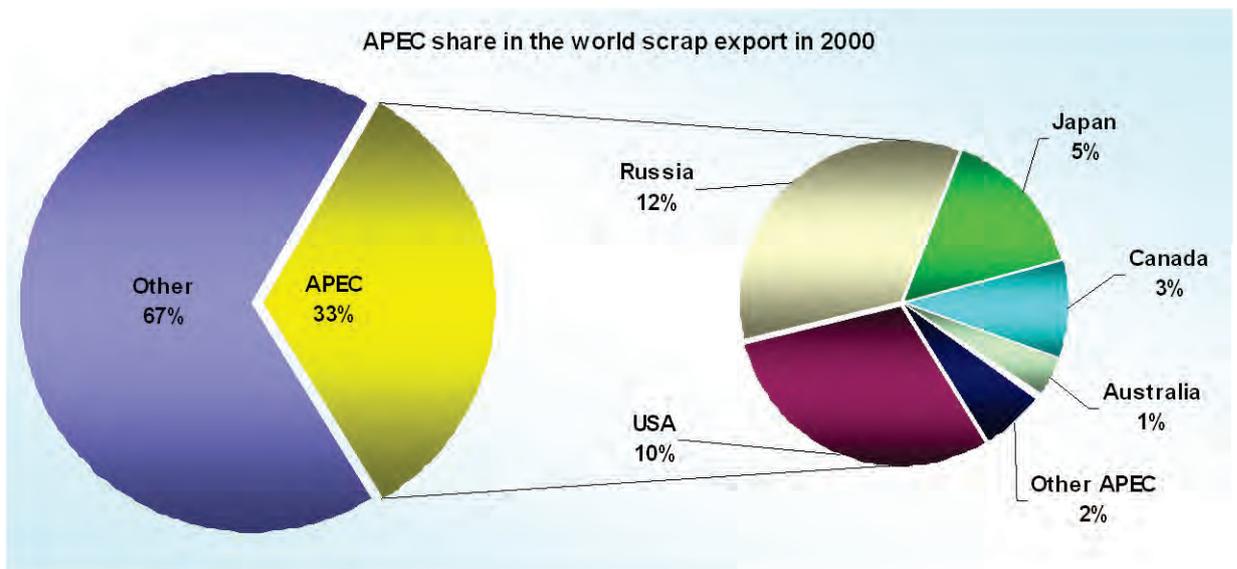


* Data Sources: AME [5], Tax Report [3], MySteel [24], WSA [2], Customs Clearance

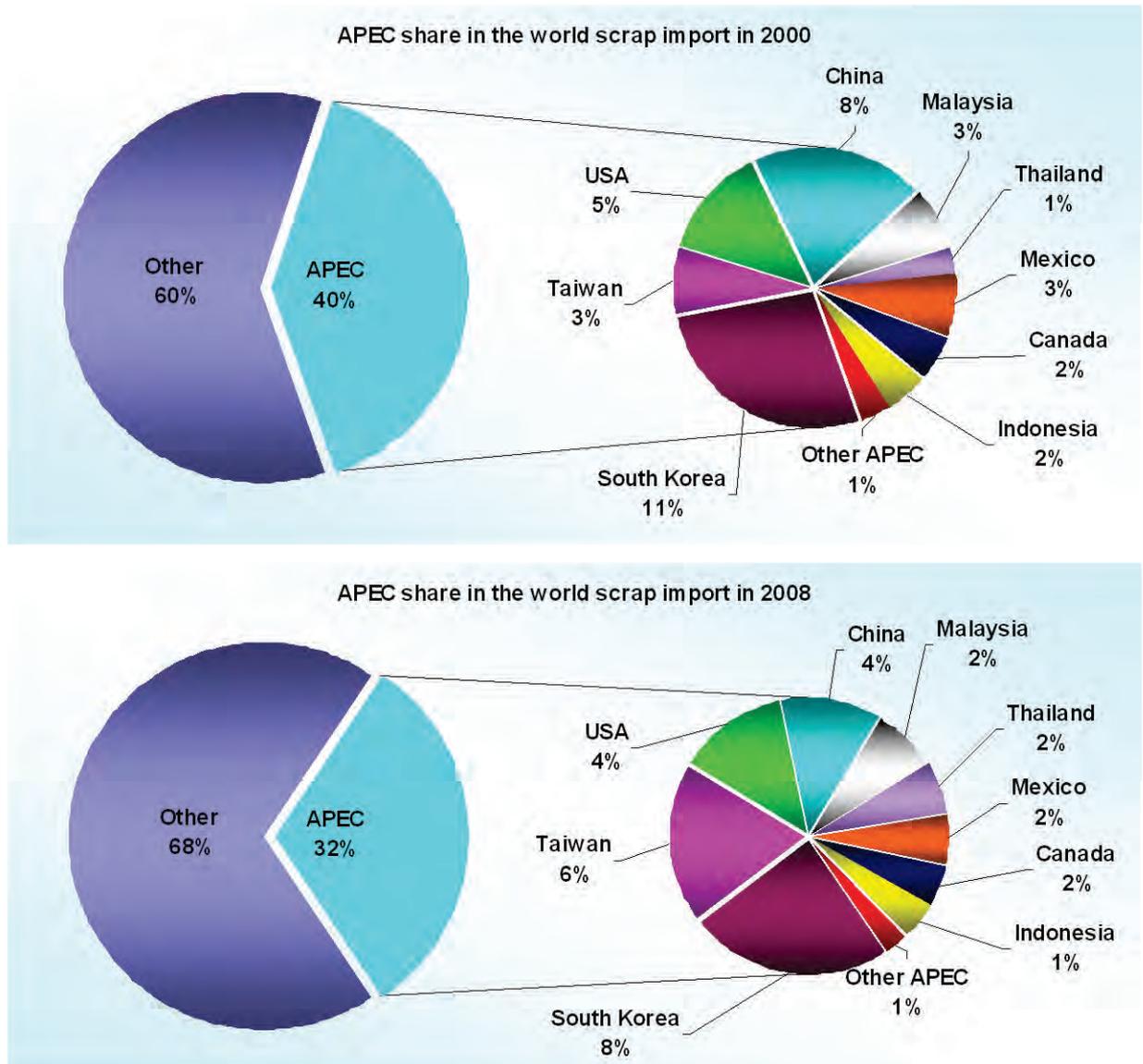
World Leading Importers of Steel Scrap, mln. tons



APEC Share in World Export of Steel Scrap in 2000 and 2008



APEC Share in World Import of Steel Scrap in 2000 and 2008



USA

Steel-making in the USA in 2008 reduced by 6.8 % versus 2007 which equals 91.5 mln. tons. In addition, electric steel output reduced by 15.6 %, as basic-oxygen steel remained at the level of 2007. This greatly influenced ferrous scrap consumption. Thus, ferrous scrap import to the USA reduced by 2.7 % which equals 3.6 mln. tons (versus 3.7 mln. tons in 2007). Though, iron-reach material import for the same period increased by 4.3 % i.e. 2.4 mln. tons (2.3 mln. tons in 2007).

Due to reduction of production volumes over the economy, the home market was overflowed with surplus ferrous scrap. Therefore, the reduced ferrous scrap export from Russia was abundantly balanced by increased supply from the USA.

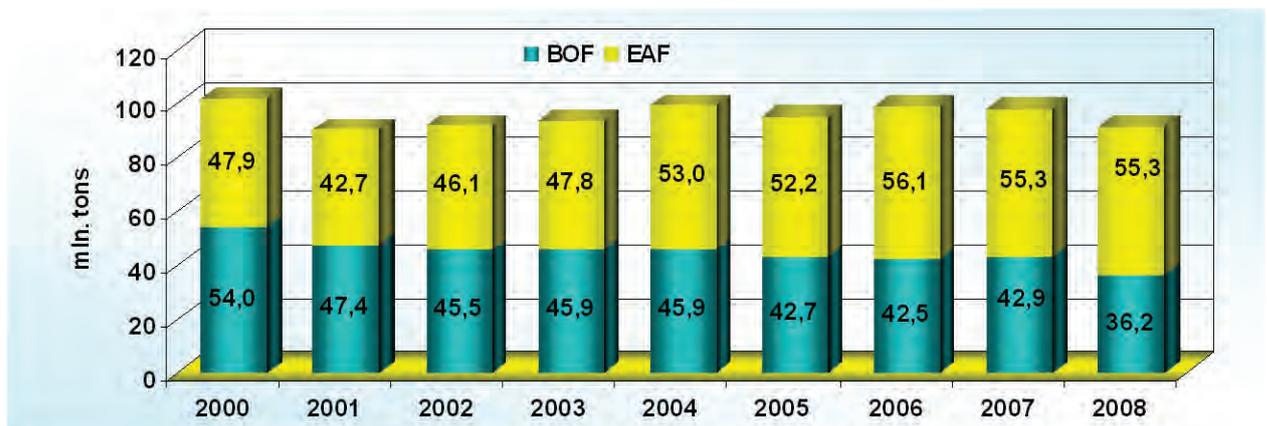
In 2008 the USA increased ferrous scrap export volume by 30.5 % which equals 5.07 mln. tons versus 2007. The total volume of the last year world export volume by the USA is 21.712 mln. tons. For the first time the world market supply from a single economy exceeded 20 mln. tons annually. As for the export volumes allocation by economy, American ferrous scrap export to Turkey has increased. In 2007 they exported 3.26 mln. tons to this economy, but in 2008 the export volume increased up to 4.48 mln. tons. The share of Turkey in the total export volume of American ferrous scrap increased in 2008 by 20.6 % (versus 19.6 % in 2007).

After a short period of reduced volumes of imported ferrous scrap from the USA, China resumed its active consumption of ferrous scrap. In 2008, based on the USA customs statistics, the export volume of American ferrous scrap to the China market increased by 358 thousand tons (by 14.5 %), which in total amounts to over 2.87 mln. tons. The share of China in overall export volume of ferrous scrap from the USA last year slightly reduced versus the previous year, i.e. by 13 % (versus 14.8 % in the previous year). In general, in 2008 the USA increased the ferrous scrap export to the most economies. There was a significant growth of ferrous scrap export to Asia, including Korea (by 93.1 %), to Chinese Taipei (by 49.2 %), to Malaysia (by 2.6 %), Thailand (by 23.9 %), India (by 13.1 %), Viet Nam (by 93.6 %), and Indonesia (by 70.7 %). The ferrous scrap export from USA to Egypt increased greatly, by 72.6 %, up to 870 thousand tons.

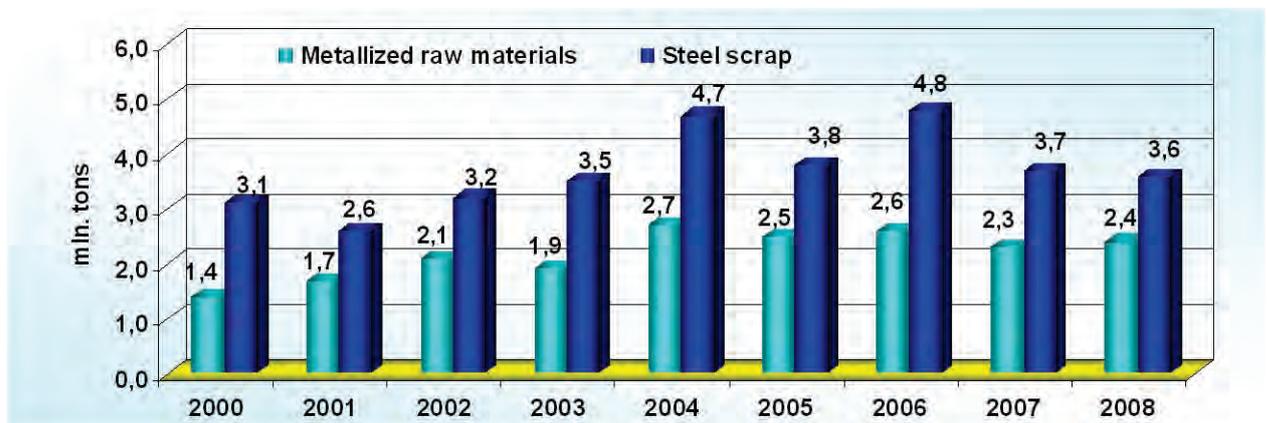
Please note, that the ten economies which are the major consumers of American ferrous scrap share as much as 88+ % of the supply volumes.

Starting from early 2008 the USA was gradually increasing the ferrous scrap export to the world market, which was aligned with the world tendency of steel output growth those days. Maximum monthly volumes of ferrous scrap supply were registered during May to August (from 2.3 to 2.5 mln. tons). After that the volumes of ferrous scrap export started to fall down. In November the minimum monthly volume for 2008 was registered: 1.17 mln. tons. Though, the export volumes slightly increased again in December. See the data on ferrous scrap export from USA in 2008 by month below.

Steel Output by Production Method in USA, mln. tons



Import of Metal-rich Material and Scrap Steel in USA, mln. tons



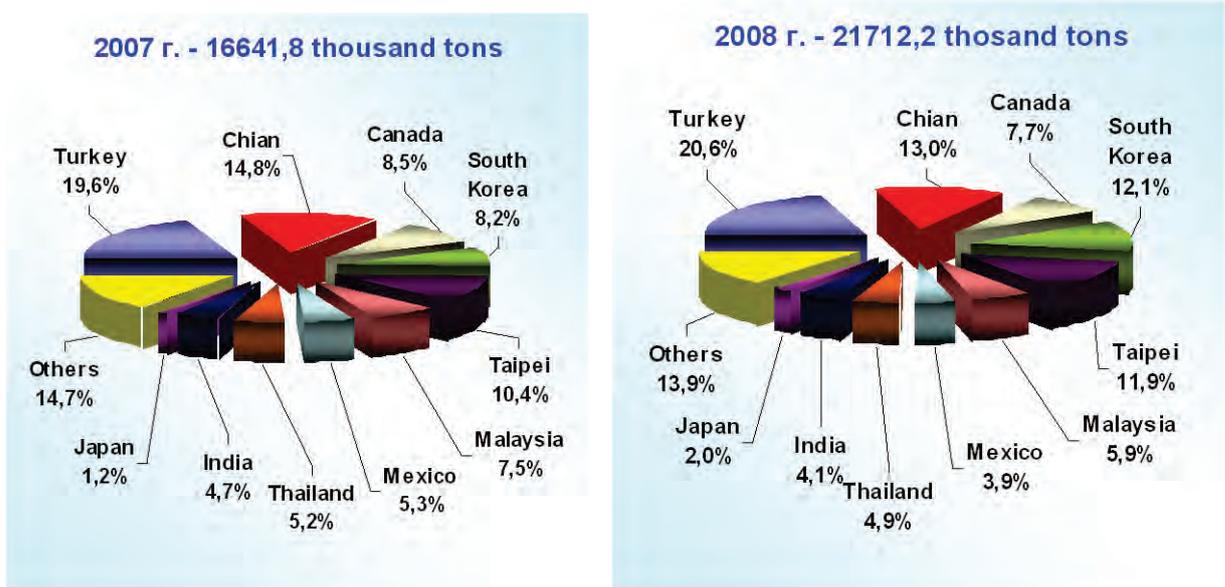
Export of Ferrous scrap from USA, thousand tons

Importer	2007	2008	Change, %	1 Q, 2008	1 Q, 2009	Change, %
TOTAL	16641.8	21712.2	30.5	4518.7	4997.2	10.6

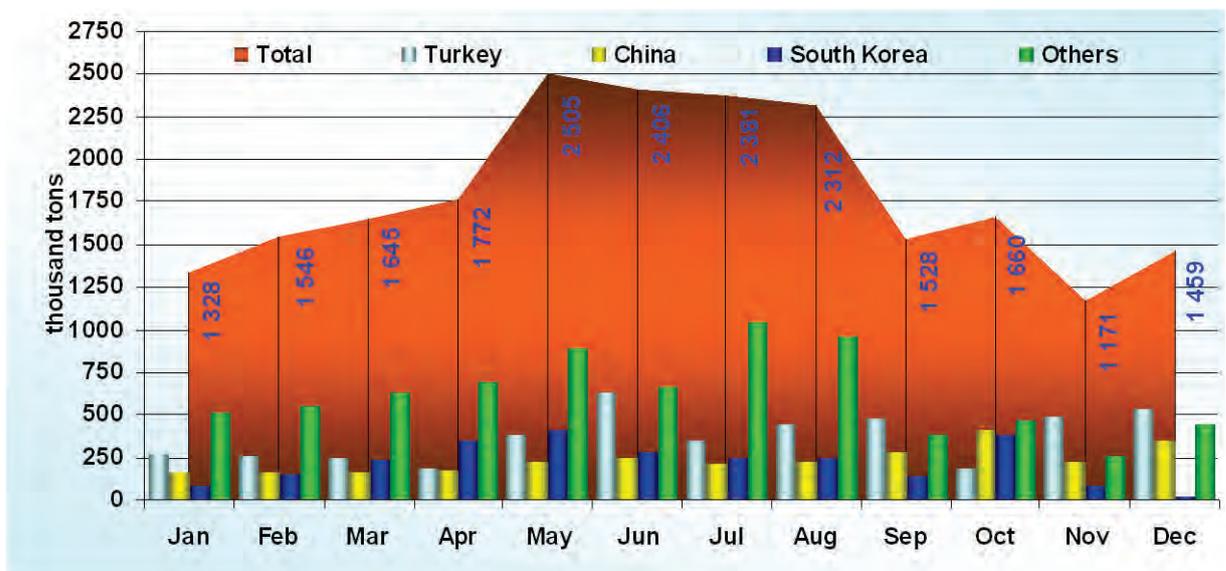
Turkey	3261.3	4481.9	37.4	779.5	609.2	-21.8
China	2469.1	2827.3	14.5	490.0	1982.6	304.6
Canada	1416.8	1676.5	18.3	331.1	272.5	-17.7
Korea	1364.6	2635.3	93.1	458.4	604.4	31.9
Chinese Taipei	1728.9	2579.7	49.2	760.3	285.1	-62.5
Malaysia	1240.8	1273.0	2.6	183.0	1.8	-99.0
Mexico	880.8	847.5	-3.8	236.7	87.7	-63.0
Thailand	857.3	1062.5	23.9	282.9	111.8	-60.5
India	780.6	882.6	13.1	153.4	359.4	134.3
Japan	201.5	436.1	116.5	42.7	10.2	-76.1
Other	2440.1	3009.7	23.3	800.8	672.5	-16.0

Source: AME [5], Tax Report [3], Customs Clearance

The Dynamics of Share of Leading Importers of American Ferrous scrap in 2007-2008



Steel Scrap Export from USA by Month in 2008, thousand tons



Please note, that in the first quarter of 2009 the export volumes of ferrous scrap from the USA increased by 10.6 % versus the first quarter of 2008, though the growth rate significantly decreased. Many of the key consumers of American ferrous scrap reduced their purchase volumes. The growth of export volumes from the USA in 1Q, 2009, was mainly due to China consumption volumes.

According to the US Department of Commerce, the export volumes of stainless steel scrap from the USA increased in 2008 by 14.1 % versus the previous year, which made just above 1.15 mln. tons (versus 1.008 mln. tons in the previous year). This is the peak level of stainless steel scrap export from this economy during the recent years. The export share of scrap chrome-bearing metal was as high as over 80 % (versus 65% in the previous year) in 2008. This is mainly due to lower nickel prices at LME and ferrochrome price growth at the world market. As a result, the average export price for stainless steel scrap from the USA decreased in 2008 versus the previous year by 33.6 %, which made \$1100.56/t (versus \$1656.44/t in the previous year). In addition, the export prices for the stainless steel scrap fell down significantly by the end of the year. The average export price for the ferrous scrap in November 2008 was as much as \$763.9/t versus \$684.5/t in December.

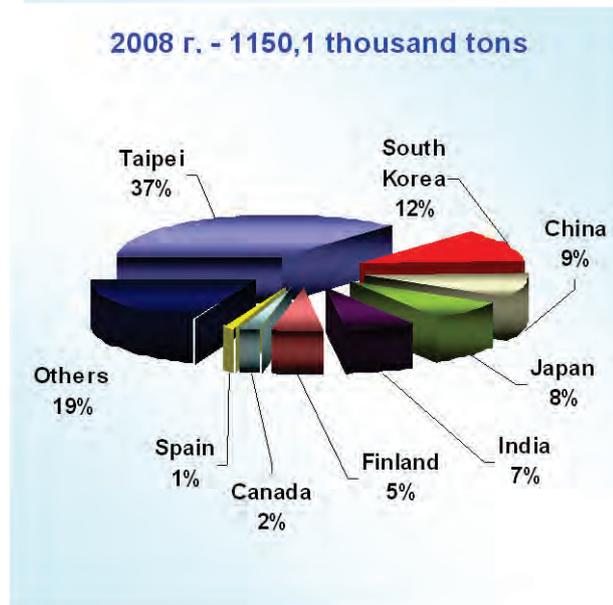
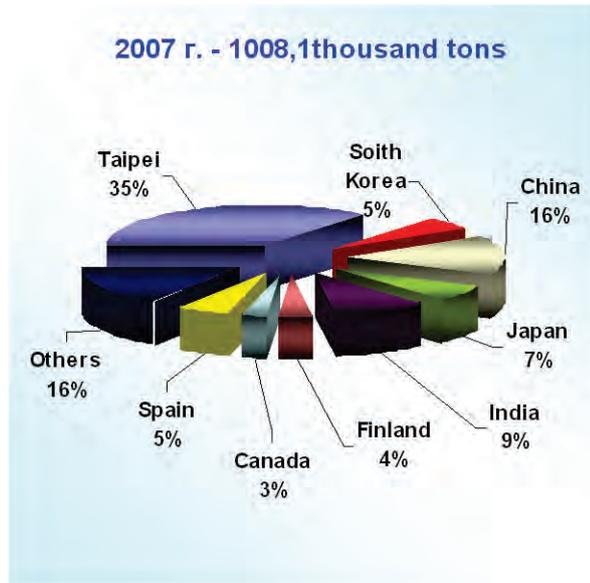
During January to May, 2008, the average monthly export volumes of stainless steel scrap from the USA to the world market were about 110 thousand tons. In June the export volumes of stainless steel scrap increased up to 140 thousand tons. From then on, monthly export volumes were gradually decreasing. During November to December the export volumes of ferrous scrap were about 60 thousand tons.

Export Volumes of Stainless Steel Scrap from USA, thousand tons

Economy	2007	2008	Change, %
TOTAL	1008.1	1150.1	14.1
Chinese Taipei	360.4	422.4	17.2
Korea	53.7	143.1	166.6
China	158.7	100.9	-36.4
Japan	65.6	93.7	42.9
India	94.8	80.1	-15.5
Finland	36.0	56.1	55.7
Canada	26.9	23.1	-14.2
Spain	52.8	13.2	-75.0
Other	159.2	217.6	36.7

Source: AME [5], Tax Report [3], Customs Clearanc

Changes in Share of Importers of American Stainless Steel Scrap in 2007-2008



Key consumers of American stainless steel scrap are the Asian economies. Major supply volumes during the last year, as well as in 2007, were due to Chinese Taipei. In 2008 the export volumes of stainless steel scrap to Chinese Taipei were over 422 thousand tons, which is 17.2 % higher versus the previous year. Chinese Taipei share of the total American stainless steel scrap export was 36.7 %. Korea consumers increased their purchase volumes of stainless steel scrap by over 2.7 times. The export volume in 2008 to this economy was 143.1 thousand tons (versus 53.65 thousand tons in the previous year). As for the ferrous scrap content, this economy started to import large volumes of chrome-bearing steel. Among the biggest importers of American stainless steel scrap are also China (100.9 thousand tons in 2008, decreased versus 2007 by almost 58 thousand tons). Export volumes to Japan increased by 42.9 %, up to 93.743 thousand tons (versus 65.605 thousand tons in 2007).

Russia

In recent years, the export volumes of ferrous scrap from Russia are decreasing. Total volume of ferrous scrap export in 2008 decreased by 20.9% compared to 2007, amounting to less than 7.5 mln. tons.

Because of the high prices of the ferrous scrap, monthly volumes of ferrous scrap collection in Russia in 2008 have demonstrated mostly positive dynamics versus last year

volumes until September (inclusive). Therefore, in general, in 2008 the volume of ferrous scrap collected in Russia amounted to almost 27 mln. tons (92% compared to 2007).

The supply volume of ferrous scrap by rail for the smelting industry during 12 months 2008 amounted to nearly 21.3 mln. tons (96% by 2007).

Such a small reduction in the consumption of ferrous scrap in a much more obvious decline of not only collection and export of ferrous scrap, but also the production of metal products was due to very rapid development of electric steelmaking in Russia.

As for the supply of ferrous scrap in 2008 by month, it has shown steady positive trend up to September inclusive, with confidence exceeding the last year level (with the exception of January, in September the exceeding value versus last year level of consumption was 24%).

Export of ferrous scrap from Russia to other Economies, thousand tons

Economy	2007	2008	Change, %
TOTAL	9 428.0	7 458. 1	-20.9
Turkey	3324.6	2002.7	-39.8
Belarus	1399.4	1418.6	1.4
Spain	1203.2	963.9	-19.9
Korea	858.3	1201.8	40.0
Moldova	352.1	176.6	-49.8
France	110.5	177.1	60.3
Egypt	285.5	167.4	-41.4
Chinese Taipei	433.3	149.8	-65.4
Finland	141.0	129.8	-7.9
Greece	258.6	129.2	-50.0
Thailand	101.1	111.9	10.7
Other	960.4	829.3	-13.7

Source: Customs statistics

In October and November, 2008, there was a drastic reduction in ferrous scrap supply to the steel industry caused by the even more impressive reduction in the production of steel and products thereof. In October 2008 the supply of ferrous scrap has declined to 59% versus the level of October 2007 (doubled versus the previous month), in November - up to 24% versus the last year level (by 2.6 times versus October 2008, and by 5.4 times versus the peak level in July, 2008).

In December there was a slight increase in shipments of ferrous scrap by rail: 71% versus December 2007 level, and an increase of almost 2.7 times versus November, 2008.

Current events and conditions in world markets, as well as the decision of RF FCS on the transfer of authority for ferrous scrap customs clearance to only 10 customs posts throughout the territory of the Russian Federation starting from March 30, 2009 (moreover, the only post in the Far East Federal District will be located in Petropavlovsk-Kamchatsky, where no railroad from the mainland is available), which makes it more than likely a fact of further reduction in the ferrous scrap export from Russia.

In the first quarter of 2009 Russia has reduced the supply of ferrous scrap to the world market. Export volumes amounted to just over 1 mln. tons.

Since April, due to the Order of the FCS on the appointment of only 10 customs posts to work on the ferrous scrap issues the volume of ferrous scrap export is likely to decrease or stabilize at the level achieved.

In the past few years, the role of Russia as one of the leading suppliers of ferrous scrap to the world market is diminishing. If in 2004 Russia exported more than 14 mln. tons of ferrous scrap and in 2005 -13.8 mln. tons, and already in 2008 - less than 7.5 mln. tons

The demand for ferrous scrap in the Russian market might possibly go up. But the development of ferrous metal industry in the economy is possible only with stabilization of the economy and increasing demand from end users.

At the same time, it is likely that the problems with ferrous scrap collection and supply to consumers will arise. Primarily this is due to the shut-downs of many ferrous scrap collection sites during the period of crisis growth. It will take time to restore the usual volumes of ferrous scrap collection.

Ferrous scrap Supply to Russian Enterprises by Rail, thousand tons

Enterprise	2007	2008	Change, %
TOTAL	22 117.4	21 280.3	-3.8
MMK OJSC	4 180.9	3 901.3	-6.7
Severstal OJSC	3 450.1	3 301.1	-4.3
Nizhneserginsky MMZ CJSC	1 884.3	2 200.7	16.8
ZSMK OJSC	1 272.4	1 217.0	-4.4
NLMK OJSC	1 086.1	1 197.9	10.3
Amurmetall OJSC	964.5	1 085.1	12.5
Mechel OJSC	1 155.7	979.7	-15.2
OEMK OJSC	918.2	831.3	-9.5
NKMK OJSC	867.5	742.1	-14.5
Uralskaya stal OJSC	778.9	695.1	-10.8
Volzhsky TZ OJSC	765.5	563.9	-26.3
Ashinsky MZ OJSC	522.7	541.2	3.6
Serov Metzavod OJSC	315.2	380.4	20.7
Zlatoustovsky MZ OJSC	366.8	337.5	-8.0
Other	3 588.7	3 305.9	-7.9

Source: State statistics

It is clear that the falling exchange rate and the increase in steel smelting output give rise to increased purchase prices for ferrous scrap, which already in the first decade of February amounted to over 6 thousand rubles/t on a number of enterprises. But the expectations of the market to a large extent failed to materialize. The level of steel production in the economy is much smaller than 2008 indicators, which causes the decline in demand for ferrous scrap. Therefore, by the end of May 2009 the average price of ferrous scrap was about 5-6 thousand rubles/t.

Japan

Japan in 2008 reduced the export of ferrous scrap versus the previous year by 14.2%, up to 5.535 mln. tons. The decline of export volumes in physical terms was 914 thousand tons. This is the second year in a row, when the export of ferrous scrap from Japan is declining.

Ferrous scrap Export from Japan, thousand tons

Importer	2006	2007	2008	Change, %	1Q 2008	1Q 2009	Change, %
TOTAL	7657.8	6448.6	5534.6	-14.2	1 548.0	2 373.7	53.3
Korea	3379.6	3400.3	2361.9	-30.5	738.7	628.4	-14.9
China	2758.9	2325.9	2756.5	18.5	640.2	1 654.2	158.4
Chinese Taipei	1185.3	496.5	216.7	-56.3	95.7	50.3	-47.5
Viet Nam	136.1	155.8	139.8	-10.2	4.5	5.4	20.8
Hong Kong, China	25.5	27.3	18.4	-32.6	1.0	0.6	-36.7

Other	172.4	42.8	41.2	-3.7	67.9	34.8	-48.7
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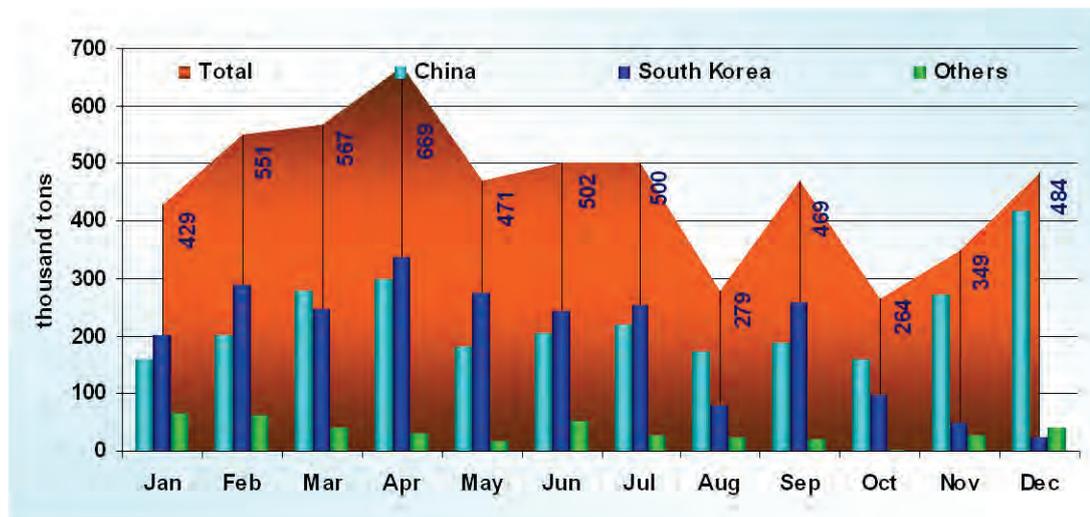
Source: Japanese Ministry of Finance, Japan Metal Bulletin

In the structure of export supplies of ferrous scrap from Japan to other economies China takes an eminent place. According to the Ministry of Finance, in 2008 2.757 mln. tons of ferrous scrap was imported to that economy, which amounted to 49.8% of total shipments to the world market. Versus the previous year, the supply of ferrous scrap to China grew by 18.5%. At the same time Korea has reduced the purchase of scrap from Japan in 2008 by 30.5% versus the previous year, up to 2.362 mln. tons (42.7% of the total shipments of ferrous scrap from the economy). 217 thousand tons of ferrous scrap was supplied to Chinese Taipei (3.9% of total export volumes from Japan), which is 56.3% lower than 2007 volumes.

Thus, the two economies (China and Korea) share 92.5% of total export volumes of ferrous scrap from Japan.

In December 2008 Japan exported 484 thousand tons of ferrous scrap, which is 13% more than for the same period last year. However, 418 thousand tons was supplied to China, 25 thousand tons to Korea, 20 thousand tons to Viet Nam, and 18 thousand tons to Chinese Taipei.

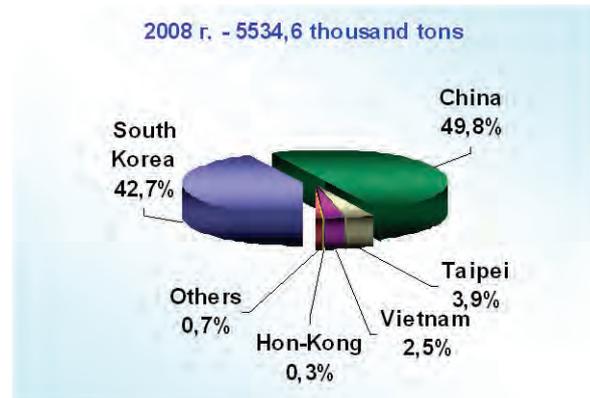
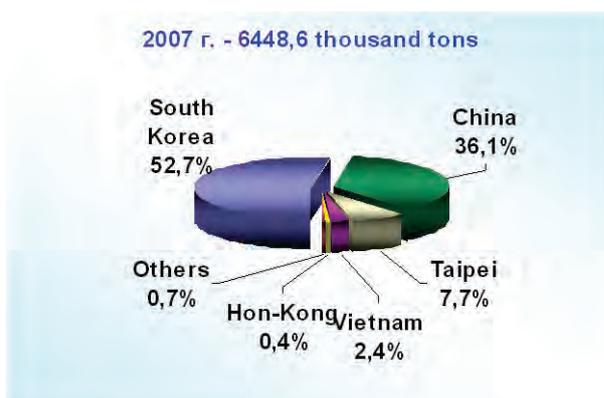
Ferrous Scrap Export from Japan by month, thousand tons



It should be noted that Japan already in 2003 exported 5.72 mln. tons of ferrous scrap, 6.817 mln. tons in 2004; 7.576 mln. tons in 2005; 7.654 mln. tons in 2006, and 6.449 mln. tons in 2007.

In the structure of ferrous scrap export from Japan bulky ferrous scrap prevailed (1.07 mln. tons in 2008 – 19.3% of total shipments), ordinary ferrous scrap (3.68 mln. tons - 66.5%), chips (454.3 thousand tons – 8.2%), stainless steel scrap (270.7 thousand tons – 4.9%).

Changes in Share of Importers of Japan Ferrous Scrap in 2007-2008



Ferrous Scrap Export from Japan by type, thousand tons

Ferrous scrap Type	2007	2008	Change, %	1Q 2008	1Q 2009	Change, %
Pig iron	10.3	5.5	-46.3	2.7	-	-
Stainless steel scrap	219.8	270.7	23.2	70.9	74.2	4.6
Scrap alloy steel	31.7	39.2	23.6	8.8	13.0	48.1
Chips	614.0	454.3	-26.0	153.0	238.3	55.7
Bulky scrap	1430.3	1071.4	-25.1	362.9	681.9	87.9
Other types	4122.4	3682.1	-10.7	943.9	1360.7	44.2
Steel and pig iron ingots for smelting	16.9	11.3	-33.1	5.6	5.6	-1.3

Source: Japanese Ministry of Finance, Japan Metal Bulletin

Ferrous scrap export from Japan is carried out by more than 50 ports. In addition, the supply of ferrous scrap for export through major ports have shown a downward trend. If back in 2006 about 62% of the total volume of ferrous scrap supplied to world markets was supplied via 10 major ports, but in 2008 it was about 53%. Nevertheless, the main ports for export shipment of ferrous scrap in the economy are the port of Chiba (567 thousand tons in 2008), the port of Tokyo (487 thousand tons), the port of Nagoya (368.8 thousand tons), the port of Kawasaki (341.1 thousand tons) and the port of Kinuura (339 thousand tons).

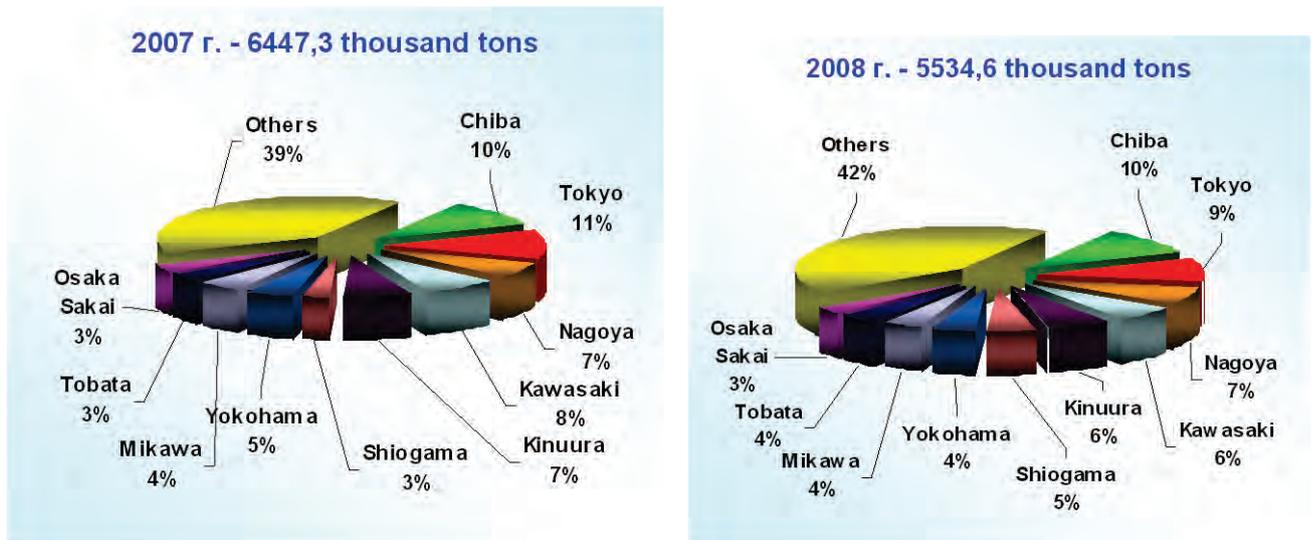
In the structure of ferrous scrap shipments for export from Japan in 2008 the leading position occupied the port of Chiba. Shipments of ferrous scrap from the port of Chiba amounted to 567 thousand tons, or 10.2% of the total export volume of ferrous scrap from the economy. However, in 2008 the shipments of ferrous scrap from this port declined versus the previous year by 15.8%. Through the port of Tokyo 487 thousand tons (8.8% of total export volumes) of ferrous scrap was shipped, which is 30.4% lower than the previous year volumes. More than 300 thousand tons of ferrous scrap in the past year was shipped through the ports of Nagoya (369 thousand tons, a decrease by 12.3%), Kawasaki (341 thousand tons, a decrease by 30.4%), Kinuura (339 thousand tons, a decrease by 25.6%). Shipments of ferrous scrap through the port of Shioyama increased by 49.9%, up to 260 thousand tons.

Export of ferrous scrap from Japan by Major Ports, thousand tons

Port	2006	2007	2008	Change, %
TOTAL	7 635.7	6 447.3	5 534.6	-14.2
Chiba	836.1	673.0	566.9	-15.8
Tokyo	839.8	699.9	487.4	-30.4
Nagoya	532.4	420.7	368.8	-12.3
Kawasaki	541.2	489.9	341.1	-30.4
Kinuura	622.2	455.4	338.8	-25.6
Shioyama	135.9	173.7	260.3	49.9
Yokohama	328.5	317.6	238.1	-25.0
Mikawa	317.4	274.9	214.8	-21.9
Tobata	318.9	222.4	205.4	-7.6
Osaka Sakai	262.8	205.8	168.8	-18.0
Other	2 900.5	2 514.1	2 344.2	-6.8

Source: Japanese Ministry of Finance, Japan Metal Bulletin

Changes in Export Share of Japan Ports in 2007-2008



With an overall reduction of ferrous scrap supply on the world market, Japan has increased its volumes of stainless steel scrap shipment for export. In 2008 Japan exported 270.727 thousand tons of stainless steel scrap, which is 23.2% more than in the previous year (219.76 thousand tons), but all of it was below the record of 2006 (296.612 thousand tons). It should be noted that the supply of stainless steel scrap for export from Japan fell sharply in November - up to 4.958 thousand tons. This is the lowest level of monthly supply since February 2002 (3.626 thousand tons). The maximum monthly level of shipments of stainless steel scrap to the world market was in April 2008 – 40.527 thousand tons.

The overall growth in export shipments of stainless steel scrap in the past year took place at the time of declining prices for ferrous scrap. Thus, the average export price of stainless steel scrap from Japan in 2008 amounted to 211.484 thousand Yen per tonne on FOB terms. This is significantly below the average prices of the previous year (by 27.4%) – 291.226 thousand Yen / t on the same conditions. The reduction of the average export price of stainless steel scrap was due to a decline in nickel prices on the LBM, but on the other hand, due to the increase in supply of scrap ferritic steels to the world market. The decline in export shipments in the second half of the year was due to the growth of the global financial crisis and the decline in the stainless steels production in the world. Note that by the end of 2008 export prices for stainless steel scrap have fallen. In December, the average export price of stainless steel scrap with a shipment from Japan amounted to 79.952 thousand Yen per tonne on FOB terms, which is 18% lower than in November.

In 2008 Japan has greatly increased the supply of stainless steel scrap to Korea - by 65.3%, up to 129.77 thousand tons. At the same time, shipments of stainless steel scrap to China declined by 7.4% and amounted to 121.735 thousand tons. In the structure of exports of stainless steel scrap to various economies in 2008 Korea and China accounted for 92.9%.

Export of Stainless steel scrap from Japan, thousand tons

Importer	2007	2008	Change, %
TOTAL	219.5	270.7	23.3
Korea	78.5	129.8	65.3
China	131.5	9.6	-92.7
Chinese Taipei	1.3	0.5	-65.0
Hong Kong, China	3.5	0.2	-93.0
India	3.2	-	-
Other	1.6	130.6	-

Source: Japanese Ministry of Finance, Japan Metal Bulletin

The supply of ferrous scrap to other economies is incomparable with shipments to Korea and China. Thus, the supply of ferrous scrap to Chinese Taipei in the past year amounted to 8.787 thousand tons (a growth by 6.6 times), to India – 4.27 thousand tons (by 35.3%), to Hong Kong, China – 3.013 thousand tons (a decline by 13.3%). During the last year Japan delivered stainless steel scrap to more than 20 economies around the world. In December 2008 an increase in supply volumes of ferrous scrap versus November was due to increased demand for it from China.

China

According to China customs statistics, import volumes of ferrous scrap to the economy in 2008 amounted to 3.59 mln. tons, which is 5.8% more than in the previous 2007. It should be noted that it was the first increase in import volumes of ferrous scrap in the economy since 2004.

In the structure of the ferrous scrap import from the individual economies the major ones are Japan, Spain, USA, and Kazakhstan. Large amounts of ferrous scrap are brought to China through Hong Kong, China.

The largest supplier of ferrous scrap to the China market is Japan, which increased its shipments by 39.6%, up to 708 thousand tons in 2008. The proportion of Japan in the supply of ferrous scrap to China was 19.7% in 2008.

It must be stressed that this is the data given by China customs statistics, which differ significantly from the information provided by other economies. So, according to China customs statistics, the supply of ferrous scrap from the USA in 2008 amounted only to 567 thousand tons. At the same time, according to the USA, the supply of ferrous scrap to China in 2008 amounted to 2.87 mln. tons.

Spain shipped to China 567 thousand tons of ferrous scrap, which is 39.2% higher than the previous year. The proportion of Spain in the total volumes of ferrous scrap purchases by China was 15.8%. 478 thousand tons (a decline by 10.6%) were imported to China through Hong Kong, China. Kazakhstan also reduced its supply volumes of ferrous scrap to the China market - by 10.6%, up to 305 thousand tons.

It is important to note the growth of import volumes of ferrous scrap to China at the end of 2008. In October 2008 the import of ferrous scrap into the economy amounted to 235 thousand tons, then in November it rose up to 422.8 thousand tons, and in December reached 644.7 thousand tons.

In January to April 2009 the trend of increasing import volumes of ferrous scrap to China continued. All the major suppliers of scrap to China boosted shipments, with the exception of the Netherlands.

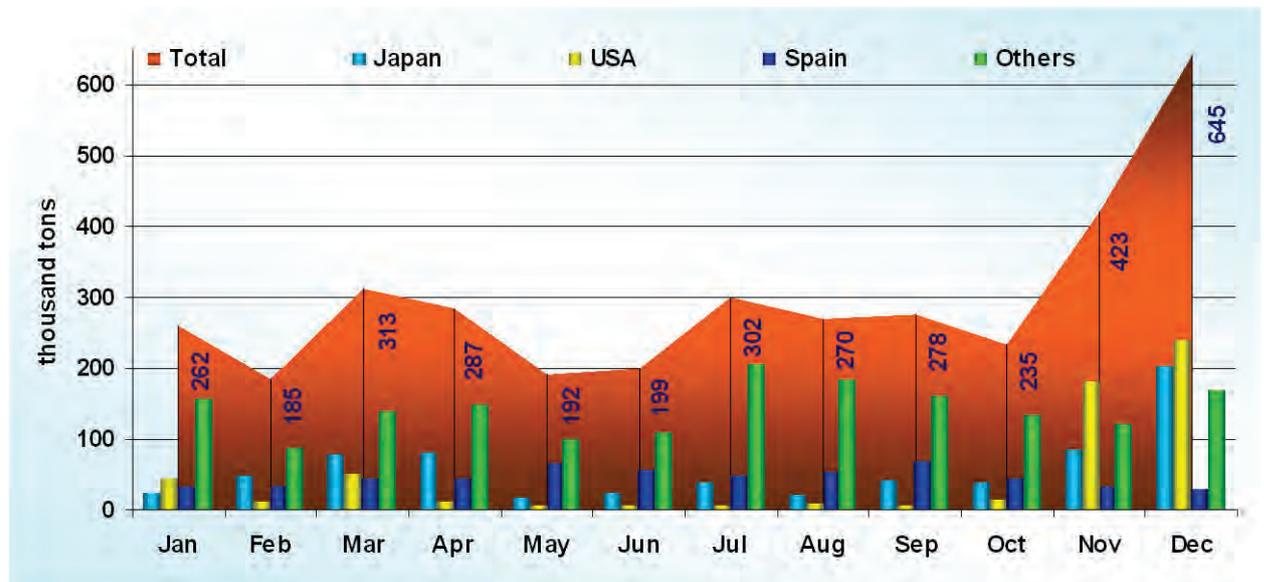
Import of Ferrous scrap to China by Individual Economies, thousand tons

Exporting Economies	2006	2007	2008	Change, %	January-April, 2008	January-April, 2009	Change, %
TOTAL	5383.1	3395.0	3590.4	5.8	1 046.6	4 657.0	344.9
Japan	1107.0	507.1	708.1	39.6	232.7	1 839.8	690.6
USA	1149.3	212.4	591.5	178.5	120.5	1 388.9	1 052.5
Spain	287.4	407.1	566.7	39.2	157.3	168.2	6.9
Hong Kong, China	422.8	534.3	477.9	-10.6	127.1	206.0	62.1
Kazakhstan	619.0	379.0	305.4	-19.4	123.2	1.7	-98.6

Australia	478.5	279.7	231.4	-17.3	98.6	379.6	284.9
Korea	79.4	83.3	112.4	35.0	35.0	108.8	210.6
Malaysia	7.7	154.5	98.5	-36.2	10.5	68.6	554.8
Netherlands	66.7	185.6	63.7	-65.7	56.2	5.5	-90.2
Philippines	343.8	295.0	55.2	-81.3	9.5	21.3	123.2
Russia	241.1	69.0	37.6	-45.5	9.9	58.9	497.8
Other	580.4	288.1	342.0	18.7	66.1	409.6	519.4

AME [5], Tax Report [3], MySteel [24], WSA [2], Customs Clearance

Import of Ferrous scrap to China by month in 2008, thousand tons



According to China customs statistics, the import volumes of stainless steel scrap to the economy in 2008 amounted to 308.986 thousand tons, which is 19.2% lower than the previous year (381.672 thousand tons).

The average price of imported stainless steel scrap supplied to China in 2008 declined versus the previous year by 21.4% and amounted to \$ 2.211/ton (\$ 2811/ton in the previous year).

The main suppliers of stainless steel scrap to China: Japan - 106 thousand tons (127 thousand tons in 2007), Korea - 57 thousand tons (23 thousand tons), Australia - 10 thousand tons (9 thousand tons), Hong Kong, China - 21 thousand tons (863 tons), Netherlands - 12 thousand tons (27 thousand tons), USA - 59 thousand tons (138 thousand tons).

In the structure of import volumes of ferrous scrap to China the proportion of scrap chrome-bearing steel is estimated at 37 thousand tons (about 12% of the total volume of scrap steel imported into the economy). The average level of import prices on this type of ferrous scrap in the past year amounted to \$ 880 - 900 per ton, CIF ports of China terms of delivery. Other supplies – scrap nickel-containing steel - 88% of total import volumes. The average price of imported ferrous scrap of this kind amounted to \$ 2500 - 3000 per ton, CIF terms.

According to the CSSC (China Stainless Steel Council), in 2008 6.9 mln. tons of stainless steel was produced in China, which is 310 thousand tons lower than last year. Therefore, the

reduction of import volumes of stainless steel scrap took place. In addition, the import volumes of stainless steel scrap to China were affected by the over-supply of nickel in the economy.

Import of Stainless steel scrap to China, thousand tons

Exporters	2005	2006	2007	2008	Change, %
TOTAL	201.1	218.2	381.7	309.0	-19.0
Australia	22.8	5.8	9.4	10.6	13.4
Canada	5.3	7.2	14.1	5.1	-63.7
Hong Kong, China	0.4	1.5	1.8	20.7	1 065.6
Italy	0.2	-	0.5	2.3	379.5
Japan	27.4	90.8	127.9	106.3	-16.9
Korea	17.7	12.8	23.7	57.4	142.4
Malaysia	-	-	0.2	3.1	1 151.0
Netherlands	0.4	1.3	27.3	12.6	-53.7
Poland	-	-	1.0	1.8	79.5
Russia	2.0	1.5	1.0	1.1	8.6
Spain	1.7	1.6	-	3.9	-
Chinese Taipei	13.0	6.8	10.7	7.9	-25.6
Thailand	7.0	8.1	9.5	7.7	-19.4
Turkey	0.2	-	3.7	2.2	-40.3
Great Britain	0.1	3.5	1.8	2.5	40.8
USA	88.1	69.8	138.2	59.3	-57.1
Other	14.9	7.6	11.0	4.3	-60.6

Source: AME [5], Tax Report [3], MySteel [24], WSA [2], Customs Clearance

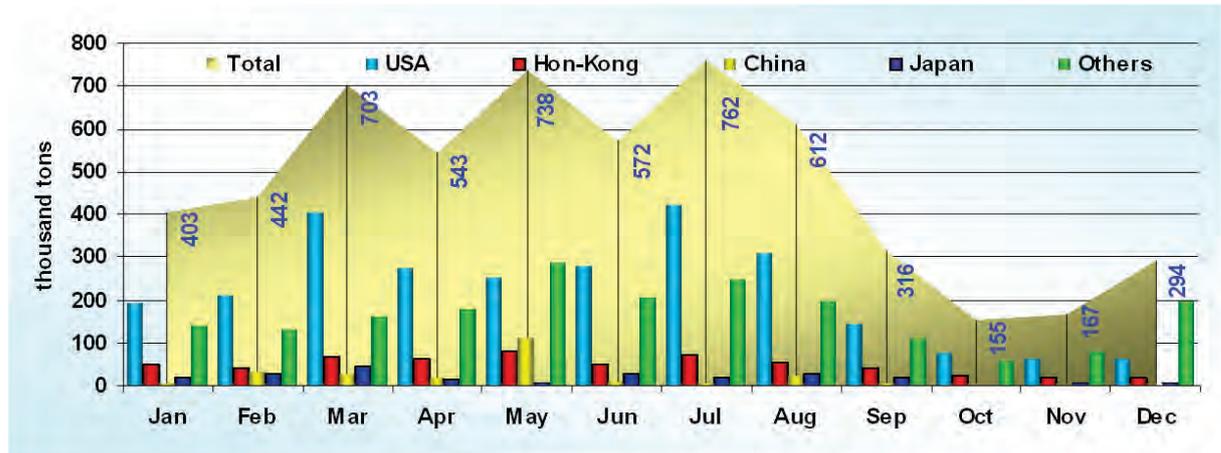
Chinese Taipei

A major importer of ferrous scrap is Chinese Taipei. Import of ferrous scrap to Chinese Taipei from 2000 to 2008 grew up by 2.8 times which is due to the growth of steel production.

But, as in some other economies, in the last months of 2008 Chinese Taipei reduced the import volumes of ferrous scrap versus the peak volumes in the middle of last year. If in May the import of ferrous scrap to Chinese Taipei amounted to 738 thousand tons, and in July – 761.5 thousand tons, then in October the purchase volumes of ferrous scrap abroad fell to 154.9 thousand tons, and in November – up to 166.8 thousand tons. In November, Chinese Taipei has reduced the import volume of ferrous scrap by 66.0% versus the same period last year. Despite the decline in import volumes in October-December 2008, Chinese Taipei increased ferrous scrap purchases from abroad by 2.2% up to 5.54 mln. tons in 2008.

The major supplier of ferrous scrap to the Chinese Taipei market is the USA. In 2008 2.63 mln. tons was delivered from the USA, which represents 48.6% of the total import volume of ferrous scrap. Large volumes of ferrous scrap come to Chinese Taipei from Hong Kong, China (552 thousand tons). Large supplies of ferrous scrap also come from China to Chinese Taipei (228.2 thousand tons, three times as much), Netherlands (273.9 thousand tons, an increase by 159.6%), Japan (199.7 thousand tons, reduction by 58.6%).

Import of Ferrous scrap to Chinese Taipei in 2008 by month, thousand tons



In addition, the supply of ferrous scrap to Chinese Taipei is carried out by the Philippines, Panama, South Africa, Canada and others. According to Chinese Taipei customs statistics, in 2008 the supply of ferrous scrap from Russia amounted to 103.7 thousand tons (a decline by 75.8%).

In the first quarter of 2009 the import of ferrous scrap to Chinese Taipei reduced by 65.8%. Almost all the major suppliers have reduced the volume of shipments of ferrous scrap to Chinese Taipei in 1Q 2009 versus the same period of 2008.

Import of Ferrous scrap to Chinese Taipei, thousand tons

Economy-exporter	2000	2005	2006	2007	2008	Change, %	1Q 2008	1Q 2009	Change, %
TOTAL	1957.9	3421.9	4458.9	5418.4	5538.9	2.2	1547.9	528.7	-65.8
USA	411.3	208.9	829.2	1859.7	2630.4	41.4	809.3	260.7	-67.8
Hong Kong, China	182.6	240.2	492.1	647.9	552.4	-14.7	156.1	26.4	-83.1
China	24.5	11.2	45.9	60.4	228.2	277.6	59.6	1.8	-96.9
Netherlands	72.8	118.0	113.9	105.5	273.9	159.6	45.1	41.9	-7.2
Philippines	39.3	508.0	391.0	222.2	192.2	-13.5	54.6	15.5	-71.6
Japan	211.3	873.7	1185.3	483.0	199.7	-58.6	90.1	45.3	-49.7
Russia	293.4	863.8	498.8	428.4	103.7	-75.8	36.9	15.3	-58.5
Great Britain	46.1	44.1	49.6	54.7	83.8	53.0	10.1	18.6	84.0
Canada	2.6	2.4	7.9	40.6	85.0	109.4	29.1	3.7	-87.1
Australia	138.6	11.7	70.3	77.3	72.2	-6.7	23.9	20.5	-14.2
South Africa	6.7	30.2	52.2	78.3	108.3	38.4	25.2	26.3	4.1
Other	528.8	509.7	722.6	1360.3	1009.1	-25.8	207.9	52.6	-74.7

Source: AME [5], Tax Report [3], MySteel [24], WSA [2], Customs Clearance

Korea

Korea in 2008 imported 7.314 mln. tons of ferrous scrap, which is 6.3 % or 433 thousand tons more than in the previous 2007. More of ferrous scrap Korea imported only in 2004 (7.547 mln. tons). The main vendors of ferrous scrap to Korea are USA, Japan and Russia.

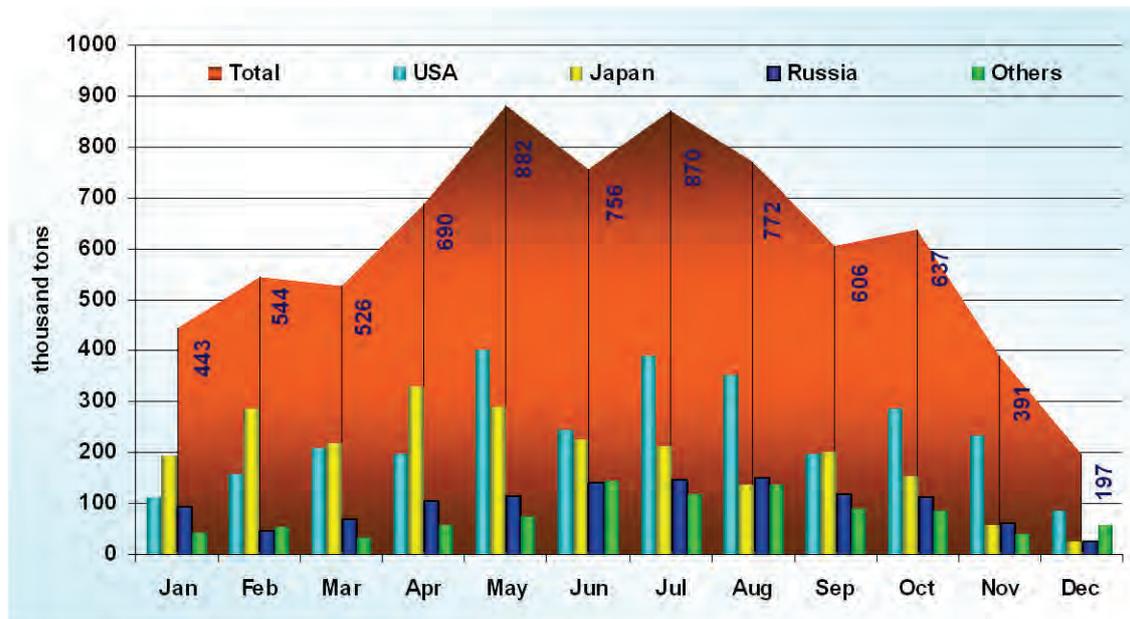
Ferrous scrap import to Korea, thousand of tons

Economy	2007	2008	Change, %	January-April, 2008	January-April, 2009	Change, %
Totally	6,880.9	7,313.7	6.3	2,202.6	1,967.9	-10.7
Japan	3,387.5	2,330.0	-31.2	1,028.84	1,046.5	1.7
USA	2,046.3	2,865.1	40.0	675.7	615.4	-8.9
Russia	907.1	1,183.7	30.5	311.8	166.2	-46.7
Netherlands	112.9	53.9	-52.3	18.752	2.6	-85.9
New Zealand	64.9	52.8	-18.6	11.021	21.9	98.8
Others	362.3	828.3	128.7	156.5	115.2	-26.4

Source: AME [5], Tax Report [3], WSA [2], Customs Clearance

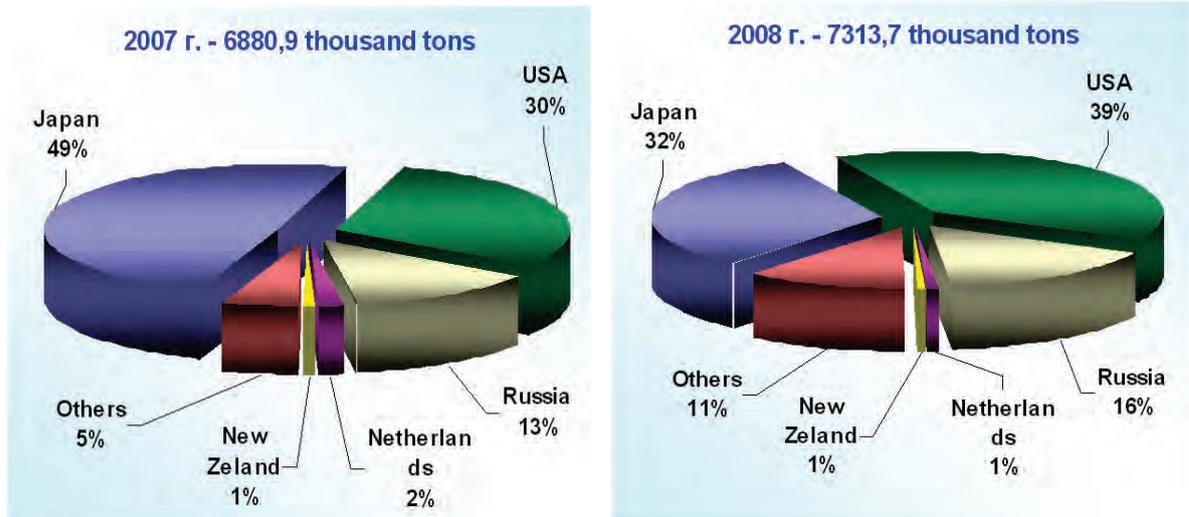
USA in 2008 increased the scrap deliveries to Korea by 40 % as compared with 2007 up to 2.865 mln. tons. The USA total share in the scrap deliveries to Korean market up to the previous year results was 39.2%.

Japan in 2008 decreased the scrap deliveries to Korea by 31.2 % down to 2.33 mln. tons. Japan share in the scrap deliveries to Korea was 31.9%.

Ferrous scrap import to Korea by months, thousand of tons

Russia, up to the Korean customs statistics, in the previous year significantly increased the scrap export to that economy – by 30.5 % up to 1.184 mln. tons. Share of Russia in the scrap deliveries to Korea reached 16.2%.

Change of shares of leading economies for the scrap export to Korea in 2007-2008



Thus, only these three economies cover 87.2% of the scrap import to Korea in 2008. Besides, the scrap is delivered to Korean market by European economies, including the UK and the Netherlands, by Latin American economies (Mexico, Costa-Rica, Dominican Republic, Panama, Columbia, Guatemala, Ecuador), by Asian economies (UAE, the Philippines, Chinese Taipei and other).

It is necessary to mark that since the beginning of 2008 Korea was gradually increasing the scrap import with the pike in May-July. Later on the volume of the scrap deliveries to Korea began to descend and in the fourth quarter reached its minimal month value. In November, 2008 the scrap import to Korea descended more than twice as compared with the pike values of May and July down to 391 thousand tons. In December the scrap import descend continued. In December Korea purchased only 197 thousand tons of scrap.

In January-April, 2009 the volume of the ferrous scrap import to Korea descended by 10.7 % as compared with the same period of 2008. The descend of import happened mainly because of the decrease of steel manufacture in the economy and the decrease of need for scrap.

Indonesia

In 2008 Indonesia significantly increased the ferrous scrap import as compared with 2007 – by 50.7 %. Totally in 2008 the volume of ferrous scrap deliveries to Indonesia was 1.899 mln. tons. The leading scrap vendor to Indonesia in 2008 was the USA – 413 thousand tons. As compared with the previous year the volume of American scrap deliveries to Indonesian market was increased more than twice. As the result the USA share in the total volume of the scrap import by Indonesia reached 21.73 %, which exceeds the previous years values (15.13 % in 2007 and 17.41 % in 2006).

The volume of ferrous scrap deliveries to Indonesia from Australia was slightly increased in 2008 – by 11.3 % up to 327,100 ton. The share of Australia in the total volume of ferrous scrap deliveries to Indonesia in 2008 descended as compared with the previous years down to 17.23 % (23.31 % in 2007).

In 2008 such economies as New Zealand (by 93.1 % up to 170,300 ton), UAE (by 175.4 % up to 109,800 ton), SAR and others increased the volume of scrap deliveries to Indonesia. At the same time the volume of scrap deliveries from Singapore (by 9.3 % down to 144,200 ton) and the Philippines (by 34.6 % down to almost 85 thousand tons) was decreased.

It is necessary to mark the significant growth of scrap deliveries volume in the last three years to Indonesia not only from the USA, but also from the Middle East economies, in particular from UAE and Saudi Arabia. Even in 2006 the scrap deliveries volume from Saudi Arabia to Indonesia was a little more than 6 thousand tons, while already in 2008 – almost 108

thousand tons. The scrap deliveries volume from UAE was increased from 4,200 ton in 2006 up to almost 110 thousand tons in 2008.

Scrap import to Indonesia in 2006-2008, thousand of tons

Economy	2006		2007		2008		Change, %
	thous/ton	share, %	thous/ton	share, %	thous/ton	share, %	
Totally	1,062.538	100	1,259.932	100	1,898.539	100	50.7
Which includes:							
USA	185.012	17.41	190.576	15.13	412.569	21.73	116.3
Australia	221.744	20.87	293.751	23.31	327.050	17.23	11.3
New Zealand	54.077	5.09	88.175	7.00	170.253	8.97	93.1
Singapore	121.221	11.41	159.122	12.63	144.245	7.60	-9.3
UAE	4.158	0.39	39.890	3.17	109.847	5.79	175.4
Saudi Arabia	6.280	0.59	77.205	6.13	107.880	5.68	39.7
SAR	64.752	6.09	51.377	4.08	96.565	5.09	88.0
UK	41.968	3.95	74.926	5.95	88.405	4.66	18.0
Philippines	187.152	17.61	129.416	10.27	84.596	4.46	-34.6

Source: AME [5], Tax Report [3], WSA [2], Customs Clearance

India

One of the large scale importers of ferrous scrap in the world is India. In 2008 the scrap import to India was increased as compared with the previous year by 51.9 % and reached 4.58 mln. tons. The main ferrous scrap deliveries to the economy are implemented mainly by four economies. In the previous year the largest importer of the scrap were UAE with their share of 20.3 % in the total volume of import. Totally up to the last year results UAE delivered 931 thousand tons of scrap to the Indian market, which is 77.9 % more than the previous year value. In 2007 UAE delivered to India more than 523 thousand tons of scrap (17.4 % of the total volume of Indian import), and in 2006 – 601,300 ton (17.9 %).

One of the leading vendors of the scrap to India are the USA. In 2008 the volume of American scrap deliveries to the Indian market exceeded 645 thousand tons, which is 3.9 % more than in 2007 (621 thousand tons). Last year the USA share in the total volume of the Indian scrap import descended down to 14.1 % as compared with 20.6 % in 2007. In 2008 the second place in the volume of the scrap deliveries to India was taken by the UK – almost 702 thousand tons (15.3 % of the total volume of the scrap deliveries to India). Mark here that after the sudden decrease of its export of the scrap in 2007 as compared with 2006, last year the UK increased the volume of its deliveries more than three times.

Ferrous scrap import to India in 2006-2008, thousand of tons

Economy	2006		2007		2008		Change of deliveries in 2008/2007, %
	thous/ton	Share in the import, %	thous/ton	Share in the import, %	thous/ton	Share in the import, %	
Totally	3,359.3	100	3,014.0	100	4,579.5	100	51.9
Which includes:							
UAE	601.3	17.9	523.1	17.4	980.9	20.3	77.9
UK	467.2	13.9	199.5	6.6	701.7	15.3	251.7

USA	488.1	14.5	621.1	20.6	645.3	14.1	3.9
SAR	176.8	5.3	107.1	3.6	303.5	6.6	183.5
Kuwait	198.1	5.9	185.4	6.2	179.7	3.9	-3.0
Germany	37.0	1.1	59.1	2.0	162.2	3.5	174.3
Singapore	78.0	2.3	82.0	2.7	85.7	1.9	4.5
Belgium	84.6	2.5	27.6	0.9	78.7	1.7	185.4
Netherlands	55.8	1.7	69.6	2.3	77.3	1.7	11.1

Source: AME [5], Tax Report [3], WSA [2], Customs Clearance

Significant volumes of the scrap are delivered to India from the SAR (303,500 ton in 2008), Kuwait (almost 180 thousand tons) and Germany (162 thousand tons). The scrap deliveries from other economies are at the level of several dozens of thousand of tons a year. The growth of the scrap import to the economy is dealt with the enlargement of steel manufacture in India. Mark here that the steel manufacture in the economy in 2008 reached 55.0 mln. tons, which exceeded the values of 2007 by 3.7 %. It is necessary to mark that even in 2000 the steel manufacture in the economy, up to the WSA data, was only 26.9 mln. tons.

Thailand

Ferrous scrap import to Thailand, thousand of tons

Exporting economies	2005	2006	2007	2008	Change, %
Totally	1,683.0	1,372.8	1,811.4	2,577.4	42.3
USA	492.5	417.7	788.7	1,205.8	52.9
Russia	246.7	134.3	269.2	117.0	-56.5
Australia	137.9	262.4	169.3	104.1	-38.5
Philippines	305.6	114.7	91.6	120.7	31.8
UK	12.7	9.1	81.2	90.5	11.5
Cambodia	30.3	44.1	47.3	36.8	-22.1
Italy	14.2	-	41.3	1.3	-96.8
Haiti	6.7	7.4	36.3	44.9	23.5
SAR	8.0	14.6	33.8	83.2	145.9
Jamaica	7.8	17.9	26.2	29.7	13.1
Puerto Rico	2.7	4.6	23.9	52.6	120.4
Saudi Arabia	-	0.3	23.0	44.5	93.5
others	417.8	345.9	179.6	646.2	259.7

Source: Chinese Taipei Directorate General of Customs

Ferrous scrap import to Thailand in 2009 reached 2,577 thousand tons, which is 42.3% more than in 2007, and as compared with 2005 the growth is 53%. The USA share in the total volume of deliveries to Thailand in 2008 reached 46.8%, which is more than in 2007, when the USA share was 43.5%. The Philippines hold the second position in the volumes of their deliveries to Thailand; their share was 4.6% in 2008. The next are Russia, Australia and the UK.

11. STEEL MARKET*

11.1. Steel Production

Global economic crisis intensified in the end of 2008 led to extremely serious aggravations in the world steel manufacture. As the result of demand for metal products descend in most of the regions and economies of the world, the steel manufacture in 2008 decreased as compared with 2007, excluding some European economies, economies of the Middle East and Asia inclusive of China. Exclusive of China the steel manufacture in economies of Asia was also decreased.

In 2008 the world steel manufacture, up to the World Steel Association data (taking into account the data on 2007 published in the annual statistic report) and preliminary data on the results of 2008, decreased by 1.2 % as compared with 2007 and valued less than 1,330 mln. tons. Progressive growth of steel manufacture, which was marked in the world in 2000-2007, stopped in the fourth quarter of 2008.

Mark here that within the period of 2000-2007 the world steel manufacture increased from 847.7 mln. tons up to 1,351.3 mln. tons or by 59.4 % (by 503.6 mln. tons). Take into account that the main growth of the world steel manufacture happened due to the increase of its manufacture in China.

Steel manufacture in the world descended violently in the fourth quarter of 2008 as compared with the previous months. As the result, in the fourth quarter of 2008 the world steel manufacture descended by 20 %, and the most significantly the steel manufacture descended in economies of North America, CIS and EU.

Steel manufacture in the regions of the world, mln. tons

Regions	2007	2008*	2008/2007, %
World, totally	1,351.3	1,329.7	-1.6
EU-27	209.7	198.6	-5.3
Other economies of Europe	30.6	30.9	1.0
CIS	124.2	114.0	-8.2
North America	132.6	125.4	-5.4
South America	48.2	47.6	-1.2
Africa	18.8	17.0	-9.6
Economies of the Middle East	16.5	16.6	0.6
Economies of Asia	761.9	771.2	1.2
Oceania	8.8	8.4	-4.5

*Estimation
Up to WSA data

Many regions in 2008 decreased the steel manufacture. However, in 2008 the growth of the steel manufacture was marked in the other economies of Europe (by 1 %), in the Middle East economies (by 0.6 %) and in Asia inclusive of China (by 1.2 %).

Only seven leading steel manufacturers of the world managed to increase the product manufacture in 2008: Belgium – by 1.6 %, Spain – by 0.3 %, Turkey – by 2.5 %, Mexico – by 0.3 %, China – by 1.7 %, India – by 3.7 %, Korea – by 4 %.

* Data Sources: WSA [2], CRU [10], AME [5], Tax Report [3], MySteel [24], Customs Clearance

Up to The Arab Iron & Steel Union (AISU) data, in 2008 the steel manufacture in Arabian economies was decreased as compared with 2007 by 4.14 % down to 16.4 mln. tons (17.1 mln. tons in 2007). The greatest decrease of the steel manufacture happened in the fourth quarter of 2008, when the manufacture descended by 23.4 % down to 3.12 mln. tons from 4.1 mln. tons for the same period of 2007.

Steel manufacturing companies of the region decreased the volumes of manufacturing due to the demand descend and low prices caused by the global economic crisis. In the fourth quarter of 2008 the decrease of manufacture in Egypt was 15.8 %, in Saudi Arabia – 27.76 %, in Qatar – 21.3 %, in Libya – 3.57 %, in Algeria – 62.65 %, in Morocco – 58.12 %. Up to the results of 2008 the most significant decrease of the steel manufacture was observed in Algeria – by 49.45 %.

However, not all the Arabian economies up to the results of the year decreased the volumes of manufacturing. Up to the AISU data, in Qatar the steel manufacture up to the results of 2008 was increased as compared with 2007 by 27 % and valued 1.147 mln. tons. Thus, Qatar took the third place in the region in the volumes of the steel manufacture. Arabian economies endeavour to remain netto-exporters of steel, for which they invest in enlargement of manufacturing capacities.

Steel manufacture in Arabian economies in 2007-2008, mln. tons

Economy	2007	2008	Change, %
Egypt	6.224	6.198	-0.4
Saudi Arabia	6.070	5.890	-2.97
Qatar	1.100	1.147	27
Libya	1.250	1.137	-9.04
Algeria	1.278	0.646	-49.45
Morocco	0.512	0.478	-6.64
Other economies	0.622	0.640	2.9
TOTALLY	17.100	16.400	-4.14

Source: WSA

In the first months of 2009 the steel manufacture in general continued the decrease. The demand descend from the main metal consuming industries, including machinery-producing, construction sector, transport, on the background of financial difficulties led to the situation that in the beginning of 2009 minimal for the recent years volumes of steel manufacture per month were marked. The main decrease of the manufacture was done in the economies of Europe, Japan and Russia. Only China among the largest steel manufacturers managed to maintain the high level of manufacture.

In the first months of 2009 the world steel manufacture continued the decrease. In January, 2009, up to the WSA data, the steel manufacture valued 86.4 mln. tons, and in February descended down to the level of less than 85 mln. tons. Then a certain growth of manufacture was marked – up to 92 mln. tons and a new descend in April.

For example, in April, 2009 89.5 mln. tons of steel were manufactured in the world, which is 23.6 % less than in April, 2008 and 2.9 % less than in March, 2009.

Up to the WSA data, the most significant decrease of steel manufacture volumes in April was marked in the North American economies, where 5.8 mln. tons of steel were manufactured, which is 49.0 % less than in the same month of 2008.

The steel manufacture in the economies of South America, CIS, Europe, Africa, Middle East and Asia was also decreased in April.

In April the steel manufacture in the economies of EU was decreased by 48.6 %. In other European economies the descend valued 20.4 %, which was dealt with the violent decrease of steel manufacture in Turkey.

The steel manufacture in Italy in April, 2009 valued 1.6 mln. tons, which is more than 45% less than the values of the same period of the previous year. With that, as compared with March, the steel manufacture decrease turned out to be insignificant – 3 %. Further insignificant steel manufacture decrease in the economy and in the European region in general is possible, as the process of stock reserves decrease goes on, and the demand level is low. In April the capacity utilization level in the economy was approximately 40 %.

In China 43.4 mln. tons of steel were manufactured in April. As compared with the level of April, 2008, the steel manufacture in the economy was decreased by 3.9 %. In April as compared with March, 2009 the steel manufacture was decreased by 1.7 mln. tons or by 3.7 %.

Up to the results of January-April, 2009 the world steel manufacture, up to the WSA data (considers 66 economies), was decreased as compared with the same level of 2008 by 103.7 mln. tons or by 22.7 % and valued 354.1 mln. tons. The most significant decrease of steel manufacture was marked in the economies of Europe, USA, Australia, economies of Latin America and Asia (without China).

The steel manufacture in the economies of Asia in January-April, 2009 was decreased by 9.5 % down to 231.2 mln. tons. The region economies share in the world steel manufacture valued 65.3 %.

Up to the results of the four months of 2009 the steel manufacture in China reached 170.7 mln. tons, which is 0.1 % more than in the same period of the previous year. The economy's role in the world steel manufacture is growing. China's share in the world steel manufacture increased from 37.2 % in 2007 up to 38.4 % in 2008, and up to the results of the four months of 2009 – up to 48.2 %.

An insignificant decrease of steel manufacture was marked in India. The steel manufacture in India up to the results of January-April this year was decreased by 1.6 % as compared with the same period of the previous year down to 18.2 mln. tons.

The steel manufacture descended more significantly in Japan – by 43.1 % down to 23.3 mln. tons. EU economies (27 economies) decreased the steel manufacture during January-April, 2009 by 44.2 % down to 40.3 mln. tons. For example, Spain decreased the steel manufacture by 37.5 % down to 4.2 mln. tons, UK – by 43.7 % down to 2.7 mln. tons, Germany – by 43.0 % down to 9.2 mln. tons, Italy – by 42.0 % down to 6.5 mln. tons, France – by 42.5 % down to 3.8 mln. tons. The descend of the steel manufacture volumes reflects the demand for steel descend from the main metal consuming industries in the region in the conditions of the financial crisis.

During the four months of 2009 the steel manufacture volumes in Turkey were decreased by 18.8 %. The steel manufacture in the economy up to the results of 2007 exceeded 25.7 mln. tons, which is 10.5 % higher than the values of the previous year 2006 (23.3 mln. tons). In 2008 26.4 mln. tons of steel were manufactured in Turkey.

North America economies in January-April, 2009 decreased the steel manufacture by 48.5 % down to 23.5 mln. tons. In particular, Canada decreased the steel manufacture by 42.9 % down to 3.2 mln. tons, USA – by 53.1 % down to 15.9 mln. tons, and Mexico – by 27.9 % down to 4.2 mln. tons.

In the economies of South America the steel manufacture valued 10.2 mln. tons (decrease by 36.5 %). Brazil manufactured 6.7 mln. tons of steel, which is 41.7 % less than the values of the same period of the previous year. Thus, the share of Brazil valued practically 65.8 % in the total volume of the steel manufacture in the region economies up to the results of the four months of 2009. The steel manufacture in Argentina during the four months of 2009 was decreased by 42.3 % down to 1.1 mln. tons (1.9 mln. tons during the four months of 2008).

The world steel manufacture (up to the WSA data), mln. tons

Region	4 months of 2009	4 months of 2008	Change, %
WORLD, totally*	354.063	457.800	-22.7
EU economies (27 economies)	40.263	72.118	-44.2
Other economies of Europe	8.375	10.888	-23.1
CIS	28.836	42.900	-32.8
- Russia	17.342	25.310	-31.5
North America economies	23.479	45.562	-48.5
- Canada	3.202	5.603	-42.9
- USA	15.884	33.842	-53.1
- Mexico	4.203	5.828	-27.9
South America economies	10.231	16.117	-36.5
- Peru	0.175	0.370	-52.7
- Chile	0.336	0.579	-42.0
Economies of Africa	4.684	6.148	-23.8
Middle East economies	5.531	5.544	-0.2
Economies of Asia	231.168	255.562	-9.5
- China	170.669	170.567	0.1
- Chinese Taipei	4.320	7.342	-41.2
- Southern Korea	14.613	18.138	-19.4
- Japan	23.319	40.978	-43.1
Oceania	1.497	2.960	-49.4
- Australia	1.240	2.690	-53.9
- New Zealand	0.256	0.269	-4.8

**The total is given for the IISI-members economies (66 economies)*

It is necessary to mark the growth of the steel manufacture during the first four months of 2009 in Venezuela – by 10.3 % up to 1.5 mln. tons. In the end of the last year the steel manufacture in the economy was descending – from 343,600 ton and 360,600 ton in September and October down to 340 thousand tons and 300 thousand tons in November and December, respectively. The decrease of the steel manufacture in the economy was caused by the low demand for steel at the internal market, indefiniteness in the infrastructural projects implementation, as well as labor conflicts at the state enterprises – Sidor and Sidetur.

The steel manufacture in the CIS in January-April, 2009 valued 28.8 mln. tons (decrease by 32.8 %), among them Russia decreased the steel manufacture by 32.2 % down to 17.2 mln. tons.

The steel manufacture in the economies of Africa during the four months of 2009 descended as compared with the same period of the last year by 23.8 % and valued 4.7 mln. tons.

In the economies of Oceania the decrease of the steel manufacture valued 49.4 % down to 1.5 mln. tons.

But May became more optimistic for steel manufacturers. The steel manufacture in Japan was reported to grow up to the level of more than 6 mln. tons (5.7 mln. tons both in April and March). The steel manufacture grew again in China.

In May, 2009 China, up to the National Bureau of Statistics data, increased the steel manufacture. In May the iron manufacture in the economy valued 45.426 mln. tons, which by 6.0% exceeded the same period values of the last year and significantly exceeded the previous month values (41.631 mln. tons); the steel manufacture – 46.46 mln. tons (by 0.6 % as compared with May, 2008). In April the steel manufacture in the economy valued 43,413 mln. tons. The manufacture of the metal products in the economy valued 57.291 mln. tons (growth by 7.4 % as

compared with the last May). The steel manufacture growth is observed on the background of the Government calls for limitation of their manufacture in the economy.

In Germany for the first time in May the steel manufacture grew a little as compared with the previous month. The steel manufacture in May valued 2.17 mln. tons, which by 5% exceeded the previous month values. Herewith April became the hardest month for the economy steel manufacture. The steel manufacture descend in April as compared with the same period of the last year valued 53 %. May became a less dramatic month for the German industry, as the manufacture descend as compared with May, 2008 valued 48 %.

The iron manufacture this May in Germany valued 1.18 mln. tons, which is 55 % less than the last May values. 6 of 15 blast furnaces are put out of action in the economy.

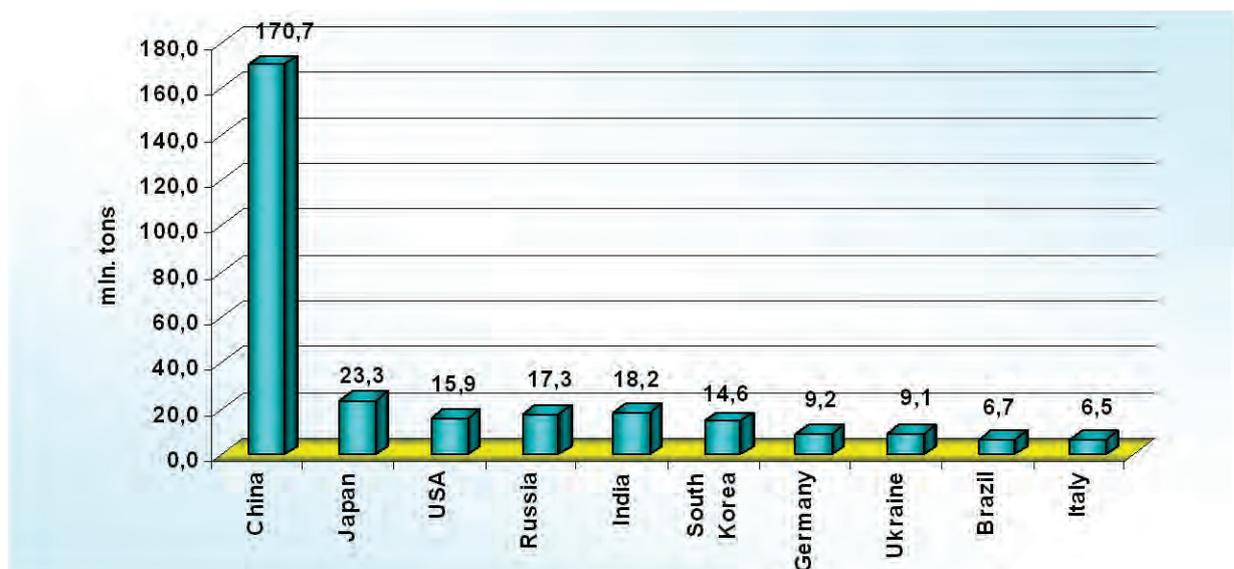
Totally up to the results of January-May, 2009 the steel manufacture in the economy valued 11.3 mln. tons, and the iron manufacture – 6.71 mln. tons, which are 44 % and 47 %, respectively, less than the same period values of 2008.

By the end of May a certain growth of the steel manufacture was marked in the USA, though the manufacturing capacity utilization level in the economy is still very low. In the week, ended on May 23 this year, 1.09 mln short ton of steel were manufactured in the USA, which by 3.2 % exceeded the previous week values. Herewith, up to the American Iron and Steel Institute (AISI) data, the steel manufacturing capacity utilization valued 45.8 %. That is still a little more than a week before (44.4 %), but significantly less than the same period values of the last year (about 91 %). In the first week of June the steel manufacture in the USA valued more than 1.12 mln short ton. Average manufacturing capacity utilization reached 47.1 %.

Steel manufacturing companies in the conditions of demand descend for iron and steel have to decrease the manufacture, to put the main manufacturing equipment out of action, to reconsider the investment programs, to decrease the number of the personnel. Herewith it is necessary to mark that the steel manufacturing companies of Japan, Korea, EU, as well as of other economies purposefully decrease the steel manufacture in order to adjust the balance of demand and offer at the market and to decrease the stock reserves volumes.

Japanese car manufacturers and other steel consumers continued the decrease of their products volumes since the beginning of this year, as they possess high levels of reserves. So, to maintain the market, Nippon Steel Company significantly decreased the steel manufacture in January-April this year.

Main Crude Steel Producers, 4 Months 2009, mln. tons



Nippon Steel since February 1 stopped blast furnace № 1 at Oita plant. Also in the end of February – beginning of March blast furnace № 2 at Kimitsu plant was switched over to slow

run. The company manufactures hot metal with seven blast furnaces with accumulated designed capacity of 26.05 mln. tons a year.

It was expected that the situation at the Japanese market would become better not earlier than in April. But really the Japanese steel manufacturing companies managed to increase the steel manufacture as compared with the low level of manufacture in January-April, 2009 only in May. Up to the estimation of the leading Japanese steel manufacturing company Nippon Steel Corp, the demand may start its restoration after July. Up to the company president Shoji Muneo opinion, some signs of the demand restoration are already observed.

Nippon Steel is intended to increase the steel manufacture in July, 2009 due to the increase of the demand for metal products from the consumers, including car manufacturers. If earlier the company decreased the manufacture by 50 %, in July the manufacture decrease as compared with the normal level of manufacture may value 30-40 %.

In January-April, 2009 the steel manufacture was decreased by Japanese Tokyo Steel Manufacturing. But the company did not refuse to build a new flat steel manufacturing plant in the east of Japan. Tokyo Steel Manufacturing is building the new plant with the capacity of 2.5 mln. tons of flat steel a year in Tahara, prefecture Aichi. The start up of the plant is expected in the end of 2009.

Implementation of part of investment projects is in progress, in particular in China, India, Russia and other economies.

Chinese Fujian Sanan Steel is doing the hot testing of its first rod mill and has been ready to start its full blast operation.

With the new mill the company is intended to hot-roll the wire rod of 5.5-14 mm diameter mainly designed for construction operations. The mill capacity is 600 thousand tons a year. In the end of the last year Fujian Sanan Steel private company put into action a bar mill with the capacity of 1 mln. tons a year. The bar mill products are also designed for construction operations. With that, the company is intended to dismantle the recently stopped old bar mill with the capacity of 200,000-300 thousand tons a year. Steel manufacture capacities of the company value approximately 1.2 mln. tons a year and they are planned to be increased up to 2 mln. tons a year.

Chinese Shanxi Antai Group, province Shanxi, plans to put into action its first rod mill with the capacity of 800 thousand tons a year this August. With that, the company has temporarily stopped the building of a heavy wide-flange beam mill with the capacity of 1.2 mln. tons a year while concentrating on finishing the rod mill building project. Equipment for the heavy mill was delivered by German SMS Meer in 2008. Shanxi Antai Group negotiated with Tanyuan Iron & Steel Group (Taigang) about a joint finishing the heavy mill building project as well. Even further uniting of the two companies located in province Shanxi may be expected. Antai nowadays manufacture coke, cast iron, blank material. Capacities of the company value 2.4 mln. tons a year.

Posco and Aju Steel took the decision to create a joint enterprise to produce pre-painted iron in Malaysia. The enterprise with the capacity of 70 thousand tons a year will deliver the metal to long use products manufacturers. Still, nowadays this project is under discussion. Posco is intended to strengthen its positions at the markets of South-East Asian economies, including Malaysia. In the end of 2007 Posco bought 60 % of stocks of Malaysian Megs Industries Company, which produces galvanized iron in Pulau Indah, Port Klang. Nowadays this company is called Posco-Malaysia. This year the company will produce 130 thousand tons of iron with the capacities of 180 thousand tons due to the crisis. The enterprise delivers flat galvanized iron with the width of 700-1250 mm and the gauge of 0.35-2.0 mm to the consumers (electronics manufacturers). Posco delivers cold-rolled products to its subsidiary structure.

The «5000» rolling mill is being finished by JSC «MMK», Russia.

Ganglu Iron & Steel company, province Hebei, in May, 2009 put into action a new blast furnace with the volume of 1,160 m³ and the capacity of 1.2 mln. tons of cast iron a year. In May, 2008 the company put into action a blast furnace with the same capacity. Nowadays this

company operates four blast furnaces, including two with the volume of 550 m³ each. The company total iron manufacture capacity is 3 mln. tons a year.

A certain improvement of the situation at the world market, which has become more noticeable in May-June, lets companies put into action the equipment which was put out of action before. Naturally, this trend is typical not for all the economies. For example, in the USA steel manufacture companies continue put the equipment out of action, as both the demand for and the volumes of steel manufacture in the economy are still at a very low level.

Malaysian Perwaja Steel Company started the full blast operation of its plant in Kemaman (NSC), Terengganu, this May due to the improvement of the demand for steel. Herewith, the growth of demand for metal products is dealt with the implementation of a number of projects done by the Government in the frames of package of measures to stabilize the situation in the economy. The company reached the capacity of 100 thousand tons of metal products a month. At the plant in Kemaman there are two electric furnaces and a prerduced material production contrivance with the capacity of 120 thousand tons a month.

Malaysian steel manufacture companies had to decrease the capacity utilization level in the fourth quarter of the last year and the first quarter this year by 40-50 % due to the demand for steel descend, complicities in the economy and large stock reserves of metal. But even now Perwaja Steel Company plans to start the steel manufacture at the new electro steelmaking enterprise in the second part of 2010 on the background of the expected demand improvement both at the internal and the external markets. Earlier the company planned to put the new steelmaking enterprise into action in October, 2009.

Most of steel manufacture companies due to the production descend and the prices level decrease work in the first months of 2009 with substantial losses. Even Chinese steel manufacture companies in the first months of 2009 met with substantial losses.

Up to the China Iron & Steel Association's (CISA) data, the Association-member companies (72) only in April, 2009 sustained the losses of RMB 1.87 bln (\$275 mln). Fiscal losses of the companies up to the results of January-April this year valued RMB 5.18 bln (\$756 mln). In January-April, 2008 the benefit of the companies valued RMB 63.4 bln (\$9.25 bln).

CISA deals the growth of Chinese steel manufacture companies' losses with the decrease of prices level for metal products and their excess offer in January-April this year. But, as the Association expects, in the incoming months the growth of prices for metal products is expected at the economy internal market, as the measures taken by the Government to stimulate the internal demand start bringing results. The Baosteel president, however, marked that in China there is still the problem of excess capacities and the financial status of Chinese steel manufacture companies is hardly to become much better in the near future. At the same time the VAT drawback fees at the export of a number of mill products were increased in the economy, which will let increase its competitive ability at the world market.

But, up to many market participants' opinions, these measures are hardly to let revive steel export, as the demand at the world market is at the low level. On the other hand, the Chinese internal market is in much better situation than the main world markets.

American US Steel reported about pure losses of \$439 mln up to the results of the work in the first quarter of 2009. In the fourth quarter of 2008 the company got the pure benefit of \$290 mln, and in the first quarter of the last year – \$235 mln.

In the first quarter of 2009 the company significantly decreased the sales volume as compared with the first and the fourth quarters of the last year down to \$2.75 bln (\$4.5 bln in the fourth quarter and \$5.2 bln in the first quarter of 2008). Metal products shipment, including tubes at American enterprises and products on European actives, in the last quarter valued 3.2 mln short ton, which is less than the last year values (4.2 and 6.8 mln short ton, respectively).

The steelmaking capacities load of the company on the actives of flat will products manufacture in the USA valued only 38 %. The steelmaking valued 2.28 mln short ton, which is significantly less than the values of the fourth quarter of 2008 (2.74 mln short ton and the capacities load level of about 45 %) and the first quarter of 2008 (5.56 mln. tons and the load of

almost 92 %). In the flat will products manufacture segment the operational losses up to the results of the first quarter valued \$422 mln, and the operational losses on European actives of the company valued \$159 mln. For the tubes manufacture the company got the operational benefit of \$157 mln up to the results of the first quarter. The company directorate expects losses up to the results of the work in the second quarter this year as well, as orders volume is at the low level, and the stopped capacities also require expenses.

Some positive changes at the world steel market, despite the pessimistic estimations and forecasts of development of both global economy in general and steel manufacture in particular, are dealt with the measures being taken in different economies to support their economies. In different economies and regions much money is spent to support the economies and to stimulate the demand, which naturally influences both the manufacture and the consumption of steel.

One more direction of the situation development in the world steel manufacture is taking measures during the last six months by many economies to protect their steel companies and markets, including a number of import limitations. Besides, the Governments are intended to stimulate the metal products export from the economies, in particular China, which increased VAT drawback for different types of exported metal products.

Since January 8, 2009 the European Commission for the six months period introduced temporary special antidumping duties for unalloyed and alloyed steel rod deliveries from China and Moldova. The value of the trade limitation for Chinese Valin Group Company is determined as 8.6 %, for other Chinese exporters – 24.6 %. Temporary special antidumping duty for the import of Moldavian rod will be as 3.7 %. Duties for the Turkish rod are not introduced, as it is defined that the products deliveries from that economy do not inflict any loss on European manufacturers.

In accordance with the agreement upon metal products trade in the EU economies, signed between representatives of the Russian Federation Government and the European Commission, in 2009 the quota limit for the Russian production metal products delivery was increased by 2.5 % as compared with the level of 2008 and valued 3.107 mln. tons. The new quota limits came into effect since January, 2009. Mark here that in 2008 Russian exporters filled the quota in by 72 %.

If in 2010 Russia joins the WTO, the quota limits will be cancelled, if it does not join, they will be increased by 2.5 % more. But meanwhile Russian metal production enterprises can not use even these possibilities to deliver metal products to the EU economies due to the low demand for steel in the region.

Quota limits for the Russian metal products delivery to the EU in 2009, thousand ton

Types of products	Category	2008	2009
Flat products	SA		
Hot-rolled coil (without coils for further crossing)	SA1	1,035.000	1,060.875
Thick flat	SA2	275.000	281.875
Other flat products	SA3	595.000	609.875
Alloyed steel	SA4	105.000	107.625
Alloyed hot-rolled thick flat products	SA5	25.000	25.625
Alloyed cold-rolled flat products and pre-painted flat products	SA6	110.000	112.750
Sorted products	SB		
Beams	SB1	55.800	55.000
Rod	SB2	275.000	324.000
Other sorted products	SB3	474.000	507.000
Products, totally		2,904.000	3,031.000

Source: Russian Ministry of Industry and Trade

The **Russian Federation** Governmental Commission for protective measures in foreign trade and customs politics took the decision to apply the increased import taxes fees to hot-rolled rod reinforcement for concrete-steel constructions. According to the decision, 15 % tax is now applied to the metal products classified with the Customs codes 7213 91 410 0, 7213 91 700 0 and 7213 99 100 0 (round in section rods).

On January 15 the Russian Federation Government reported about signing the regulation introducing for the nine months period the temporary fees for import duties of 15-20 % for some types of metal products and steel tubes.

For some types of iron products the import duties are increased from 5 % up to 15 %, for some types of unalloyed steel – from 5 % up to 20 %, for some types of steel tubes – from 5 % up to 15 % and 20 %. The duties are introduced for import of metal products and steel for 11 positions, of tubes – for 46 positions, including casing, pump-and-compressor and seamed tubes.

The RF Government introduced the 8 % duty for import of large-diameter pipes (LDP) from China.

The correspondent regulation (№ 402 of May 8) was signed by the RF Prime Minister. The duty will affect till December 21, 2009. The duty is applied to 17 positions of commodity nomenclature.

Ministry of Industry and Trade of the RF declared about the start of antidumping investigation of screws, nuts and washers used in the car manufacture industry import to Russia.

The investigation is started under the application of JSC «Magnitogorsk metalware-caliber plant» (JSC «MMK» structure) and JSC «Severstal-metalware» (part of JSC «Severstal»). The mentioned enterprises hold the average share of 70 % of the total volume of the car manufacture mounting hardware production in the RF.

The investigation objects are steel screws, hexagonal nuts and spring washers.

Up to preliminary data, from 2006 till 2008 the volumes of the car manufacture mounting hardware import in the RF are increased by 62 %. While volumes of the car manufacture mounting hardware production and sales at the internal market by the enterprises-apppliers descended by 13.9 % and 14.7 %, respectively.

Russian steel enterprises MMK, «Severstal» and NLMK on May 20 addressed Ministry of Industry and Trade of the RF with the third application about the introduction of a special protective duty for the import of pre-painted steels with 5 Customs codes for 3 years valued 15.6 %. The appliers estimated the threat of losses in 2009 as RUB 7 bln. Up to the application data, the volume of manufacture for the first four months of 2009 descended and valued 586 thousand tons as compared with 872 thousand tons for the same period of the last year.

In April the EU introduced custom duties for rod from China and Moldova of 24.6 % for the six months period.

The USA Congress House of Representatives in the end of January adopted a package of measures aimed to support the American economy. Among the key measures there is a special document, The American Steel First Act (ASFA), which stipulates the priority of the American manufacture steel use to develop federal infrastructure projects and significant decrease of the steel products import.

Since the beginning of 2009 Turkey increased the import duties for hot-rolled coil from 5 up to 13 %, for cold-rolled flat — from 6 up to 14 %, and for thick flat the duty of 15 % is introduced. This is dealt with the intention to support the local manufacturers. Mainly, the duties are aimed to limit deliveries from Russia, Ukraine and China.

To stimulate the export and to increase the competing ability of the metal products at the world market China increased VAT drawback for different types of metal products since April 1 and since June 1, 2009.

In particular, VAT drawback for the export of alloyed steels rod is increased from 5 % up to 9 %. VAT drawback is increased for the export of rails, seamless and seamed tubes (up to 9 %).

The market protection measures as the customs duties introduction are taken by other economies as well, including China, India, Thailand, Egypt, USA etc.

There are different estimations of trends for the situation development at the world steel market. Up to the AME forecasts, the world steel manufacture in 2010 will value 1,197 mln. tons. The world steel manufacture leader in 2010 will remain China (460.7 mln. tons). But obviously, if China maintains the gained rate of manufacture, its steel production volume will never descend as compared with 2008, but on the contrary will grow. That will significantly correct the AME forecast data.

Up to the Posco Research Institute (Posri) forecasts, the restoration of steel manufacture in Korea will start most likely in the fourth quarter this year. The full scale restoration of steel manufacture in the economy is expected since the first quarter of 2010.

Up to the estimations of British MEPS analytical agency, in 2009 the world steel manufacture will descend down to 1.285 bln ton. Herewith, the first half of the year will be the hardest for steel companies.

The world steel manufacture forecast (up to the AME data), mln. tons

Economies and regions	2008	2009	2010
WORLD, totally	1,330.0	1,169.0	1,197.0
North America economies	124.2	104.7	107.2
<i>USA</i>	91.5	75.9	77.5
<i>Others</i>	32.7	28.8	29.7
Central and South America economies	48.7	42.6	43.7
<i>Brazil</i>	33.7	28.7	29.5
<i>Others</i>	15.0	14.0	14.2
European economies	230.1	198.7	200.5
<i>EU economies — 15</i>	168.8	145.6	146.6
<i>EU — 12</i>	30.3	26.3	26.7
<i>Others</i>	31.0	26.8	27.2
CIS	114.1	90.7	93.3
Middle East economies	16.8	15.1	15.8
African economies	17.4	15.6	15.8
Asian economies	770.4	693.7	712.9
<i>China</i>	502.0	447.3	460.7
<i>India</i>	55.1	51.7	53.0
<i>Japan</i>	118.7	106.9	109.2
<i>Others</i>	94.6	87.8	89.9
Oceania	8.4	7.6	7.7

In particular, the steel manufacture in the EU economies in 2009 will be decreased by 13 mln. tons on the background of the construction sector and other consumers weakness and will value 183.6 mln. tons. The forecast on the steel manufacture level for CIS economies is not optimistic either: steel manufacture descends down to 103.2 mln. tons.

The steel manufacture in the North America economies in 2009 will descend down to 103.2 mln. tons, in South America — down to 45.6 mln. tons. At the same time the steel manufacture in China will grow in 2009 up to 505 mln. tons.

Up to the estimations of MEPS, the world steel manufacture in 2008 valued 1.328 bln ton, which is 16 mln. tons lower than the 2007 level.

Up to the Ministry of Industry of Iran data, the carbon steel production in the economy by 2014 will grow up to 24 mln. tons. This level will be reached by building new metal production plants. In the near future the Hormozgan Steel enterprise capacities, managed by Mobarakeh Steel, Khouzestan Steel and Esfahan Steel companies consortium, are to be enlarged. Its capacity will value 5 mln. tons.

In 2008 12 mln. tons of steel were produced in Iran, including 10 mln. tons by the state enterprises and 2 mln. tons – by private enterprises.

The steel consumption in Iran in the incoming two years may reach 20 mln. tons.

Minister of iron and steel of India declared that by 2015 the economy will become the second world largest steel manufacturer. Nowadays India takes the fifth place, but because a large amount of planned capacities were put into action, the volumes of manufacture may suddenly rise.

However, such optimism surprises the analysts. Posco, Sinosteel India, Tata Steel, JSW Steel and ArcelorMittal companies advancing their projects have been trying to get the appropriate documents of approval from ecological services and to sign rental contracts for a long time now.

Nowadays India produces 54 mln. tons of steel a year. Indian Essar Steel Holdings Company, part of Essar Group, is intended to invest Rupees 177.6 bln (\$3.678 bln) in the construction of the metal production plant with the capacity of 6 mln. tons a year in Karnataka. The construction of the new plant will let the company enlarge the capacities up to 25 mln. tons.

Karnataka state Government gave the permission for the plant construction, at the same time the company is asking for the permission to rent a mine to guarantee continuous supply of iron raw material.

Up to the project, the new enterprise will include the pelletizing department and the by-product coke department. Initially the plant will have the capacity of 3 mln. tons a year, at the second stage its capacity will be twice more and will value 6 mln. tons a year.

11.2. Steel Consumption

The world steel consumption in 2007 was increased, up to the AME data, by 7.2 % as compared with 2006. In 2008 the steel consumption descended by 0.4 %. In 2009 the further descend of the steel consumption is expected — by 11.4 %. Herewith, the data on the world steel consumption may differ greatly depending upon the information given by analytic companies and institutes.

Up to the WSA data, the world steel consumption been recalculated in crude steel in 2007 valued 1,317.3 mln. tons, and the consumption of metal products – 1,221 mln. tons.

Herewith, the consumption trends depending not upon the source of information have the same trend.

It is forecasted that no major improvement of the situation in the world economy must be expected before the middle of 2010, and the demand for steel in certain regions may reach the level of 2007 only in some years. Nevertheless, in 2010 most of the market participants expect the situation improvement and the demand for steel increase. Herewith, the demand increase, as expected, will rise in the second half of 2009. Though some improvement of the situation in the second half will not let even partially compensate the descend of the first six months.

There are a lot of opinions on the further development of the world steel market and they differ in the terms of improvement of the situation at the market and its full scale restoration.

Up to Bruno Bolfo, Duferco Group, opinion, it may take 5-7 years to restore the steel consumption at the level of 2007.

Up to other sources forecasts, more active restoration of the steel market will start in 2010.

Correspondingly, different data on the steel consumption volumes are given for different economies.

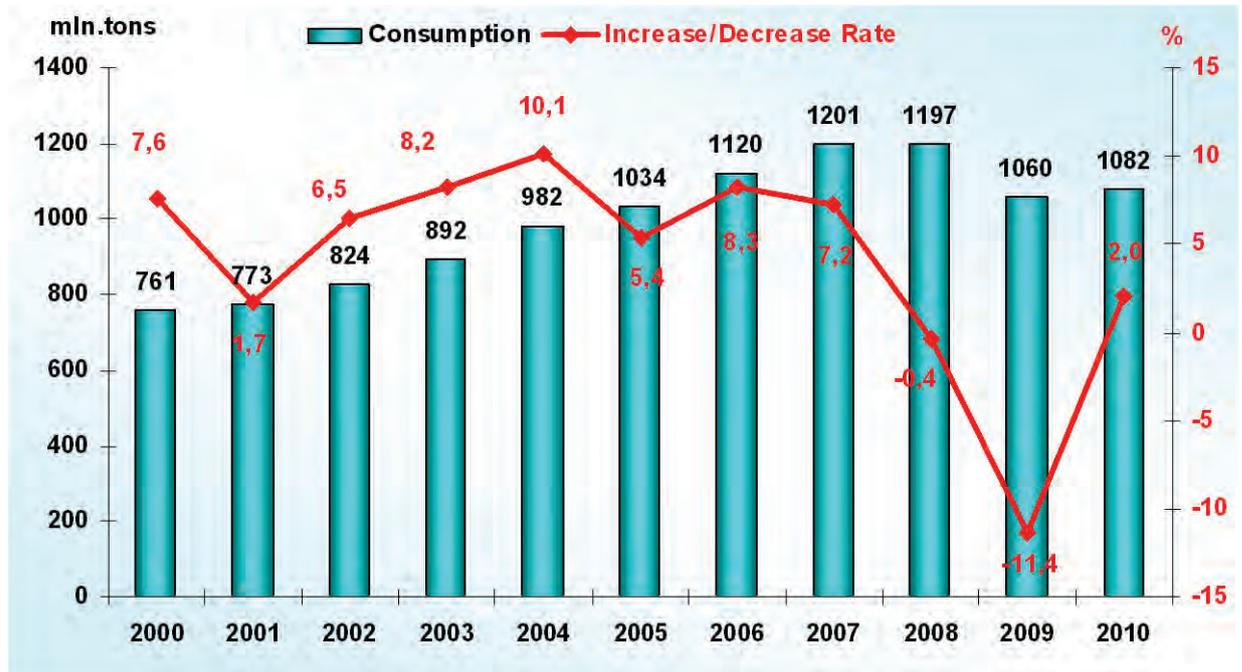
Up to the AME data, the world steel consumption may be restored after 2010. The steel consumption in 2009 will descend as compared with the level of 2008 by more than 130 mln. tons, including because of China. Up to the AME data, the steel consumption in China in 2008 valued less than 420 mln. tons and will descend more in 2009.

Up to the Chinese sources data, the steel consumption in China in 2008 valued 452 mln. tons (almost 2.9 % growth as compared with the previous 2007). The pure export of semifinished materials and metal products been recalculated in crude steel valued 48 mln. tons in 2008.

It is considered that the effect of the Governmental measures to stimulate the state economy and the decrease of the hidden export of metal products will let bring the internal steel consumption in 2009 up to 462 mln. tons (10 mln. tons growth as compared with the previous year level). The steel pure export will descend down to 40 mln. tons.

The Chinese Government took a number of economic measures to stimulate the demand for steel in the economic crisis conditions. These measures will let significantly increase the demand for steel in the economy. Probably, these measures will let significantly compensate both the steel export descend while the increase of the import this year.

Consumption dynamics (mln. tons) and growth-descend ratios (%) of the world steel consumption (up to the AME data)



The world steel consumption forecast (up to the AME data), mln. tons

Economies and regions	2005	2006	2007	2008	2009	2010
WORLD, totally	1,034.0	1,120.0	1,201.0	1,197.0	1,060.0	1,082.0
North America economies	142.4	154.9	141.9	131.9	114.1	116.1
USA	110.1	119.6	108.0	99.5	84.6	86.1
Others	32.3	35.3	34.0	32.4	29.5	30.0
Central and South America economies	31.9	35.7	40.2	41.2	37.9	38.4
Brazil	16.8	18.5	21.6	22.7	20.4	20.8
Others	15.0	17.2	18.5	18.6	17.5	17.6
Europe	190.7	213.3	223.4	215.5	190.6	192.1
EU — 15	140.5	155.5	160.9	152.5	133.2	134.0
EU — 12	25.1	29.0	30.8	31.7	28.5	28.7
Other European economies	25.1	28.8	31.7	31.3	28.9	29.4
CIS	43.0	49.1	56.7	54.6	45.2	46.2
Middle East	34.2	38.8	44.3	47.1	42.4	43.6
Africa	24.5	23.3	25.2	27.3	24.5	25.1
Asia	559.6	597.3	660.8	670.1	598.1	612.5
China	327.0	356.2	402.5	416.5	370.7	381.8
India	38.1	43.1	50.0	52.1	47.4	48.8

<i>Japan</i>	<i>78.0</i>	<i>79.0</i>	<i>80.2</i>	<i>79.1</i>	<i>71.2</i>	<i>71.4</i>
<i>Other Asian economies</i>	<i>116.5</i>	<i>119.0</i>	<i>128.1</i>	<i>122.4</i>	<i>108.8</i>	<i>110.5</i>
Oceania	7.9	8.0	8.2	8.7	7.7	7.8

This year the demand for steel from the industry descended by 7-8 %, including because of the demand decrease from car manufacture, construction and building, steel tubes manufacture, machinery construction. Up to the Eurofer forecasts, the revival of the demand for steel is expected in 2010.

Naturally, in the conditions of the demand for steel decrease the external trade volumes decrease is expected as well. It is forecasted that the import of steel to the EU economies in 2009 will descend by 11 %, and the export – by 9 %. In 2010 some increase of both export and import of steel is expected.

The apparent consumption of steel in the six economies-members of ASEAN (Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam) in 2008 valued, up to the preliminary data of South East Asia Iron & Steel Institute (Seaisi), 45-46 mln. tons, which is 4-5 % more than in 2007.

The consumption increase is dealt with the significant growth of the demand for steel (by 10.2 %) in the first half of 2008 up to 25.2 mln. tons as compared with the same period of 2007.

During January-June, 2008 the steel manufacture in the region was increased approximately by 13 % up to 15.2 mln. tons. The import for that period grew by 13 % and valued 15.6 mln. tons, while the export jumped up by 28 % up to 5.6 mln. tons.

Seaisi marks that as the reply to the prices decrease, the world economy slowdown and orders for steel level decrease in the second half of 2008, mainly in the fourth quarter, steel products enterprises in the ASEAN economies significantly decreased the manufacture volumes.

In Brazil in 2009 the apparent consumption of steel decrease is expected approximately by 22 % as compared with the level of 2007. Rudolf Bühler, IBS, marked that the Brazilian enterprises last year sold at the internal market of the economy 24 mln. tons of flat and sorted milled products. In 2009, up to the IBS forecasts, the metal products sales at the internal market by the Brazilian enterprises will value only 18.7 mln. tons. Brazil needs to make structural changes in order to increase the steel consumption per capita, which has been at the level of 100 kg per person for many years. Obviously, the consumption growth will depend upon the construction sector development, which in 2008 covered about 36 % of the total metal consumption in the economy. The second major sector of the steel consumption in the economy is the car manufacture.

Up to the Posri data, the steel consumption in Korea after the first six months of 2009 will descend by 28 % as compared with the same period of the last year down to 22.5 mln. tons. In the first six months of 2010 the consumption will grow by 13 % as compared with the level of the first six months of 2009 and will reach 26 mln. tons. Due to the global recession the demand for steel descended from the car manufacture and the long-use products manufacture of Korea. Thus, Posri estimates the descend of demand for cold-rolled flat product in coils in the first six months of 2009 by 35 % as compared with the same period of the last year down to 946 thousand tons, and for zinc-coated flat product – by 26% down to 1.6 mln. tons. In the first six months of 2010 the demand for these types of metal products in the economy rose by 15 % and 8 % up to 1.1 and 1.7 mln. tons respectively. Posri also expects the demand increase from the internal and external markets for cars and electronics.

The apparent consumption of steel in Malaysia in 2008 descended by 10.7 % as compared with the previous year. It is expected that the decrease of the steel consumption in the economy in 2009 may be down to 25 %. It is necessary to mark that the steel consumption in the economy in the fourth quarter of 2008 descended by 60 %. The demand for steel remained at that low level in the first quarter of 2009. As to Malaysian Iron & Steel Industry Federation (Misif) president, the demand at the market will grow during the first six months on the background of the stock reserves descend.

Misif considers that the demand for metal products in the economy will grow by 10-15 % each quarter this year after the prices for metal products reached their minimum last December and were low during the first quarter. Currently the demand and the orders for metal products growth is marked both at the internal market and at the exporting directions.

Up to the Misif forecasts, the demand for metal products level of 2007 will be reached only in 2-3 years. Metal production companies will not be able to work with full capacities utilization before the market is restored. The growth of the demand for steel in the economy is supported by small Governmental projects in the construction sector. At the same time the Government is intended to take new measures to support the economy. Up to the Misif estimations, 25 % of the budgeting or \$15 bln will be aimed to implement the construction projects during the incoming two years.

11.3. Production and Consumption of Hot-Rolled Products

Notwithstanding the situation in the world market of ferrous metals in the second half of 2009, the results of the first months (January-April) showed a considerable reduction in production and as a consequence reduction in consumption of steel.

According to CRU, production of long products declined in most economies around the world in the first quarter of 2009 as compared to the corresponding period of the previous year. Besides, the greatest decline in production including all ferrous metals in general occurred in the USA and the EU. A decline in production and consumption of flat-rolled products occurred in the same regions which is a consequence of problems in auto-making and construction industries. Automobile production continues to fall in the EU and the USA. Even government's investments do not help the auto-makers. At the same time in China, there is a rise in both production and sales of automobiles. This is partially a good sign.

Long products production and consumption

According to CRU, in the first quarter of 2009 as opposed to the first quarter of 2008 , **global long products production (excluding semi-finished products)** declined by 9% as compared to the corresponding period of the previous year and stood at 130,6 mln. tons. The share of Asia in the global production of long products in the first quarter of 2009 was 65.9 %.

According to the results of the first quarter of 2009 in comparison with the first quarter of 2008, there were slight changes in the structural range of rolled products production which did not affect the overall structure of rolled products production. In particular, there was a rise in production of wire rod while production of bars, constructional steel and reinforcing steel declined. Taking into consideration the production of wire rod used in construction industry, production of reinforcement materials grew compared to other sorts of long products. These changes mostly occurred due to a rising demand for rolled-products of construction grades in several economies of Asia as opposed to minimal production volumes in the end of last year. In the EU demand for rolled-products used in construction grades remained low during the first four months of the current year due to problems in the construction field in the region.

It should be noted that in the end of the first quarter of 2009, production exceeded consumption in Western and Eastern Europe, the CIS and Asia.

Global production of long products in 2004-2008 and I quarter of 2009, mln. tons.

Region	2004	2005	2006	2007 *	2008	1st quart. 2009
Total	421,0	454,9	514,1	567,7	560,5	130,6
North America	36,7	34,9	36,0	37,1	35,5	7,1
Western Europe	59,9	56,9	62,8	65,0	64,1	13,8
Asia	218,5	266,2	306,8	346,7	339,7	82,1
CIS/Eastern Europe	41,2	32,7	36,9	61,5*	61,7*	14,2*

Others	64,7	64,1	71,7	59,2	61,0	13,4
<i>*since 2007 including Turkey</i>						
<i>Based on CRU's data</i>						

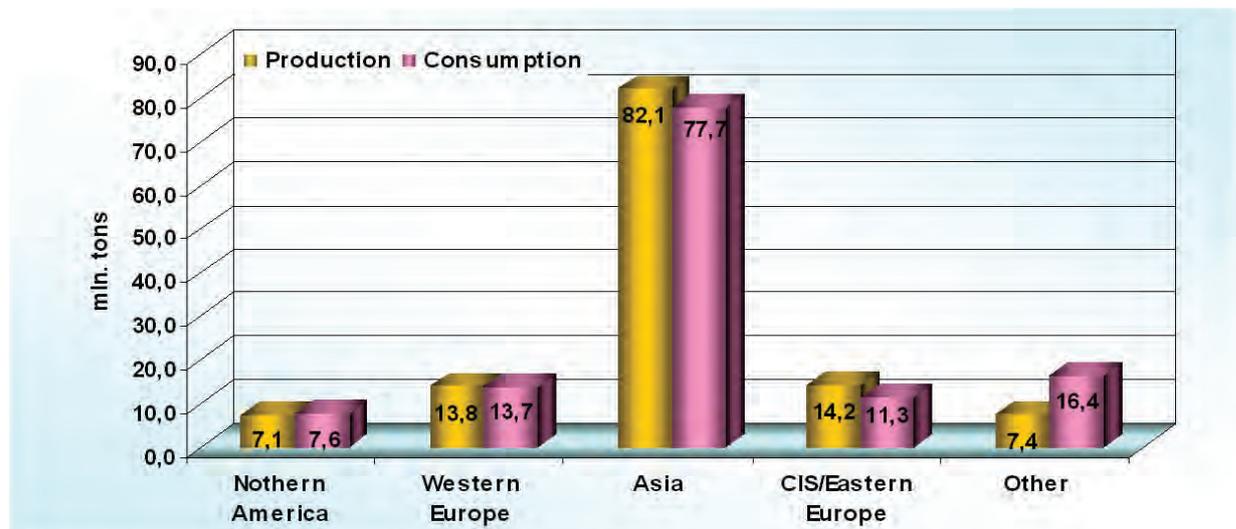
The consumption of long products declined by more than 11% in the first quarter of 2009 as compared to the corresponding period of the previous year. And the fall in demand in the world occurred mainly because of the USA and Europe and some economies in Asia including Korea.

Consumption of long products in the world in 2004-2008 and 1st quarter of 2009, mln. tons.

Region	2004	2005	2006	2007 *	2008	I quarter 2009
Total	421,0	454,9	514,1	563,5	556,0	126,8
North America	44,3	40,8	44,3	41,6	37,5	7,6
Western Europe	58,1	54,5	62,5	64,7	62,0	13,7
Asia	217,1	262,5	296,5	329,3	326,4	77,7
CIS/Eastern Europe	32,3	24,5	27,0	51,2*	50,6*	11,3*
Others	69,2	72,8	83,8	76,7	74,5	16,4

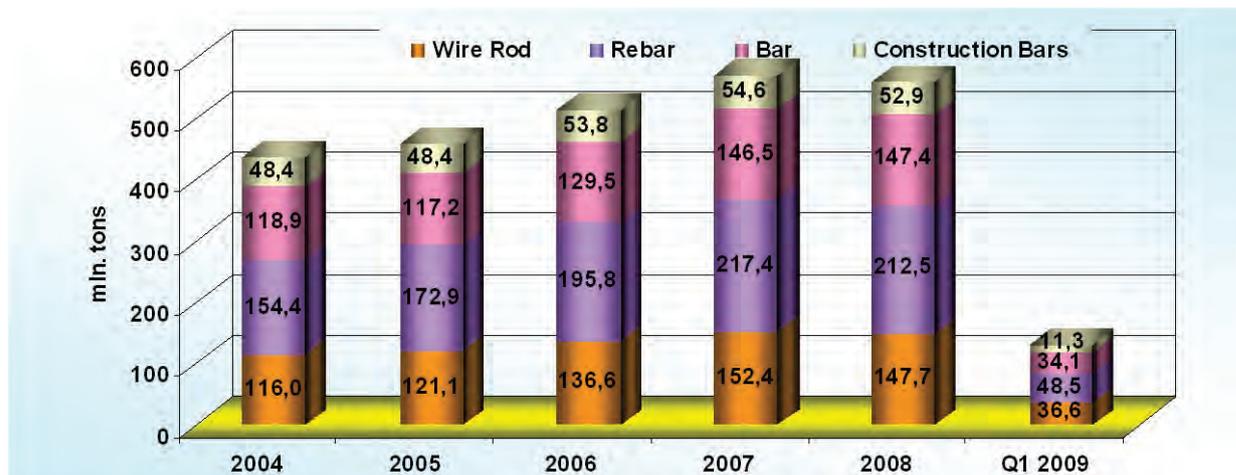
**since 2007 including Turkey*
Based on CRU's data

Balance of production and consumption of long products in regions in the I quarter of 2009, mln. tons.



Based on CRU

World's production of long products by types in 2004-2008 and I quarter of 2009, mln. tons.



Based on CRU

However, according to economy sources, long products production, particularly in China, greatly exceeds the information published by CRU.

In China, production of long products, particularly reinforcing steel, continues to grow. In April, production of reinforcing steel reached a new record of 9,69 mln. tons. which, according to CISA, is more than in March (9,64 mln. tons.) and almost 18% more than the corresponding period of the previous year. Besides, there was a slight decline in production of steel as compared to March.

In total, the economy produced 36,7 mln. tons. of reinforcement steel in January-April of 2009 which is 19.9 % more than in January-April of 2008.

Increased production of reinforcement materials may be caused by a growing demand due to the implementation of a package of measures to support the economy's economy. It is necessary to take into account the possibilities for steel companies to obtain loans at a concessional basis.

In January-April of 2009, investments in urban China grew by 30.5% up to \$542 billion. At the same the production of bars slightly decreased down to 7,48 mln. tons. as compared to March (7,53 mln. tons.) but increased by 10.3 % as compared to April of 2008.

Hot-rolled production decreased by 5.9% as compared to April of 2008 while the production of heavy plates decreased by 20%. Hot-rolled production did receive the same type of support as long products production from the implementation of a package of measures to support the economy's economy. The greatest part of the projects is designated to infrastructure development of the economy. In total in January-April of 2009, China produced 28,19 mln. tons. of bars which is a 8.6 % increase as compared to January-April of 2008.

In January-April of 2009, China's investments in railway development grew by 127.9% as compared to the corresponding period of the previous year and stood at RMB 118 billion (\$17,3 billion). It undoubtedly increased the demand for railway metals in the economy by a significant degree. As a result, railing production grew in the economy. In January-April, RMB 103 billion (\$15 billion) was designated to railway construction which is 167% more than in the corresponding period of the previous year. Railing production in the economy grew by 123.6 % up to 1,48 mln. tons. in January-April. In April alone China manufactured 366,6 thousand tons of rails which is in fact slightly lower than in March (395,6 thousand tons) but significantly higher than in April of 2008 - 210,5 thousand tons. In 2009, governments of different provinces will spend RMB 600 billion (\$87,8 billion) on railways development which will increase the demand for steel by 20 mln. tons. Relevant ministry will demand 3,25 mln. tons. of rails alone (1,88 mln. t. in 2008). This makes it possible for companies that produce rails at full capacity to increase their production. Thus, Baotou Iron & Steel is working with a full load capacity and is planning to produce 1,3 mln. tons. of rails for Ministry of Rail Transport. In 2008, the company made 1 mln. tons. of rails.

The government of Korea expanded the program for implementation of civil projects which may increase demand for steel by additional 400 thousand tons or more including reinforcement steel, plate iron and bring it up to 3,6 mln. tons. in 2009 (3,2 mln. tons. a year earlier). According to Posri's estimations, the increase in demand for reinforcement steel on behalf of road construction and sea port construction industries will stand at about 261,7 thousand tons. In this way, the fixture will have approximately 65% of the increase of the demand for steel products during the implementation of government civil projects.

The Governments of the six economies of South-East Asia, including Indonesia, Malaysia, Philippines, Singapore, Thailand and Viet Nam, allocated \$102.1 billion for the implementation of a package of measures to support the economy. Besides, a significant portion of funds will be designated to construction and infrastructure development that will positively affect the demand for ferrous metals in the region, particularly for long products. The effect of these measures will be seen more clearly in 2010. In several economies, including Viet Nam with a population of 85 million people and steel consumption per capita of 97 kg, Indonesia (225

million people and 30 kg per capita) and Philippines (88 million men and 38 kg per capita) there is a need for infrastructure development.

In May-June of 2009, prices for wire rod and bars slightly increased on the market of Malaysia (approximately at \$ 29/t). According to traders, prices increased due to lacking offers of bar and rod on the market. In part this is due to shortage of scrap and, possibly, exports of semi-finished products by steel companies. Prices for class can continue to rise, because of the grown demand, partly due to cuts of stocks in recent months that will have to be replenished. In addition, consumers are trying to purchase more metal because of growing prices for it. Thus, the situation on the bar and wire rod market has improved somewhat as compared to the most critical fourth quarter of last year. According to the Malaysian Iron & Steel Industry Federation, production of long products and billets in the economy declined in 2008 as compared to the previous 2007. Besides, production of rods in the fourth quarter of 2008 amounted to 200 thousand tons as compared to 535 thousand tons in the third quarter.

Production of billets and long products in Malaysia, mln. tons.

Produce	2005	2006	2007	2008
Billets	3,796	3,834	4,695	4,626
Wire rod	1,648	1,942	1,944	1,903
Bars	1,175	1,158	1,331	1,110
Long products	0,295	0,254	0,22	0,214

Source: Malaysian Iron & Steel Industry Federation

In January-May of 2009 there was a growth of consumption of long products used in construction in Viet Nam which is produced in this economy. The consumption grew by 1.6% and stood at 1,58 mln. tons. Even in May of this year according to Viet Nam Steel Association (VSA), consumption of long products made in the economy in May totaled 354,99 thousand tons, which is 13% higher than May of 2008, but 17.8% lower than in April.

Most iron and steel companies of Columbia are increasing their production of metals in April-May of this year compared to the low level of production in the first quarter. But the production of long products in the economy is growing more significantly (faster) as opposed to the production of subproducts which can create shortages of semi-finished products for (rolling) companies with rolling production. Currently, the production of long products in the economy stands at about 90-95 thousand tons per month, which generally comes up to the production level of the first quarter of 2008. Manufacture of subproducts stands at a lower level as compared to the first quarter of 2008. Thus, according to Ifafa, companies using electric furnaces, such as Gerdau Diaco, Sidenal and Sidoc, since March of this year produce approximately 60-65 thousand tons of subproducts per month which is lower than the same period the previous year - 70-75 thousand tons per month.

In Europe there was a decline in production and consumption of long products in the first months of 2009. According to the CRU preliminary data, production of long products in Western Europe decreased by more than 22% as compared to the first quarter of 2008. The greatest reduction of production happened in France, Great Britain. Reduction of production occurred in all the economies of the region

The drop in demand from the construction industry led to a downfall of consumption of long products in the economies of Western Europe by about 17% compared to the first quarter of the previous year and remained at the level of the fourth quarter of 2008.

European economies have to reduce imports of long products. Export of metal products is also declining but not as drastically as import. Along with that there is a reduction of sales of long products within the EU due to a low demand.

In Spain, demand has dropped so much that steel companies have become more active in supplying rolled products for export. In the first quarter of 2009, exports of steel products from the economy exceeded imports. This is the first time it has happened since 1996. According to

Siderex, export of steel products from economy in the first quarter amounted to 1.7 million tons, while imports - to 1.35 million t. Thus, exports, as compared to the first quarter of 2008, decreased by 12.8%, and import - by 63.2%. Spain has significantly reduced the supply of steel products in the EU economies, which traditionally have been the main markets for Spanish steel companies. If in the first quarter of 2008, the EU economies accounted for 75.7% of exports of steel products from Spain, but in the first quarter of 2009 it was only 47.5%. The main items of Spanish exports in the first quarter of 2009 were reinforcing steel - 535.087 thousand tons (increased as compared to the corresponding period of the previous year), and also bars 201,015 thousand tons (a 37.4% increase).

Minor signs of improvement in the market became obvious only in May and June, which showed itself in strengthening of the price level. Nevertheless, it is important to note that demand for long products by the construction industry remains at a low level. At the same time there is a continuous decline in stocks in the region, which makes it possible to project some growth of demand in the coming months.

Flat products production and consumption

According to preliminary CRU data, in the first quarter of 2009, world production of hot-rolled sheets (thickness of less than 4.75 mm) decreased by 32.9% down to 76.3 million t. in comparison with the first quarter of 2008. Main manufacturers of this type of product are the economies of Asia, which account for more than 51% of global production.

There was a reduction in sheet production in almost all regions in the end of the first quarter of 2009.

According to the results of the first quarter of 2009, manufacture of this type of produce in Asia fell by 26.3% as opposed to the first quarter of 2008. The share of Asia in global consumption of hot-rolled sheet (thickness of less than 4.75 mm) was 50.3%.

The largest producer and consumer of hot-rolled sheets (thickness of less than 4,75 mm) is China, which share in global production increased from 22,0 % in 2006 to 25 % in 2007 and 2008. In the first quarter of 2009 amid the reduction in production of hot-rolled sheets in the USA , Europe, Japan, and other economies, China's share of production grew and exceeded 31 %.

Moreover, among the leading producers and consumers of hot-rolled sheets (thickness less than 4,75 mm) abroad are the USA and Japan. In total, 50,7 % of global consumption of hot-rolled sheets fall on China, the USA, and Japan.

Global hot-rolled sheets production (thickness less than 4,75mm) in 2005-2008 and the first quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1 st quarter of 2009
Total	379,3	419,3	442,6	426,2	76,3
North America	67,8	70,2	67,6	63,3	9,0
Latin America	16,1	16,9	17,7	16,0	2,5
Europe	82,1	87,8	86,7	83,2	13,4
CIS	27,6	26,8	27,9	24,3	4,7
Asia	151,8	180,5	203,7	202,9	39,0
Others	33,9	37,1	39	36,5	7,6

Based on CRU

European economies are the largest consumers and producers of hot-rolled sheets although objective demand for it is decreasing. In the recent months demand for flat steel in Europe has dropped drastically due to the economic crisis and difficulties in obtaining loans. It is hard for consumers to receive funding for new purchases. Besides, the region receives a lot of cheap imported flat sheet.

In the first quarter of 2009, volumes of production and consumption of flat rolled products including hot-rolled sheets continued to decline which was caused by a decreased demand for it from mechanical engineering, first of all automotive industry and other industries that use steel in their production.

According to CRU, production of hot-rolled sheets in Western Europe fell by almost 43% and stood at less than 11 million tons (18.6 mln. tons a year earlier) in the first quarter of 2009 as compared to the same period the previous year. The most significant decline in production of hot-rolled products occurred in Spain (by more than 52%). The decrease of production in significant amounts was observed in other Western European economies, including France, Germany, Italy, Great Britain.

For example, in Italy in March 2009, the production of flat-rolled products declined by 57% and, according to the Federacciai, amounted to 580 thousand tons (1.3 million tons a year earlier) as compared to the same period of the previous year.

In the first quarter of 2009, flat-rolled production in the economy fell by 48% and stood at 2 mln. tons. as opposed to the same period of the previous year. At that, hot-rolled production in the economy fell by more than 38% and, according to CRU, stood at less than 640 thousand tons as compared to the first quarter of 2008.

Decline in volumes of foreign trade in flat-rolled products in Italy goes along with a decline in demand for this product. In January-April both imports and exports of flat-rolled products fell by 31% as compared to the corresponding period of last year. Moreover, according to Federacciai, imports of flat-rolled products stood at 1 mln. tons.

At the same time imports of flat-rolled products to the economy grew in March as compared to February.

Imports of flat-rolled products to Italy in March 2009 increased by 60% as compared to the previous month and amounted to 286 tons. As compared to the average monthly imports of flat rolled products into the economy in 2008, rates of import of flat-rolled steel in March fell by 27%.

Imports of cold-rolled flat coils and hot dipped galvanized metals into the economy have also grown. Imports of cold-rolled flat coils into Italy almost tripled in March in comparison with February and amounted to 79 tons. The same situation occurred with imports of hot dipped galvanized metals, it more than tripled and amounted to 42 tons. Imports of heavy plate grew twice as much and amounted to 24 tons. Imports of hot-rolled flat coils increased by only 19% and stood at 133 thousand tons. The main suppliers of hot-rolled flat coils to Italy in March were Turkey (38 thousand tons), Australia (30 thousand tons), India (21 thousand tons), Russia (13 thousand tons). In addition, Turkey shipped to Italy 30 thousand tons of cold-rolled flat coils, and 3 thousand tons.

Automotive production in Europe is dropping which leads to considerable cuts in demand for flat steel. According to Anfia, in January-March of 2009 in Italy, sales of new cars decreased by 15% down to 918,1 thousand cars as opposed to the corresponding period of the previous year.

As a result, in the end of the first quarter of 2009, in Western Europe consumption of hot-rolled flat products (thickness less than 4,75 mm) declined by 40% and stood at less than 11,5 mln. tons. (more than 19 mln. tons. a year earlier) as opposed to the first quarter of 2008, according to CRU. Decline in consumption of hot-rolled flat products happened in the economies of the region, most significantly in France, Spain, and Germany.

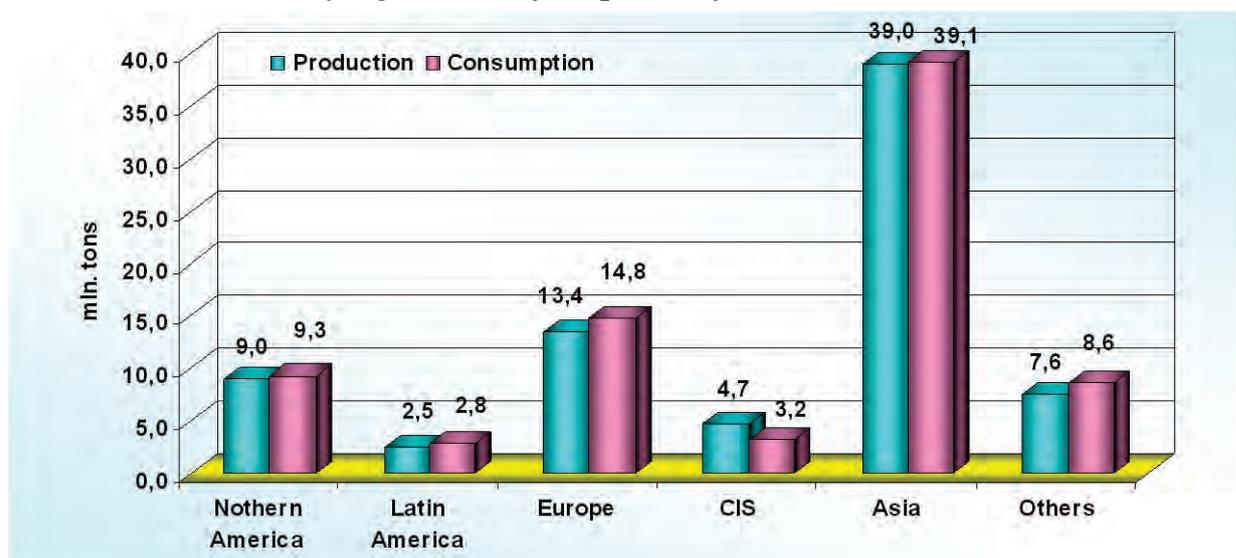
The greatest drop in production and consumption of hot-rolled flat steel occurred in the USA – by 52.8 and 51.8 % accordingly. The USA is just beginning to stabilize the situation with a slight increase in production of steel while reducing the volume of imports of steel products. It is estimated that in May, imports of steel products in the United States dropped to less than 1 million tons, which is significantly lower than that of the previous month (1.1 million tons) and that of May of 2008 (2.27 million tons). In April, imports of hot-rolled flat coils in the U.S. was 113.4 thousand tons, and imports of hot-dipped galvanized flat products was 93,4 thousand tons.

Global consumption of hot-rolled flat products (thickness less than 4,75 mm) 2005-2008 and the first quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1 st quarter of 2009
Total	379,3	419,3	443,8	430,1	77,9
North America	70,1	74,7	69	64,6	9,3
Latin America	15,7	17,0	17,5	16,8	2,8
Europe	85,1	93,7	92,7	89,1	14,8
CIS	18,8	18,9	20,4	18,2	3,2
Asia	153,7	175,9	200,3	201,5	39,1
Others	35,9	39,1	43,8	39,9	8,6

Based on CRU

Balance of production and consumption of hot-rolled flat products (thickness less than 4 mm) By regions in the first quarter of 2009, mln. tons.



Unlike the USA and Europe that experience a decline in automotive industry, China has an increase in car sales. Sales of cars in China in May 2009 reached 1.12 million units, representing a 34% growth as compared to May of 2008. It has been a third month in a row, when the car sales in China has exceeded 1 million units. In May, production of passenger cars in China reached 1.11 million units (a 30% increase). The overall production of passenger cars in the economy in January-May of 2009 totaled 4.84 million units, which is a 11% increase as compared to the same period the previous year, and the sales volumes amounted to 4.96 million units (an increase of 14%). Companies believe that this growth in production and sales is a result of measures designed to stimulate the development of the industry. The increase in production of automobiles has been noticed since the beginning of the year.

The growth of production of automobiles has become a good sign for steel companies which produce automobile body sheet. The economy continues to build new capacities for flat-rolled steel production. Although there is a considerable excess of those capacities for this type of production.

Chinese Ningbo Iron & Steel (Ninggang) completed construction of its first plate mill with capacity of 1.8 million tons per year. However, its launching can take place in early 2010 due to a difficult situation on the market of flat-rolled products. In China, there is considerable excess of capacity to produce flat-rolled products, particularly plates. Construction of some plate mills could be delayed, particularly at Pudong Steel.

Largest manufacturers of hot-rolled flat products (thickness of less than 4,75 mm) 2005-2008 and the first quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1st quarter of 2009
Total	379,3	419,3	442,6	426,2	76,3
China	65,3	92,2	111,3	111,0	23,8
Japan	50,5	51,5	53,9	52,9	7,2
USA	54,8	56,5	55,5	51,2	6,8
Korea	20,1	20,4	22,2	23,4	4,8
Germany	19,6	21,5	21,7	20,4	3,5
France	8,6	8,6	8,3	7,8	1,3
Italy	10,1	10,5	10,1	9,9	1,7

Based on CRU

Largest consumers of hot-rolled flat products (thickness less than 4,75mm) 2005-2008 and the first quarter of 2009, mln. tons.

Economy	2005	2006	2007	2008	1st quarter of 2009
China	65,9	88,5	107,0	108,4	23,7
USA	56,6	60,3	56,8	52,6	7,2
Japan	46,4	46,5	48,8	47,8	7,2
Italy	11,6	13,2	11,9	12,3	2,2
Germany	20,2	22,1	22,8	21,1	3,6
Korea	22,3	23,3	25,5	26,1	5,0
Spain	5,1	6,0	5,8	5,1	0,7
France	9,5	8,9	9,1	9,3	1,5

Based on CRU

The economic crisis did not impede the implementation of the projects last year because they usually take a long time from start to finish – from beginning of construction to the time of putting the unit in operation.

Growth rate of production of hot-rolled flat coils was higher than that of cold-rolled flat coils and galvanized sheets. During 2004-2007 average growth rate was 36.7%, which is 13% higher than that of steel production in general. Since the third quarter of 2008, the growth rate of production of steel products began to decrease and even became negative for certain types of steel, while the production of hot-rolled sheets continued to grow.

In 2008, China, according to some sources, put in operation a large number of hot-rolling mills. For example, 14 mills with total capacity of 40.95 million tons per year were put in operation last year - with 6 of them having capacity up to 3 million tons per year (mill «1580» in Bayuquan, mill 2 in Rizhao, mill «2250» at Shougang Jingtang Co, mill «2250» on Hanbao Steel Co, mill «2300» in Benxi Steel and mill «1780» in Chengde Steel). Most of the new facilities were put in operation in the second half of 2008, particularly in the fourth quarter.

At the end of 2008, the capacity to produce hot-rolled flat products in the economy amounted to 268 million tons per year, including approximately 36 million tons per year (production lines) that were to be taken out of operation.

At the same time, the economy is taking out of operation obsolete (outdated) and unprofitable capacities which can in part balance the influx of products made at new facilities.

Despite the measures that the Chinese government is taking to stimulate the demand, growth rate of economy is declining.

Thus, the market of hot-rolled flat products in China in 2009, is under considerable pressure from the shrinking demand, particularly from the export-oriented companies.

Launching of new hot mills in China in 2008

№ ser/n	Company / mill	Barrel's width, mm	Overall capacity, thousand tons/year	Launching
1	Tangshan Stainless	1580	2200	May, 2008
2	Hebei Zongheng	1250	2000	2008
3	Hebei Xinjin (Wu'an)	1250	2000	May, 2008
4	Hebei Puyang	1250	2000	July, 2008
5	Taishan Steel	1780	800	June, 2008
6	Angang Bayuquan (new dock)	1580	3000	September, 2008
7	Langfang Xingang	1450	2000	2008
8	Chengde Steel	1780	3300	October, 2008
9	Hebei Guofeng (second hot mill)	1450	3000	November, 2008
10	Hanbao Iron & Steel	2250	4500	November, 2008
11	Rizhao	2150	4000	December, 2008
12	Jingtang	2250	5000	December, 2008
13	Bengang	2300	5150	December, 2008
14	Hebei Ganglu (second hot mill)	1500	2000	The end of 2008
	TOTAL capacity of new mills launched in 2008		40950	

Source: MySteel

In the first quarter of 2009, global production of cold-rolled flat products decreased by 31.8 % as compared to the first quarter of 2008 and, according to CRU stood at about 39,7 mln. tons. In the end of the first quarter of 2009, the share of Asia in overall production and consumption of cold-rolled flat products grew again and amounted to 48.6 and 46.5 % accordingly.

China in the first quarter of 2009 also slightly reduced the production of cold-rolled flat products. Production of cold-rolled flat steel in the economy amounted to 9.0 million tons. The two main producers of cold-rolled sheets (China and the United States) account for 32.6% of global production.

The largest consumer of cold-rolled flat steel is also China, with the share in global consumption of almost 23%.

The leading consumers of cold-rolled flat steel are, of course, economies with highly developed machine-building industry – the United States, Japan, Korea, and European economies.

A reduction in production and consumption of cold-rolled products in 2008 in comparison to 2007, came as a result of a volume decrease in the fourth quarter of last year. Negative changes in the global economy led to further reduction of production and consumption of cold-rolled products in the world in the first quarter. Moreover, the production and consumption in the first quarter, according to the CRU estimations, decreased not only in comparison with the first quarter of 2008, but also in comparison with the fourth quarter of last year.

The most significant decline in production and consumption of cold-rolled products happened in the United States and the economies of Western Europe. According to CRU, in the United States the production of cold-rolled flat steel in the first quarter of this year dropped by more than 52% as compared to the same period last year, and consumption - by 51%. The situation in Western Europe turned out a little better where the decline in production was 40.8%, while consumption decreased by 40.1%. The most significant decrease in production and consumption occurred in Spain and France, although the decline of production and consumption in the other major EU economies, was at least 30%.

In Asia, the fall in production and consumption was less significant in comparison with the United States and the EU - by 24-25%. But the measures taken in the Asian economies, project some improvement on the market of flat-rolled products in the second half of 2009 and a more significant growth in 2010.

Global production of cold-rolled products in 2005-2008 and the first quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1st quarter of 2009
Total	196,9	216,7	227,7	220,4	39,7
North America	37,2	38,3	37	34,1	4,8
Latin America	9,4	9,7	10,4	9,3	1,4
Europe	47,7	51,3	49,6	48,1	8,1
CIS	11,7	12,0	12,2	11,1	2,2
Asia	73,7	86,2	98,0	99,1	19,3
Others	17,0	19,1	20,5	18,7	3,9

Based on CRU

Global consumption of cold-rolled products in 2005-2008 and the first quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1st quarter of 2009
Total	196,9	216,7	226,7	220,3	39,8
North America	38,9	42,0	38,5	35,2	5,1
Latin America	8,7	9,4	10,2	9,9	1,6
Europe	47,8	53,0	52,2	50,5	8,6
CIS	10,0	7,7	8,5	8,4	1,5
Asia	76,0	82,6	94,6	95,3	18,5
Others	18,6	21,5	22,8	21,0	4,4

Based on CRU

Largest producers of cold-rolled flat products in 2005-2008 and the first quarter of 2009, mln. tons

Economy	2005	2006	2007	2008	1st quarter of 2009
Total	196,9	216,7	227,7	220,4	39,7
China	21,4	32,8	42,3	44,0	9,0
USA	31,9	33,2	32,2	29,5	4,0
Japan	26,5	26,6	27,3	27,1	5,1
Korea	15,4	16,3	18,1	18,3	3,6
Germany	11,2	12,1	11,6	11,1	1,9
Chinese Taipei	7,2	6,8	6,2	5,3	1,1

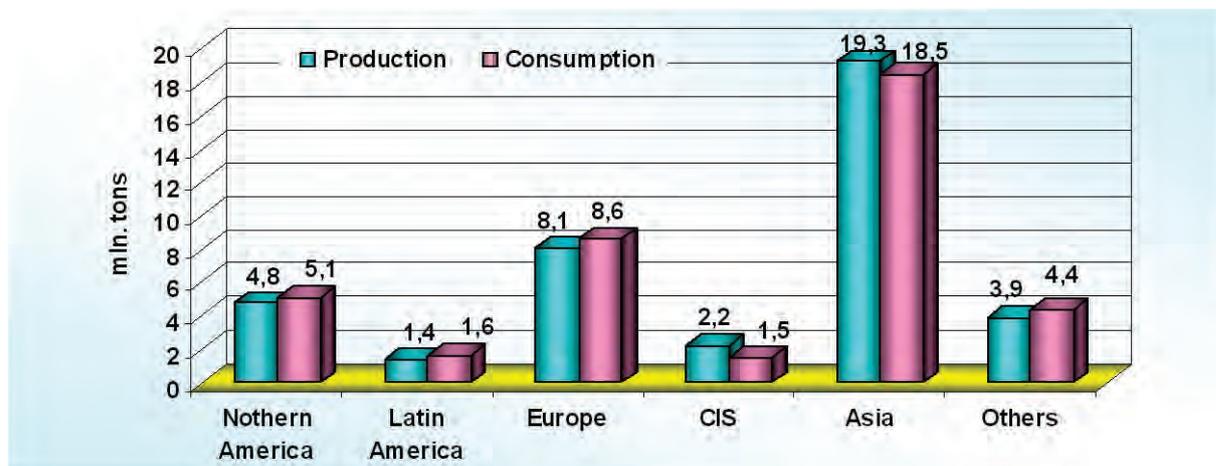
Based on CRU

Largest consumers of cold-rolled flat products in 2005-2008 and the first quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1 st quarter of 2009
China	29,0	35,4	44,7	45,4	9,1
USA	32,7	35,2	32,8	29,6	4,1
Japan	23,1	23,2	24,0	23,5	4,3
Korea	12,3	13,3	14,7	14,5	2,9
Germany	10,0	10,9	10,7	10,2	1,7

Based on CRU

Balance of production and consumption of cold-rolled flat products by regions in the 1st quarter of 2009, mln. tons.



Based on CRU

In the first quarter of 2009, global production of coated sheets, according to CRU, decreased by 32.3% down to 20,0 million t. in comparison with the first quarter of 2008. Main manufacturers of this type of product are the economies of Asia, they account for almost 46% of global output.

The most significant decline in the manufacture of this type of product in the first quarter of 2009 occurred in Latin and North America - by 39.9% and 48.1% respectively. In Europe, the reduction of production was 42.9%. In Asia, with the total decline of 23.5%, a decrease in production occurred in China (15.1%) and Japan (31.5%). The manufacture of this type of product increased by 2.5% in the CIS in the first quarter of 2009.

The largest consumers of galvanized sheets are economies with well-developed automotive industry. The share of Asia in global consumption of coated sheets is about 37.0%. In the first half of 2009 there have been difficulties in the automotive industry in Europe and the United States as well in Japan. Production of automobiles is reducing, which does not leave room for significant changes in consumption and production of galvanized rolled products in the third quarter. Perhaps, the situation will improve in the fourth quarter of this year.

The situation is different in China and Korea. Korean companies are increasing automobile body sheets production. As estimated by Hyundai Hysco, the company's production level of auto body sheets is high - 120-130 tons per month, representing approximately 80% of available capacity. In mid-April, Korea announced about measures to encourage the automotive industry, one of which was a reduction of fees up to 70% when buying new cars. As a result, in May of this year, registration of new vehicles in the economy grew by 45% as opposed to April.

As it has been noted, there is an increase in production and sales of cars in China which will stimulate the demand for auto body sheets, including coated sheets.

Global production of coated sheets in 2005-2008 and the I quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1 st quarter of 2009
Total	98,8	111,3	118,8	113,3	20,0
North America	21,8	23,2	21,1	18,4	2,6
Latin America	3,1	3,4	3,7	3,5	0,5
Europe	29,4	32,6	32,0	30,8	4,7
CIS	3,0	3,5	3,7	3,6	0,9
Asia	33,9	40,4	48,6	47,4	9,1
Others	7,5	6,2	9,7	9,6	2,7

Based on CRU

Global consumption of coated sheets in 2005-2008 and the I quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1 st quarter of 2009
Total	98,8	111,3	116,8	111,5	19,7
North America	19,5	22,1	23,5	20,6	3,2
Latin America	2,9	3,5	3,6	4,2	0,7
Europe	28,8	33,2	35,1	34,0	5,4
CIS	3,0	3,9	4,6	4,7	0,9
Asia	32,8	34,0	39,4	37,8	7,3
Others	7,4	7,4	10,5	10,2	2,2

Based on CRU

Largest manufacturers of coated sheets in 2005-2008 and the I quarter of 2009, mln. tons.

Economy	2005	2006	2007	2008	I q 2009
Total	98,8	111,3	118,8	113,3	20,0
China	7,7	12,4	17,4	16,7	3,3
USA	17,9	19,2	17,9	15,3	2,1
Japan	15,1	15,4	16,3	15,8	2,9
Korea	5,9	7,0	8,8	8,6	1,7
Germany	7,7	8,3	8,2	7,6	1,3

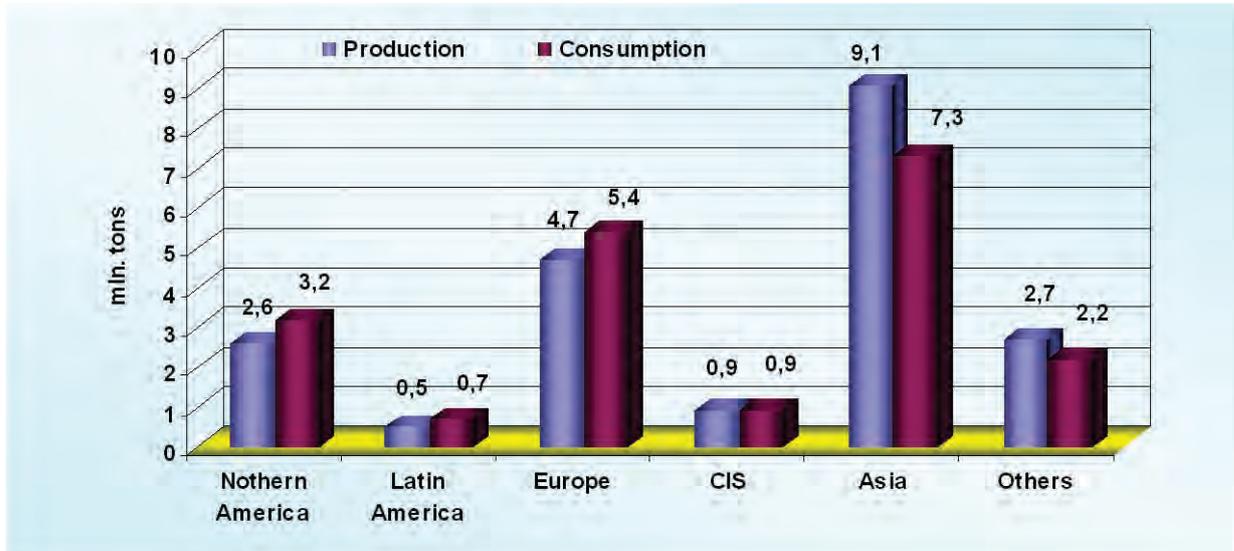
According to CRU

Largest consumers of coated sheets in 2005-2008 and the I quarter of 2009, mln. tons.

Region	2005	2006	2007	2008	1 st quarter of 2009
USA	19,5	22,1	19,1	16,1	2,3
China	11,9	13,5	16,6	15,0	3,2
Japan	9,2	10,5	11,1	10,4	1,7
Germany	7,3	8,0	8,4	8,1	1,4
Korea	3,7	4,0	5,1	4,6	0,9
Spain	3,7	4,2	4,4	4,2	0,6

Based on CRU

Balance of production and consumption of coated sheets by regions in the first quarter of 2009, mln. tons.



Based on CRU

11.4. APEC Role in the Global Production of Ferrous Metals

The role of APEC economies in the global steel production is determined by the fact that the organization is composed of the leading producers of ferrous metals in the world. Primarily, this is China, which holds a leading position in iron and steel industry and the global steel market is largely dependant on the development of the industry in this economy. Moreover, Japan, the United States, Russia and Korea as part of APEC are ranked 2nd, 3rd, 4th and 6th in the world respectively in steel production. Significant quantities of steel are produced in Canada, Chinese Taipei and Mexico. Other economies produce much less steel. And three economies do not produce ferrous metals at all - Hong Kong, China, Brunei Darussalamand Papua New Guinea.

Production of steel in APEC economies grew significantly between 2000 -2007. And if in 2007, according to WSA, steel production in APEC economies totaled nearly 724 million tons, yet in 2000 it had been at 507 million t. The further estimation of APEC share and the global production was based on WSA.

APEC share in the global steel production increased from 59.8% in 2000 to 68.3% in 2007 and 68.7% in 2008 (preliminary data).

Many APEC economies significantly increased the production of steel in the period under review. The most significant growth of steel production occurred in China, which ranked as number one manufacturer of steel even in 1996. And if between 1995-2000 growth rate of steel production in the economy was relatively small (33%), later on production of steel in the economy increased very rapidly. In 2008, China had 502 million tons of steel, which is almost 4 times more than in 2000.

The role of China in the global steel production rose drastically in 2000-2008. If back in 2000, China's share in the global steel production was 15%, in 2008 it reached nearly 38%. China's role in the global production of ferrous metals will obviously increase significantly in 2009 amid the crisis, because it is the only major producer of steel that has kept the same level of production in January-May as compared to the previous year. In January-April of 2009, China's share in the global steel production reached 48.2%. And even with the fall of steel production in the other APEC economies, its role in production of ferrous metals is likely to be higher than in 2008.

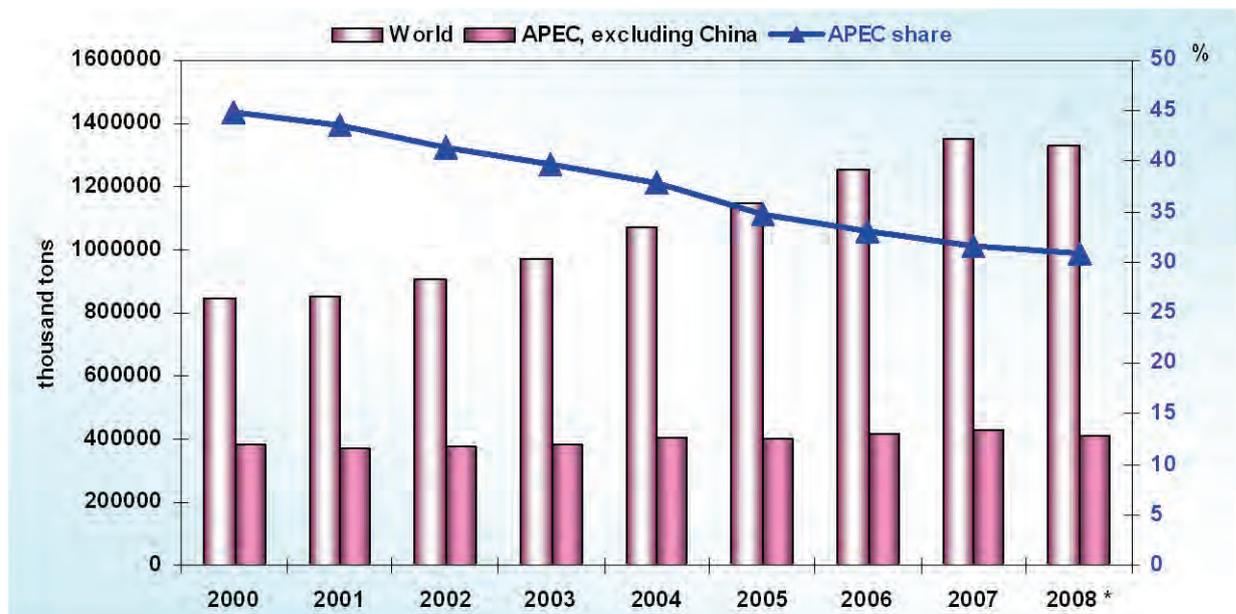
Global steel production (thousand tons) and APEC share in steel manufacturing (%)



*Preliminary data

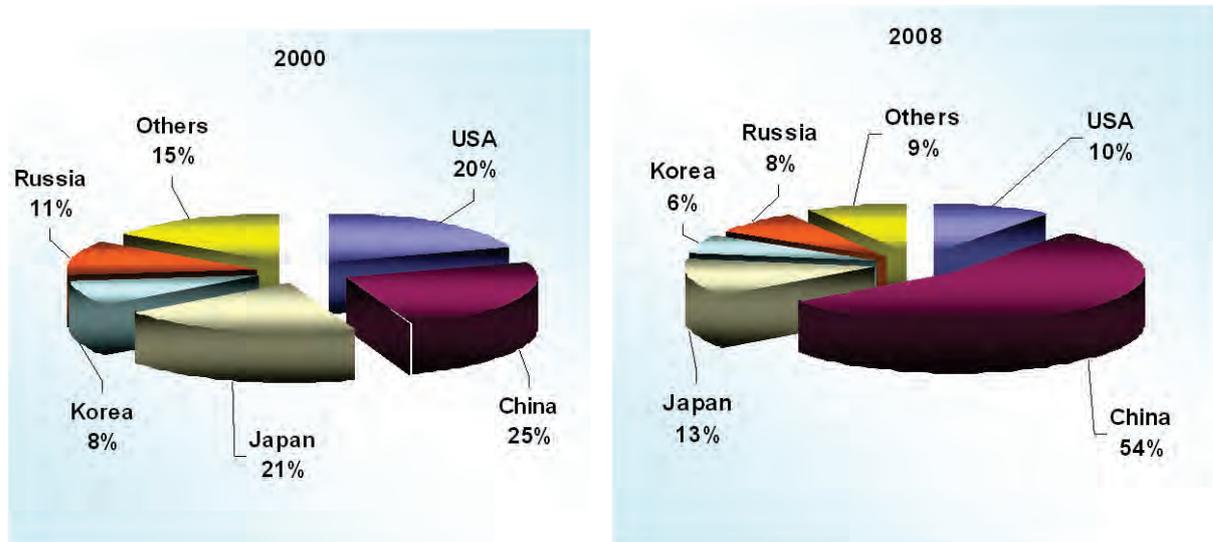
While China's share in the global steel production is increasing, the shares of the other APEC economies have been on a downward trend. If back in 2000, APEC economies (excluding China) made almost 45% of global steel production, in 2007 it reached 31.6%, and in 2008 (preliminary data) - 31%. And this is despite the fact that in some APEC economies steel production increased in 2007 as compared to 2000. This is primarily Japan, Russia, Korea, Chinese Taipei, Thailand, Malaysia. Steel production grew in Mexico, Chile and other economies while the production of steel in the United States declined considerably. Steel manufacturing in Canada decreased slightly.

APEC share excluding China in the global steel production, %



The structure of steel production by APEC economies considerably increased the proportion of China while reducing the share of others. If in 2000 the share of China in the structure of steel production in APEC was 25.1%, in 2008 it reached 54.9%.

APEC economies share in steel production in 2000 and 2008



It should be noted that the growth of steel production in APEC economies took place along with a significant increase in production capacities due to the construction of new large steel plants. In particular, it is true of China which created new steelmaking and rolling capacities within the existing productions. However, this led to a problem of excess capacity in China. In 2008, steel smelting capacity in the economy exceeded 600 million tons a year with a production level at 502 million tons. There is excess production of ferrous metals, particularly flat-rolled products in the economy. And this is despite the fact that China is closing outdated and unprofitable capacities.

Capacities for steel production in China have increased averagely by 50 million tons per year in recent years. Mainly, the economy has put in operation equipment for producing flat-rolled products.

As it was stated, at the end of 2008 the capacity to produce hot-rolled flat products amounted to 268 million tons per year, including approximately 36 million tons per year (production lines) that are to be taken out of use.

Currently, the economy is implementing several large projects, but their completion, particularly by Caofeidian Shougang Group and Bayuquan Group, and Ansteel Group would have to be slightly postponed due to a low demand and low prices for metal products.

There are some progressive changes that are worth noting, in the steel industry of APEC economies in recent years. Presently, Russia is the only economy of APEC that has open-hearth steel production. A significant decline in production of open-hearth steel is expected in Russia in the coming year. Most smelters in this economy have already stopped production of open-hearth steel.

The major part of steel manufactured in APEC economies is made by continuous casting method. With an average share of continuous casting of steel in the world at 92% in 2007, among APEC economies, a lower proportion was observed in Peru (88.5%) and Russia – 71.1%. In most APEC economies, the share of continuous casting steel exceeds 99% or stands at 100%.

APEC economies have a leading role in the production of metal products. Moreover, the APEC share in the production of metal products is higher than in the production of steel. In 2000, APEC share in the production of hot-rolled products amounted to about 62.8%, in 2007, it already reached 72.9%. The share of China rose from 16.6% to 42.5%. On the contrary, the share of APEC excluding China in 2007 fell as compared to 2000 and stood at 30.4% (46,1%).

Hot-rolled production in the world

	2000	2001	2002	2003	2004	2005	2006	2007
World, mln. tons.	789,7	765,3	832,3	912,1	1005,0	1071,1	1212,2	1320,8
APEC, mln. tons.	495,7	502,9	555,4	617	690,8	756,8	866,4	962,7
APEC share in the global production, %	62,8	65,7	66,7	67,6	68,7	70,6	71,5	72,9
Share of China, %	16,6	20,6	23,1	26,4	29,6	34,7	38,5	42,5
APEC excluding China, thousand tons	364,3	345,4	363,3	376,1	393,6	385,4	399,6	400,9
APEC share excluding China, %	46,1	45,1	43,6	41,2	39,2	36,0	33,0	30,4

Based on WSD

China increased production of finished steel products in 2007 as compared to 2000, by more than 4 times to a level of 561 million tons.

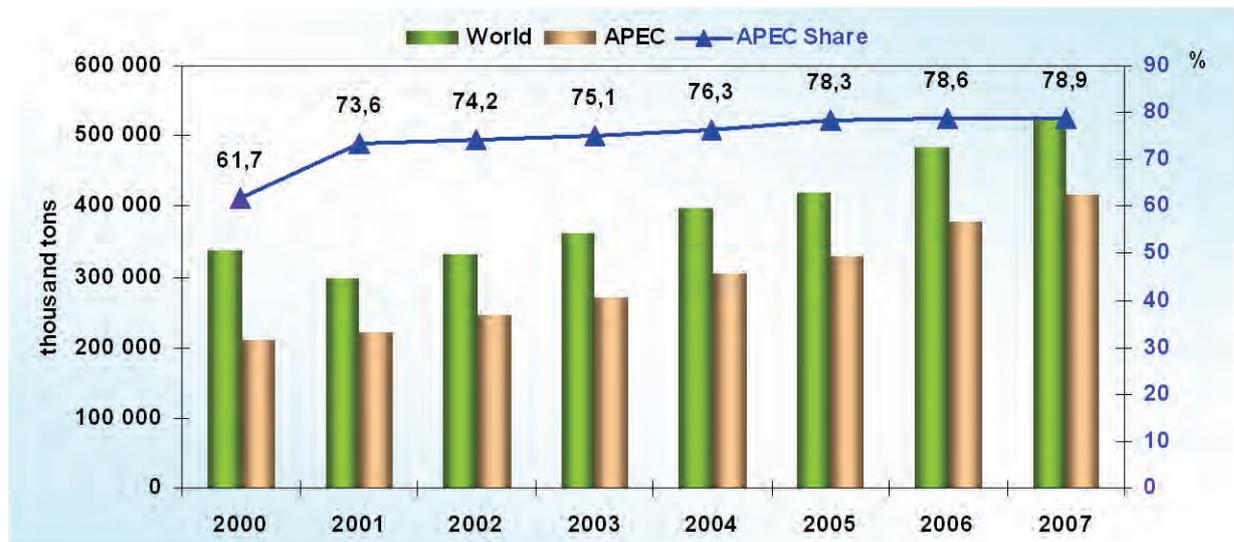
In addition to China, other major producers of hot-rolled steel products in APEC are Japan, the United States, Russia, and Korea. But in these economies, production increased overall only by 9% in 2007 as compared to 2000. As a consequence, share of these economies in hot-rolled steel production in the world fell from 36.6% to less than 24%.

China's share in the structure of hot-rolled steel production in APEC increased from 26.5% in 2000 to more than 58% in 2007. The data about China is based on the level of production of finished steel products.

The share of Japan, the United States, Russia and Korea in the structure of hot-rolled steel production in APEC fell from 58.3% in 2000 to 32.7% in 2007.

The share of the other APEC economies in the hot-rolled steel production had a tendency to decrease. This was due to the fact that the production in China grew more rapidly in comparison with the other APEC economies.

A similar trend is seen China's production of profiled and flat-rolled steel. Its share in the world production of profiled and flat-rolled steel increased substantially while other economies were reducing the proportion of their production.

Global flat-rolled production (mln. tons.) and APEC's share in the global production (%)

Based WSD

The share of APEC economies in the structure of long products production in the world was 78.9% in 2007 which is significantly higher than that in 2000 – 61.7%.

China's share the global production of long products increased from 22.4% in 2000 to 50.6% in 2007 mainly due to a rapid development of long products production in China. The production of long products in the economy increased by 4 times or by more than 201 million tons in 2007 as compared to 2000.

Japan, U.S., Korea and Russia are among other economies that have large volumes of long products production. Besides, production of long products in North America also part of APEC almost did not change in 2000-2007. The production of long products grew in Russia, Japan, and Korea. But their share in the global production of long products, as well as in its total output in APEC has been steadily declining.

APEC Long Products Output, thousand tons, and APEC Share Excluding China, %



The share of APEC is increasing in the production of flat-rolled products. The role of APEC and China has been especially noticeable. If in 2000 the share of APEC in the global production of hot-rolled flat products was 62.2%, in 2007 it reached 78.3%. This situation is determined by higher rates of production of flat-rolled products in China as compared to the other economies in the world. In China, flat-rolled production increased by 5.5 times, while in the world in general – by less than 54%. That is why China's share in the global production as well as in the production of hot-rolled flat products in the APEC grew in 2000-2007. The share of other economies, even as they increased production, tended to decline.

Production of hot-rolled flat products in the world and APEC *

	2000	2001	2002	2003	2004	2005	2006	2007
World, mln. tons.	427,2	372,7	386,0	429,2	497,2	518,2	598,4	656,4
APEC, mln. tons.	265,8	264,0	266,2	314,8	359,6	397,6	450,9	514,2
APEC's share in the world, %	62,2	70,8	69,0	73,3	72,3	76,7	75,4	78,3
China's share in the world, %	11,9	16,4	13,5	22,0	24,8	32,2	35,9	42,1
China's share in APEC, %	19,0	23,1	19,5	30,0	34,3	42,0	47,6	53,7
Japan's share in APEC, %	22,7	22,2	23,1	20,5	18,4	16,4	14,6	13,5

**In Russia and China the data includes production of rolled products in general*

Based on WSD

The growth of steel production in APEC economies was naturally accompanied by a rapid increase in consumption. Consumption of ferrous metals in China grew considerably in

2000-2007, which was the main cause for increase of APEC' share in the world's consumption of steel.

China's role in global steel consumption has grown significantly in the recent years and, according to WSA, was more than 32% in 2007. However, the share of other APEC economies in the global steel consumption increased slightly - from 62.8% in 2000 to 65.7% in 2007.

The share of other major consumer of steel in the world, including the United States, Japan, Korea and Russia, had a tendency to decrease.

It should be noted that the growth of steel consumption in China brought it closer the European economies in per capita consumption. In general, it is characteristic for most APEC economies to have high per capita consumption of steel, particularly it is true of Korea, Japan, Singapore, Chinese Taipei, Hong Kong, China, Canada, where it ranges from 547 to more than 1100 kg / person.

Consumption of steel in the world (on steel ingots basis)

	2000	2001	2002	2003	2004	2005	2006	2007
World, mln. tons.	845,0	855,3	910,9	971,9	1068,8	1134,5	1242,4	1317,3
APEC, mln. tons.	530,7	537,1	588,1	631,5	708,9	768,2	828,4	865,8
APEC's share in the world, %	62,8	62,8	64,6	65,0	66,3	67,7	66,7	65,7
China, mln. tons.	138,1	170,6	205,7	258,6	296,6	362	393,4	426,6
China's share, %	16,3	20,0	22,6	26,6	27,7	31,9	31,7	32,4
China's share in APEC, %	26,0	31,8	35,0	40,9	41,8	47,1	47,5	49,3
Japan's share, %	9,4	8,8	8,1	7,9	7,5	7,3	6,7	6,5
USA share, %	15,8	13,4	13,0	10,9	11,6	10,0	10,3	8,7
Korea's share, %	4,7	4,6	5,0	4,9	4,6	4,3	4,2	4,4
Russia's share, %	3,5	3,7	3,2	3,0	3,0	3,1	3,3	3,6

Based on WSD

However, in several APEC economies, per capita consumption remains low. It is particularly true of Indonesia (35 kg / person), Philippines (45 kg / person), Peru (67 kg / person). In some economies, per capita consumption stands between 120 and 300 kg /person.

Therefore, in the long run in a number of APEC economies can expect further growth of steel consumption which primarily applies to China, as well as Indonesia, Russia and several other economies.

11.5. APEC Role in Global Trade in Ferrous Metals

As APEC economies occupy leading positions in the global production and consumption of ferrous metals, they are also leaders in foreign trade of metal products. First of all, it is determined by the fact that Russia, Japan, and in the past few years, China have leading positions in the global exports of ferrous metals. At the same time China, which just recently was considered a net importer of steel products, has become the world's leading exporter.

Global exports of semi-finished products and finished metal products

	2000	2001	2002	2003	2004	2005	2006	2007
World, mln. tons.	306,5	300,4	313,1	333	366,2	371,3	418,3	434,5
APEC, mln. tons.	117,2	108,4	118,8	123,3	139,3	147,5	180,4	197,3
APEC's share, %	38,2	36,1	37,9	37,0	38,1	39,7	43,1	45,4
China, mln. tons.	11,2	7,3	6,6	8,2	20,1	27,4	51,7	66,4

China's share in the world, %	3,6	2,4	2,1	2,5	5,5	7,4	12,4	15,3
China's share in APEC, %	9,5	6,7	5,6	6,7	14,4	18,6	28,7	33,6
Japan's share in the world, %	9,3	9,8	11,2	10,1	9,5	8,6	8,3	8,2
Russia's share in the world, %	9,0	8,5	8,8	8,5	8,3	8,3	7,5	6,8
Korea's share, %	4,5	4,7	4,1	4,2	4,1	4,3	4,3	4,2

Based on WSD

The increase in production of ferrous metals in China did not only make it possible for the economy, to a large extent, meet their needs in most products, excluding the products with higher added value, but also significantly increase export supplies. In 2007, China brought more than 66 million tons of steel products to the world market including semi-finished products. This is almost six times more than China's supply of steel products to the world market in 2000. As a result, China's share in world's exports rose from 3.6% in 2000 to 15.3% in 2007.

Chinese steel companies have an aggressive export policy, they are actively expanding its presence in all regional markets abroad. The expansion of Chinese steel products in the world market has been the subject of antidumping investigations in different economies, including the USA, the EU, Russia, and others. To some extent, it led to a reduction of Chinese steel products in the markets of several economies, including the EU, the United States. But in the recent years China has sought to limit the exports of products with low added value and to increase the supply of products with high added value. Rebates of VAT in the exports of products with low added value, in particular, valves, rods declined at first and then were totally eliminated. Moreover, duties have to be paid for exports of these types of products, thus limiting their supply to the world market. However, during crisis the government again imposed a VAT refund on some types of steel, including hot-rolled flat coils.

But even this measure did not lead to increased exports of steel products in 2009. China is reducing exports and increasing imports. Besides, China is the only economy among other world's leading producers of ferrous metals, that is increasing the production of steel.

There are other major suppliers of steel products to the world market among APEC economies. This is primarily Japan and Russia. But the share of these economies in world trade in ferrous metals is reducing due to the growth of exports from China.

Global imports of semi-finished products and finished metal products

	2000	2001	2002	2003	2004	2005	2006	2007
World, total, mln. tons.	299,4	292,9	313,1	332,5	362,5	363,6	409,7	426,3
APEC, mln. tons.	136,5	126,6	144,0	150,2	165,3	156,7	165,0	154,9
APEC's share in imports, %	45,6	43,2	46,0	45,2	45,6	43,1	40,3	36,3
China, mln. tons.	20,9	25,6	29,3	43,2	33,2	27,3	19,1	17,2
China's share in imports, %	7,0	8,7	9,4	13,0	9,2	7,5	4,7	4,0
S Korea, mln. tons.	11,4	10,8	14,2	15,6	17,7	18,8	22,4	26,2
Korea's share in imports, %	3,8	3,7	4,5	4,7	4,9	5,2	5,5	6,1
USA, mln. tons.	35,2	28,0	30,3	21,6	32,8	30,2	42,2	27,7
The US share in imports, %	11,8	9,5	9,7	6,5	9,0	8,3	10,3	6,5

Based on WSD

As a result, the share of APEC in global exports of steel products, including semi-finished products, rose from 38% in 2000 to 45.4% in 2007. The share of China increased from 9.5% in 2000 to 33, 6% in 2007 in total exports of steel products from the APEC.

However, the role of APEC economies in the global imports of steel products including semi-finished products, is decreasing. First of all, this occurred as a result of China's reduction of imports of ferrous metals in 2000-2007. However, the situation slightly changed during the first months of 2009. Moreover there was a considerable reduction of imports of steel products into the United States, the share of this economy in the global imports declining from 11.8% in 2000 to 6.5% in 2007. During the economic crisis, there was a considerable reduction of production and consumption the United States in the beginning of 2009. As a result, the United States sharply reduced imports of steel products during this period.

Korea has greatly increased its imports of steel products in the recent years. Moreover, the economy's share in the global imports rose to 6.1%. Besides, other APEC economies, including Indonesia, Thailand, Viet Nam, Chinese Taipei, and Canada supply a significant amount of steel imports. Russia amid the growth in demand in the domestic market increased imports of steel products in 2006-2007, but significantly reduced its purchase in 2008. The share of this economy in the global imports is quite insignificant, it reached its maximum value in 2007 (1.7%).

The main challenge to world trade in ferrous metals has been fast growth in exports of steel products from China in the past two years. However, imposition of new restrictions on exports of production with low added value, including the semi-finished products, led to a decline in export volumes.

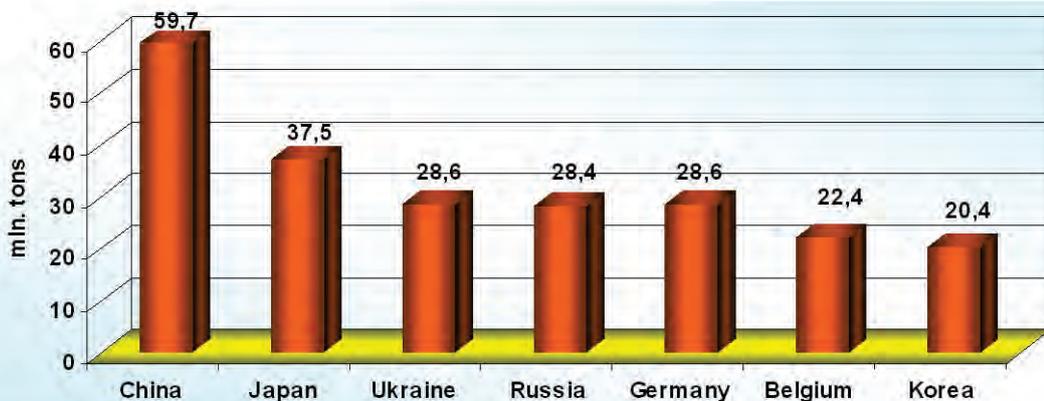
China does not want to be given a raw-export role. The economy's customs policy aims at reducing the exports of semi-finished products and raw materials. Its objective is to export high-added value products and keep strategic metal stocks inside the economy.

Thus, according to the results of 2008, deliveries of steel products from China to the world market decreased by 12.6% and amounted to 59.7 million tons.

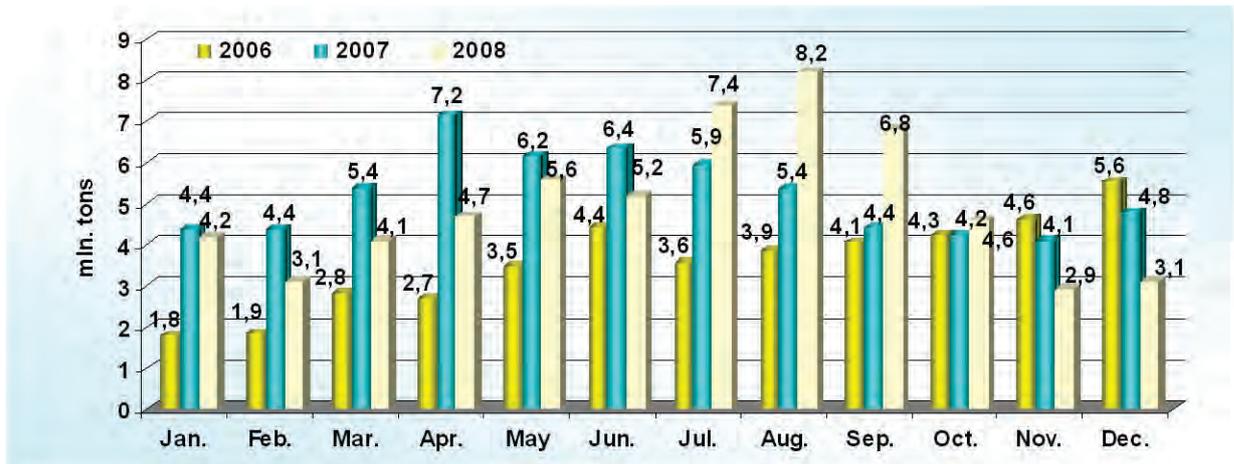
Other major suppliers of steel products to world markets are Japan, Ukraine, Germany and Russia. In 2008, Japan increased exports of steel products by 3.7% to 37.5 million t. The shipments from Germany decreased by 4.1% down to 28.6 million tons.

APEC economies, despite a slight reduction of exports in 2008, have maintained a leading position both in the overall volume of exports and imports of steel products, and in foreign trade in certain types of rolled products. However, China has the greatest role.

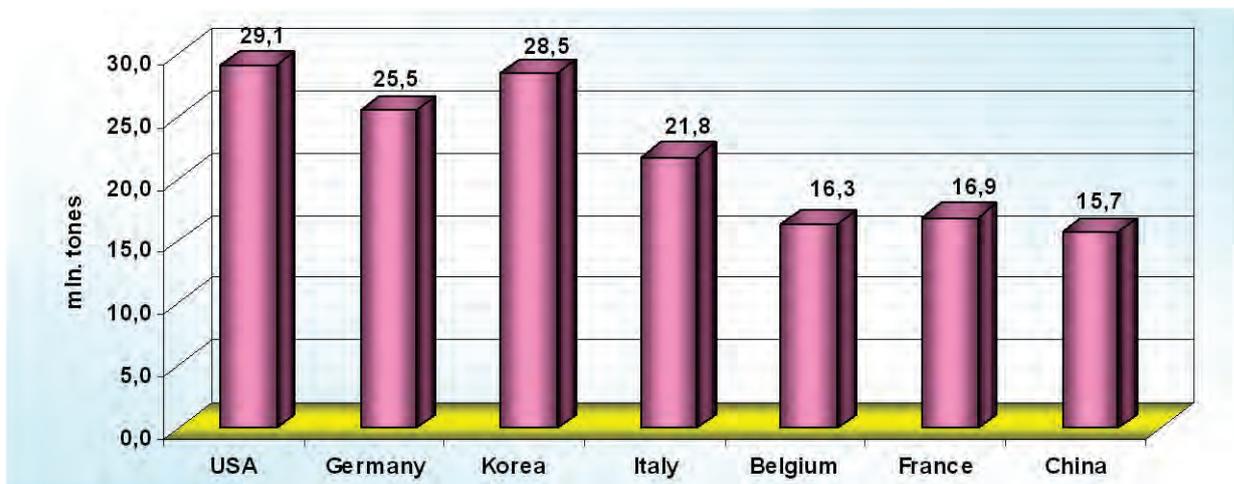
Main exporters of steel products (including semi-finished products) in 2008, mln. tons.



Exports of metal products from China in 2006-2008, mln. tons.



Main importers of steel products (including semi-finished products) in 2008, mln. tons.



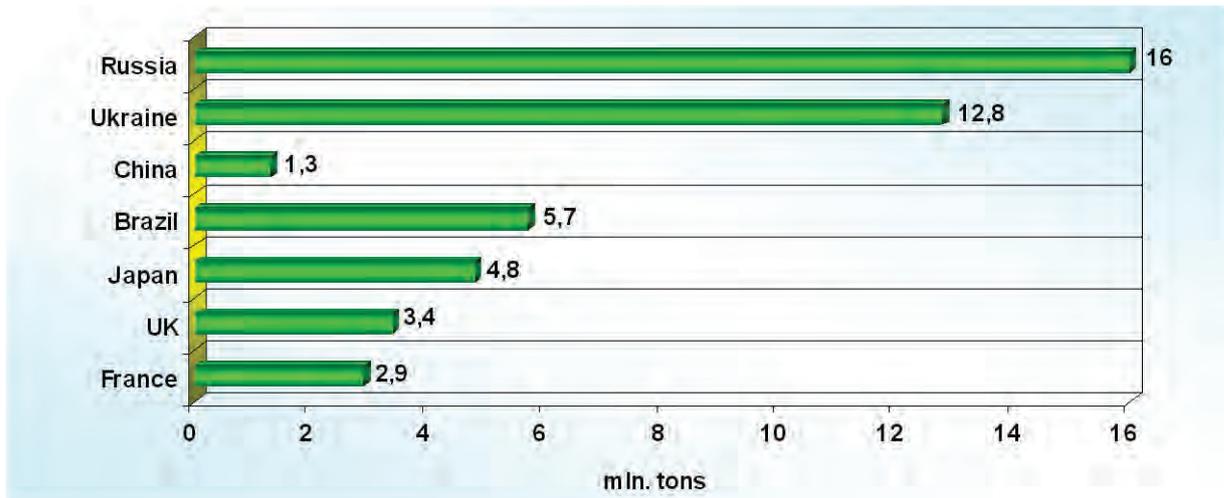
US steel products import and average import prices (\$/t)



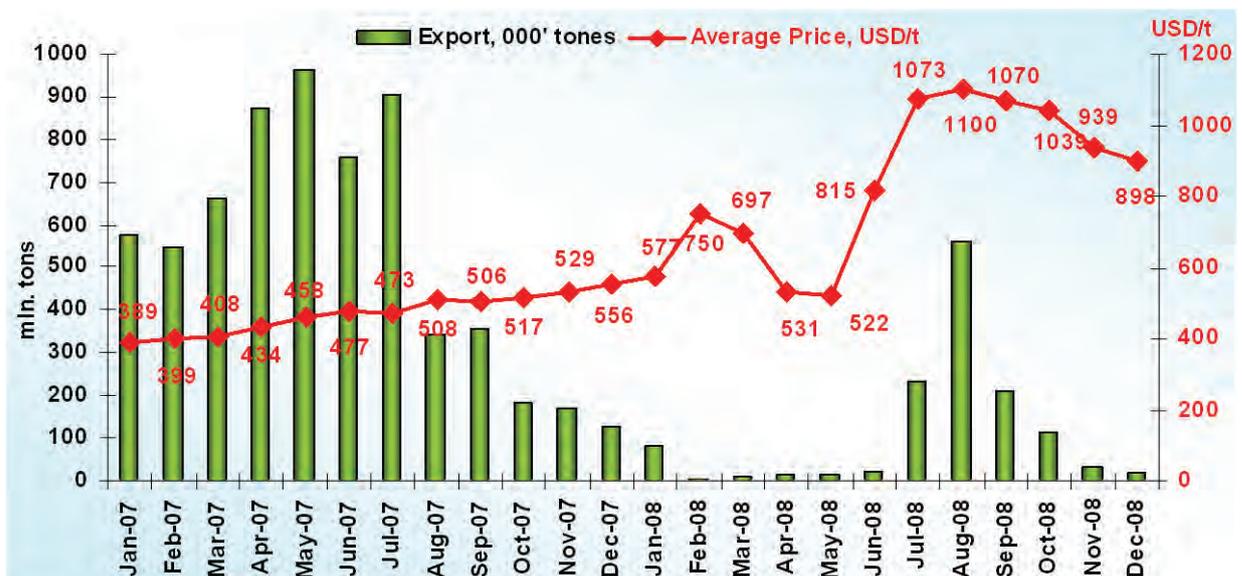
Import of metal products in China has been reduced by 9% in 2008 in comparison with 2007 and totaled 15.7mln. tons slightly more than 1 mln. tons of metal products was imported in December.

Russia is leading among global exporters of semi-finished products. Japan also supplies significant volumes of semi-finished products to the global market. In recent years China has seriously reduced the supply of semi-finished products to the global market. In 2008 the economy exported only 1,3 mln. tons (more than 5 mln. tons in 2000). A number of APEC economies are the largest importers of semi-finished products, including Korea, Chinese Taipei and USA.

Main global semi-finished products suppliers (ingots, billets, slabs, blooms) in 2008, mln. tons



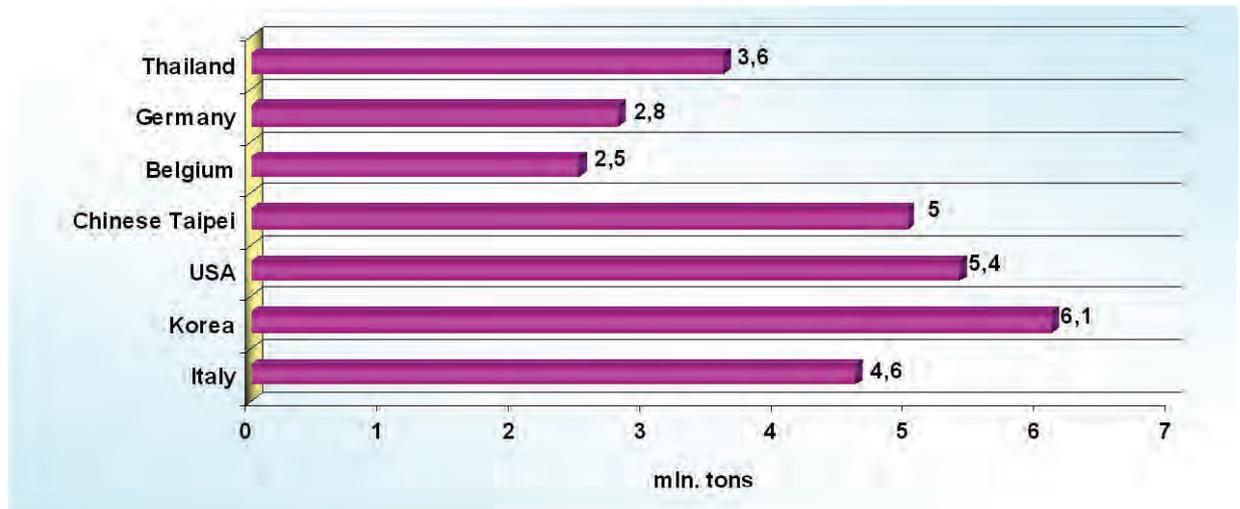
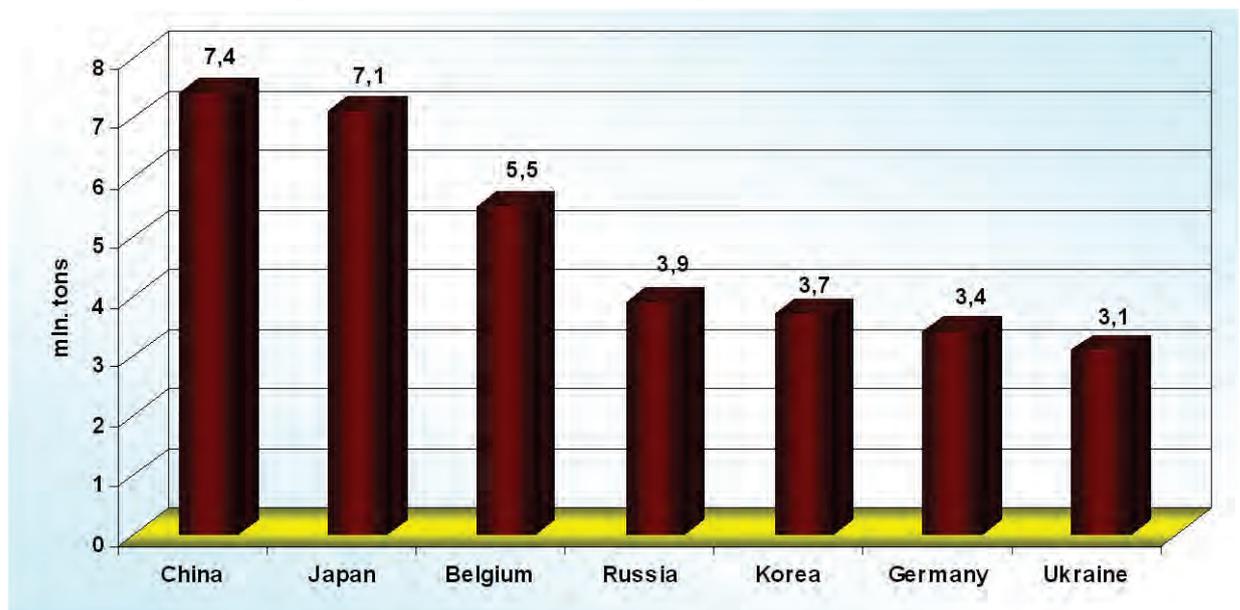
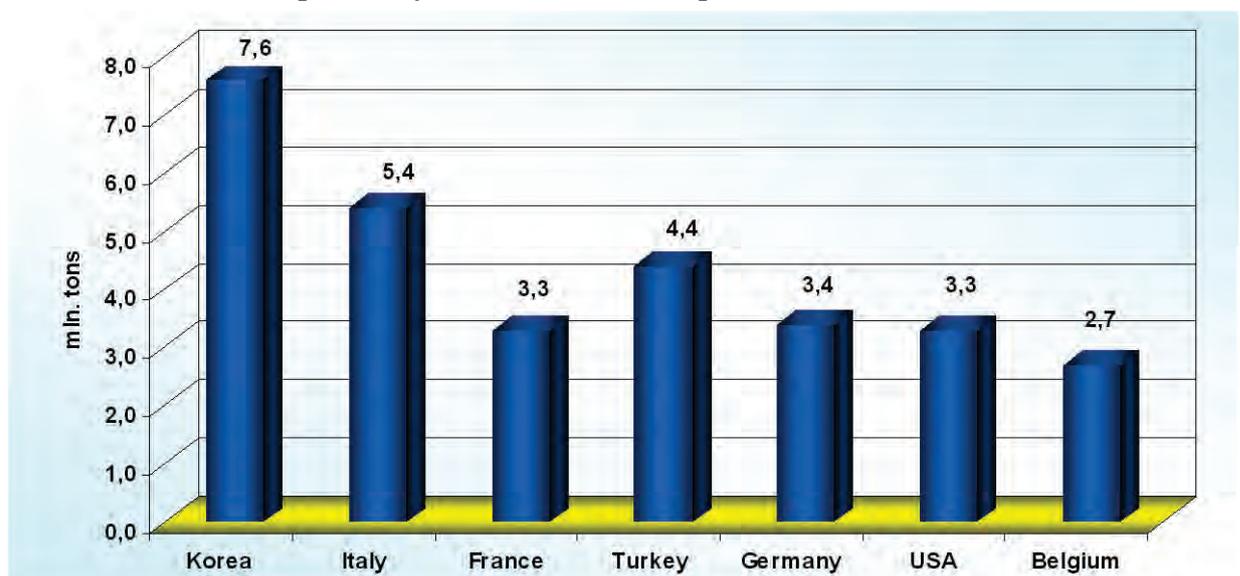
Chinese semi-finished products export (thousand tons) and average export prices (\$/t)



According to RUSMET, global trading of thin hot rolled metal in 2008 totaled 57,3 mln. t, which is 5.1% lower than 2007 (60,4 mln. t).

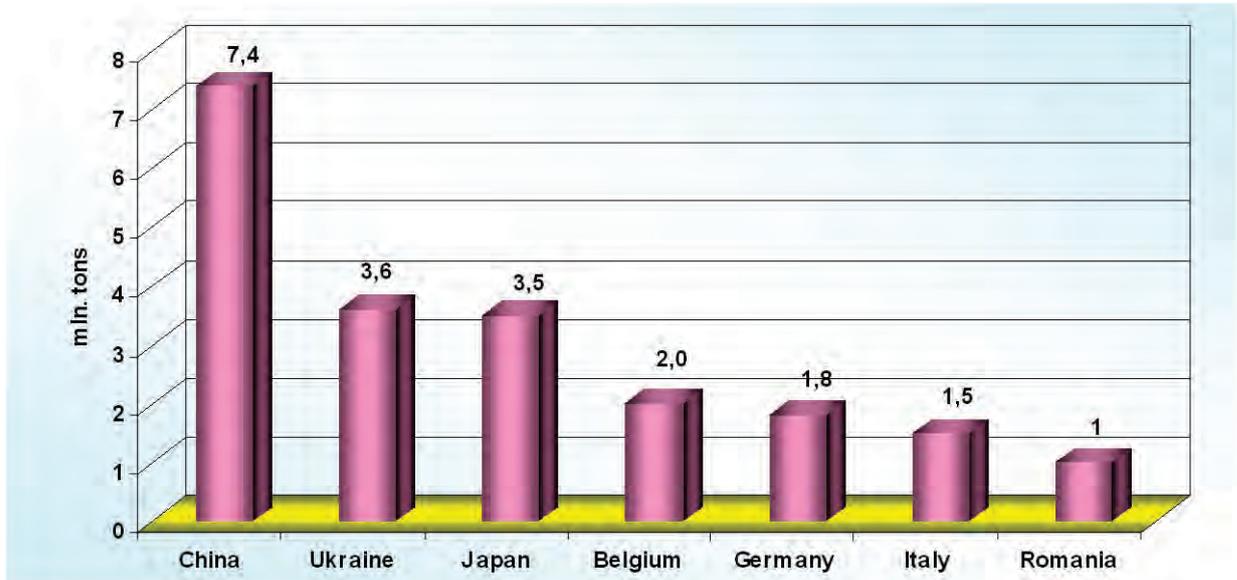
Market supply leaders of thin hot rolled metal are China and Japan. In 2008 China reduced export of this type of products by 22.7% to 7,4 mln. t, and Japan increased export by 0.1% to 7,1 mln. tons.

Korea is the largest consumer of thin hot rolled metal. In 2008 in comparison with 2007 thin hot rolled metal import to the economy was up by 1.0% and totaled 7,6 mln. t (7,5 mln. t in 2007).

Main semi-finished products importers in 2008, mln. tons*Main exporters of thin hot rolled steel products in 2008, mln. tons**Main importers of thin hot rolled steel products in 2008, mln. tons*

Global trading of thin hot rolled metal, according to RUSMET, in 2008 totaled 34,2 mln. t, which was 1.3 % higher than 2007 (33,8 mln. t). China is a leading exporter of thin hot rolled metal, despite the fact that in 2008 China reduced the export supplies by 14.6 % to 7,4 mln. tons.

Main exporters of thick hot rolled steel products in 2008, mln. tons



Japanese export of thick hot rolled steel products (thousand tons) and average export prices (USD/t)

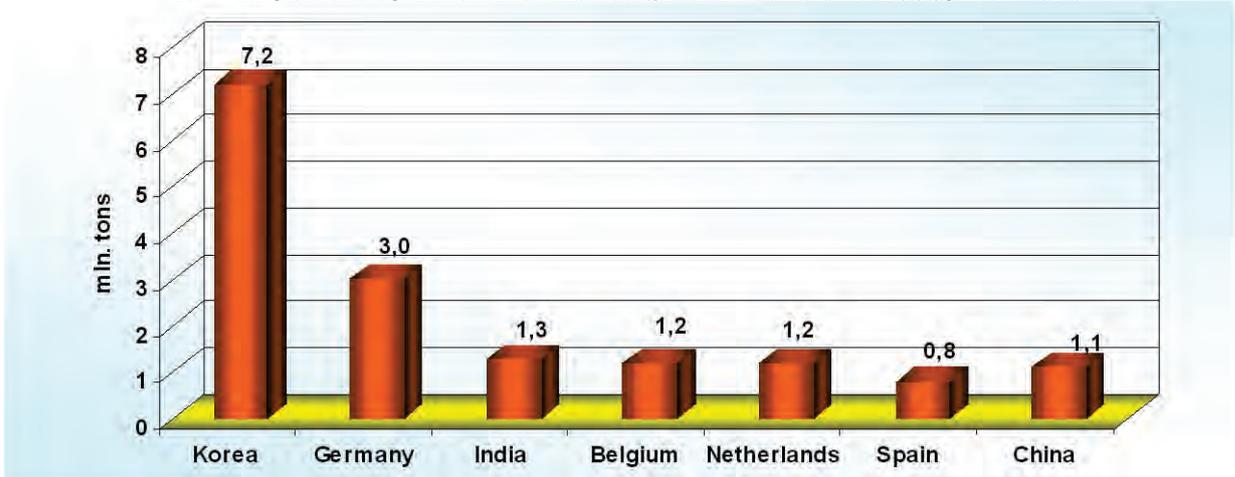


Based on the yearend results, Korea is the leading importer of thick rolled metal. During 2008 the economy purchased 7,2 mln. tons of this type of products, which is 1.6 times more than the purchased volume in 2007 (4,5 mln. tons)

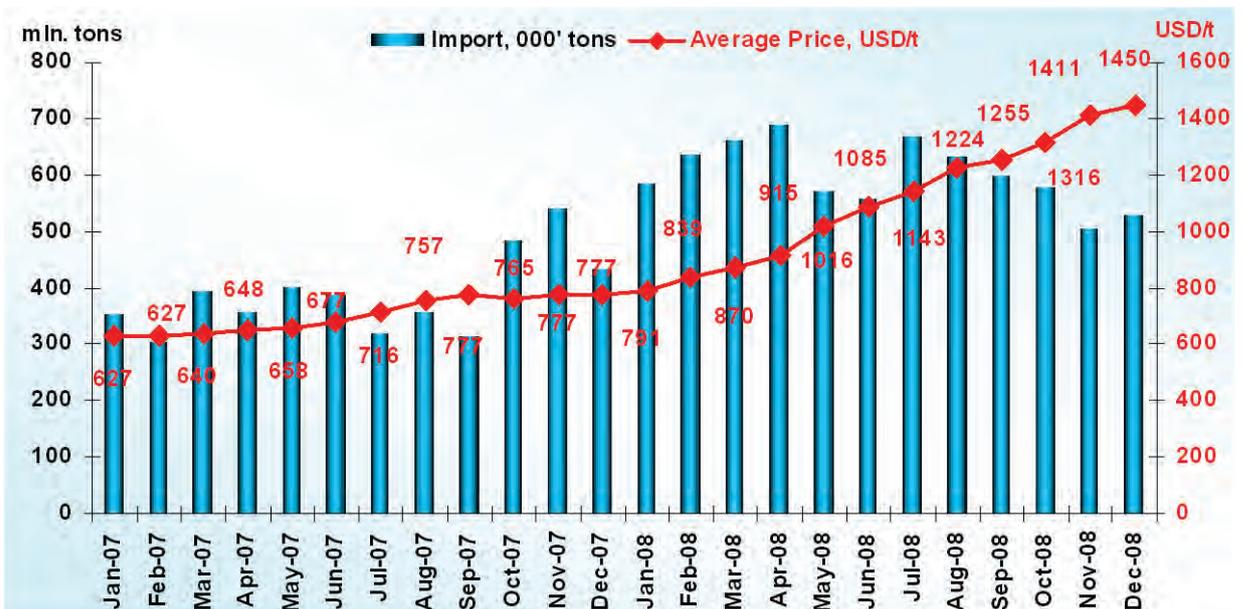
According to RUSMET, global international market of cold rolled metal in 2007 (excluding coated sheets) increased by 1.7% to 28,4 mln. t in comparison with 2007. The largest suppliers of such kind of products in the international market are Korea and Japan, which total 24.0 % of the global trade.

In 2008, Japan increased the supply of cold rolled metal by 4.2% to 3,2mln. t on the international market, while Korean export growth totalled 12.4% (3,6mln. tons). Russia reduced the international market supply of cold rolled metal in 2008 by 18.9 % to 1,6 mln. tons

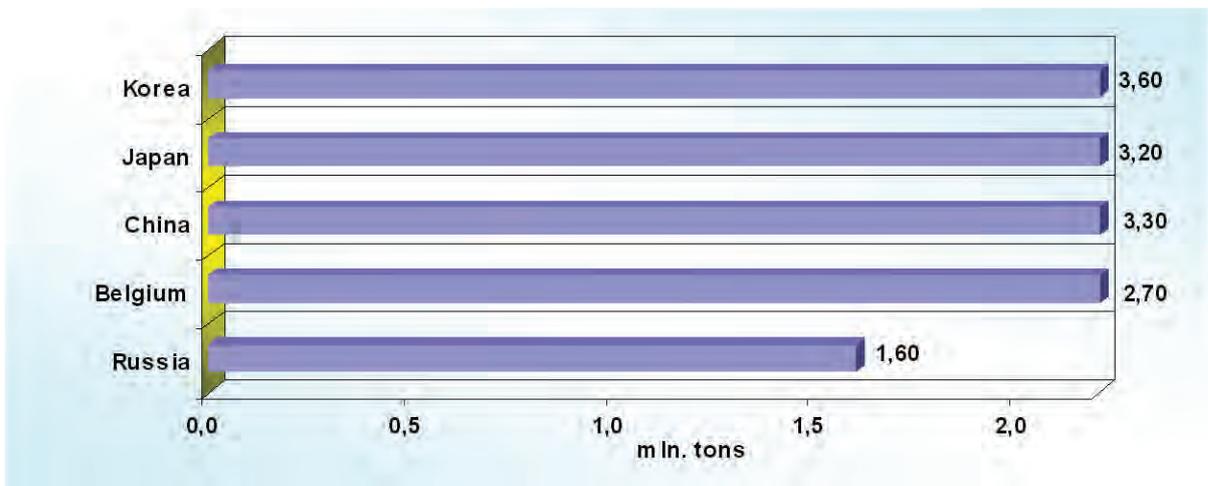
Main Importers of Thick Hot Rolled Steel Products in 2008, mln. tons



Korean import of thick steel rolled products (thousand tons) and average import prices (\$/t)



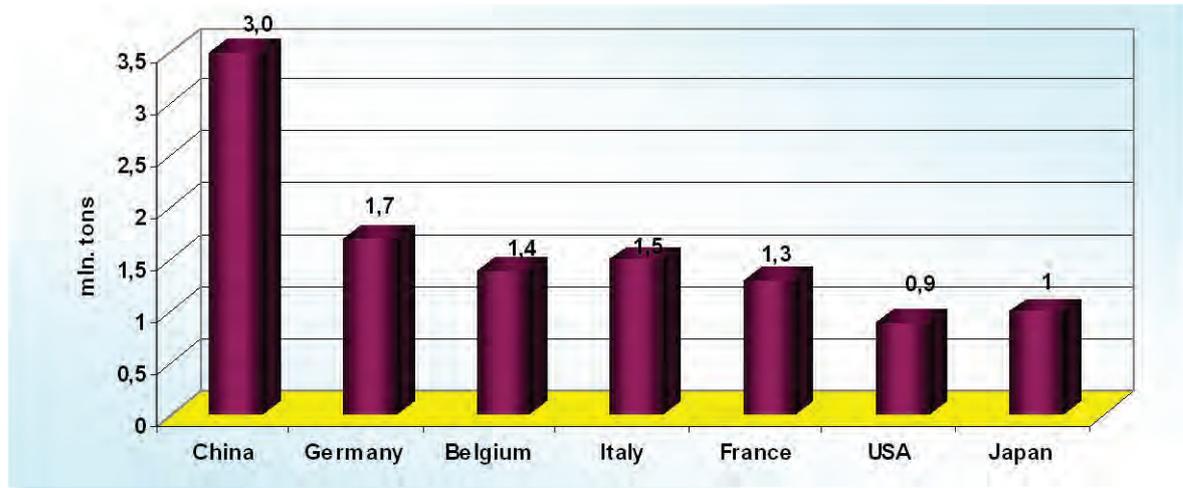
Main exported of cold rolled products in 2008, mln. tons



China is the largest importer of cold rolled metal sheets. Although, in the recent years China has been reducing its import volume of this kind of products due to expansion of its own production facilities. In 2006 China imported 44 % less of cold rolled products in comparison

with 2005 which totaled 4,2 mln. tons. As a result of 2007, the import dropped again by 4.1 % to 4,0 mln. t in comparison with 2006. In 2008 the import was reduced by 14.0 %.

Main cold rolled steel sheets importers in 2008, mln. tons



12. FERROUS METALS PRICE TRENDS*

Global economic crisis has badly affected prices on metal products on all regional markets. The price peaks in July-September 2008 turned out to be historical maximum, were followed by price drop on all metal products. A small growth in the beginning of this year was replaced by another price fall which stopped in April. In May-June rolled metal prices grew compared with rates in April, but were still far off peak levels. We can say that prices, that were registered in July-September 2008 will be hardly matched in coming years, shouldn't US dollar devalue and world economy start experiencing inflation. Metal products prices drop is significant only in comparison with peak values of 2008, if we look at 2007 then the prices have been slightly reduced and in June were within the level established on the market at the end of 2006 beginning of 2007. We can say that speculative factor has been cut down.

By the middle of second quarter of 2009 the situation on ferrous metals market started to get better, though on different markets the situation was not clear. The demand of metal products in the beginning of May 2009 in developed economies remained weak, where on markets that are still developing price growth was registered. Especially it related to the Middle East and Asian economies which stock were shrinking faster. Finance and credit problems in developed economies continue to prevent prices on metals from growing.

Iron ore prices drop and short term scrap metal price drop make the consumers wait for the metal products price reduction. Although lower raw material costs can effectively influence the prices and turn the market situation to the better side at least for a few months.

There are signs of demand growth on sort rolled metal, produced on new rolling mini-plants. It is expected that the demand on such rolled metals will slightly grow due to summer construction period, though construction markets are not as active as they were expected to be. Demand on Asian markets turned out to be more stable than in other regions, where buyers had cheaper imported products to choose from.

Demand on sheet rolled metals and price levels are in more complicated situation than sort rolled metal market. It looks like the prices reached the bottom and are expected to start growing. Lower demand on sheet rolled metals is a result of not only the world economic crisis but also the fact that the production wasn't reduced in comparison with reduction of sort rolled metal production.

The situation in China represents an important factor in international market price change. Leading metallurgical companies of China are trying to increase prices on there products and have already announced the price increase for third quarter. Some companies have already put prices up starting from beginning of June. Both long and flat rolled products prices have grown.

12.1. *Semi-Finished Products*

The slabs market experienced price growth at the end of May - beginning of June up to \$370-390/t cfr when supplied to Eastern Asian markets. In the first half of June prices got stable. Sheet rolled metal price is expected to grow in USA and Europe, but slabs demand will remain low until the end of June.

Export prices on billets produced in CIS have changed from \$350-360/t fob at the end of May to \$370-380\$/t fob. Recent low production volumes on regional markets cause product shortage which makes Turkish rolling companies by billets in Western Europe.

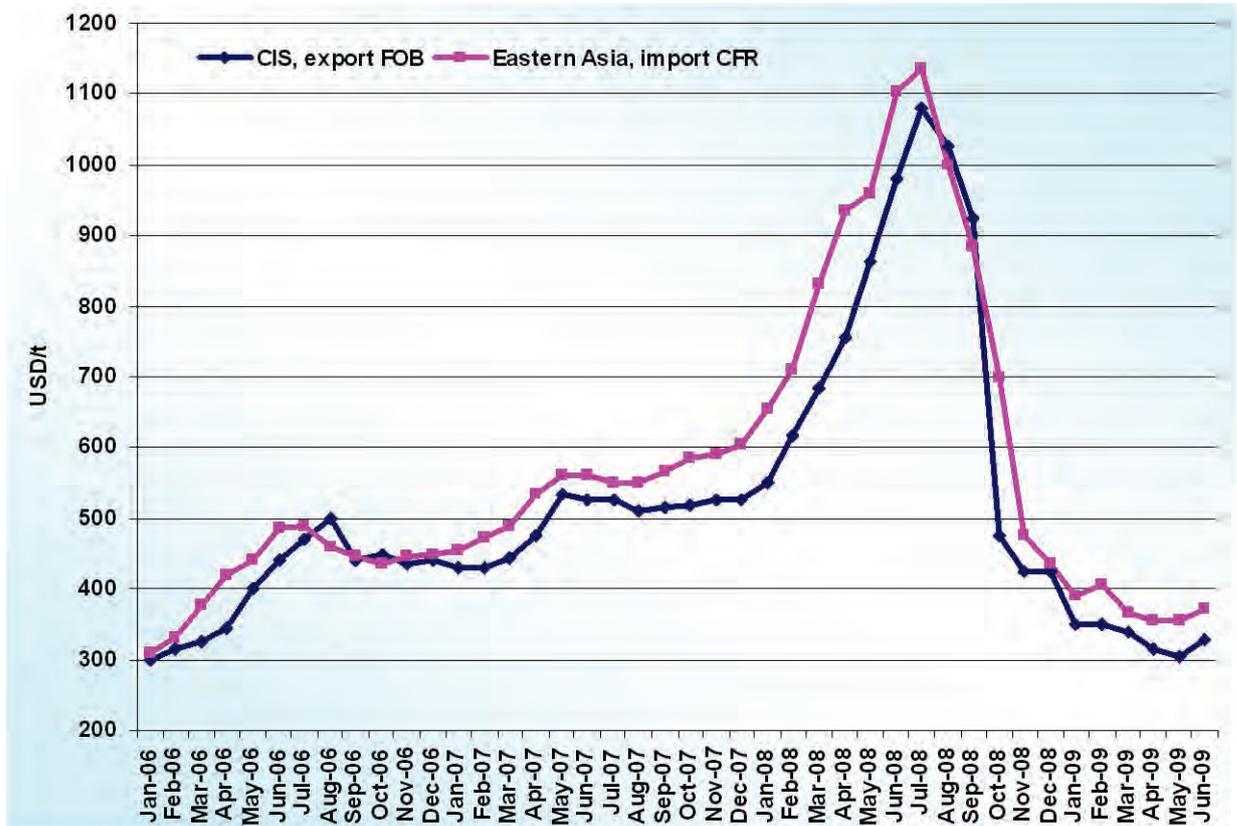
Turkish companies in beginning of June reduced prices on billets started to increase them by the middle of the month from \$370 to \$380-395/t ex-works. That happened because

* Data Sources: MB [1], SBB [4], CRU [10]

metallurgists failed to agree on scrap metals price reduction. Plus there's a shortage of billets on Turkish market. The supply volumes from CIS are not high and Spanish and British supplies at \$380-400 per ton can't satisfy the requirements.

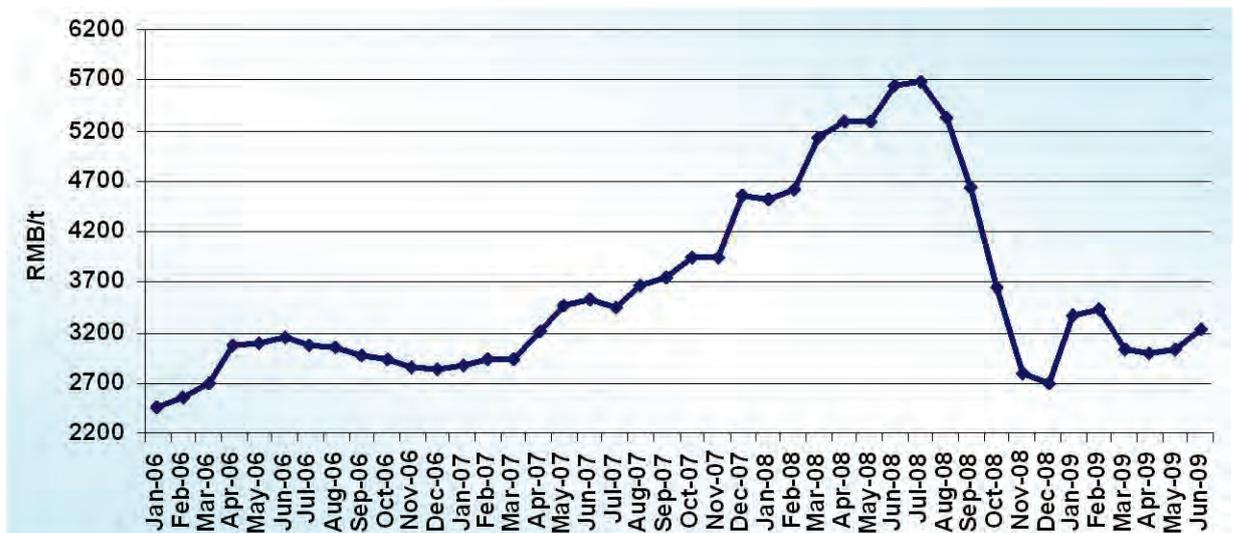
The following price growth doesn't look real because the demand on billets in Middle East is weak and it started raining in Asia which makes construction to slow down. Nevertheless producers have a good chance to strengthen their positions.

Slabs prices, \$/t

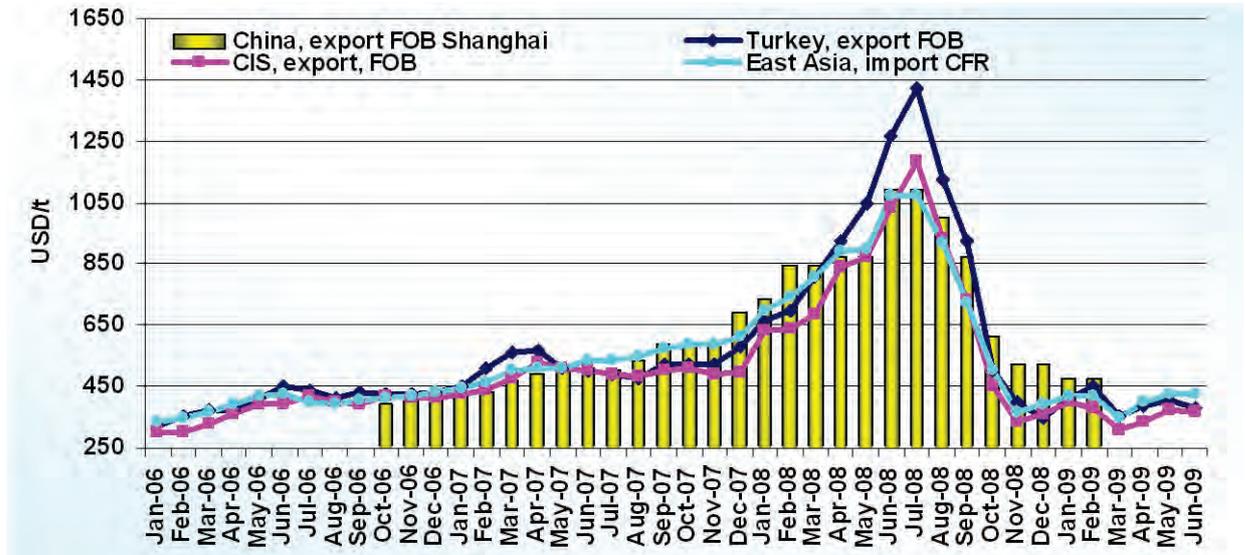


Sources: MB [1], SBB [4], CRU [10]

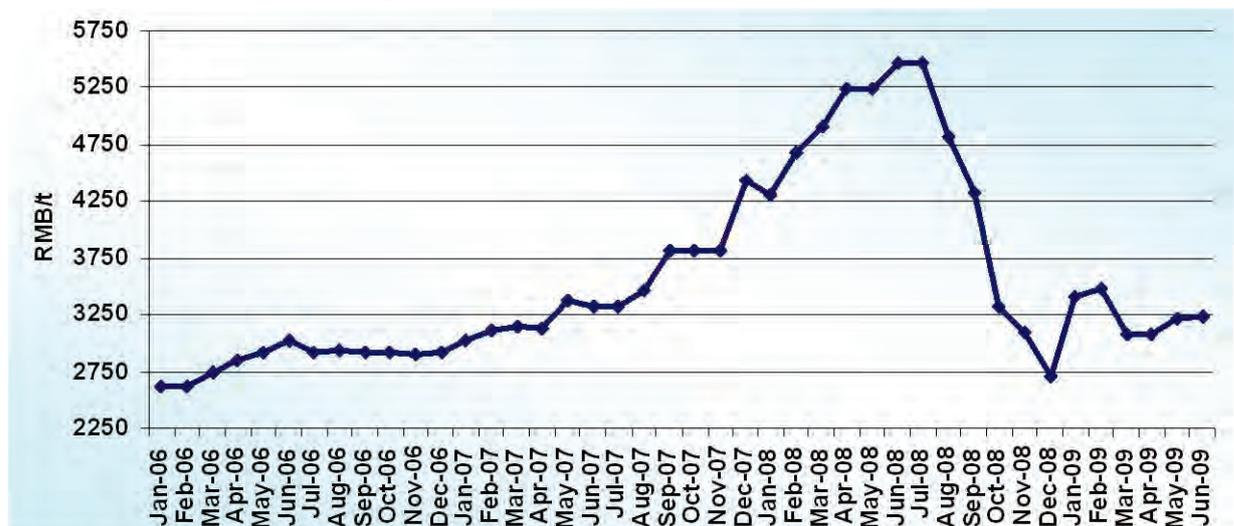
Slabs prices on Chinese domestic market, RMB/t



Sources: MB [1], SBB [4], CRU [10]

Billets prices, \$/t

Sources: MB [1], SBB [4], CRU [10]

Billets prices on Chinese domestic market, RMB/t

Sources: MB [1], SBB [4], CRU [10]

12.2. Flat Rolled Products

Flat product prices during May demonstrated a slow and slight growth in Nordic economies. However, in the US the price remained at a low stable level. American manufacturers in June tried to raise the price, although, the demand remains low. Flat products prices grew in Asia during the month of May, but the demand in the economies of southern Europe remained very low. In the Nordic economies, flat products producers are trying to raise the price during the III quarter of 2009.

Most flat product prices increased slightly during May and June in Southeast Asia, with hot-rolled coils demand and price demonstrating the highest growth.

Chinese products remain uncompetitive in export markets, even when the supply is more accessible, and the domestic market demand matches the production level.

Manufacturers of flat rolled products in the Nordic economies will try to raise prices in the III quarter of 2009. However, as early as in May, spot prices for hot-rolled sheets in coils

slightly increased. There was also a slight price increase of cold rolled and galvanized coils. The demand continued to grow in June-May compared with previous months. However, trading companies that have some stock of finished products, most likely, will not procure excess products for the summer season. Rolled products prices at the spot market may also grow, but to a lesser extent than prices of factories that sell their products to regular customers.

In the Nordic economies, hot rolled coil price increased in May €350-415 / t. In June it reached €350-420 / t, while cold rolled coil price in May was €410 -- 470 / t, and in June it grew to €420-480 / t. The price of hot dipped galvanized sheets remained unchanged after the decline and will likely remain stable in the coming months.

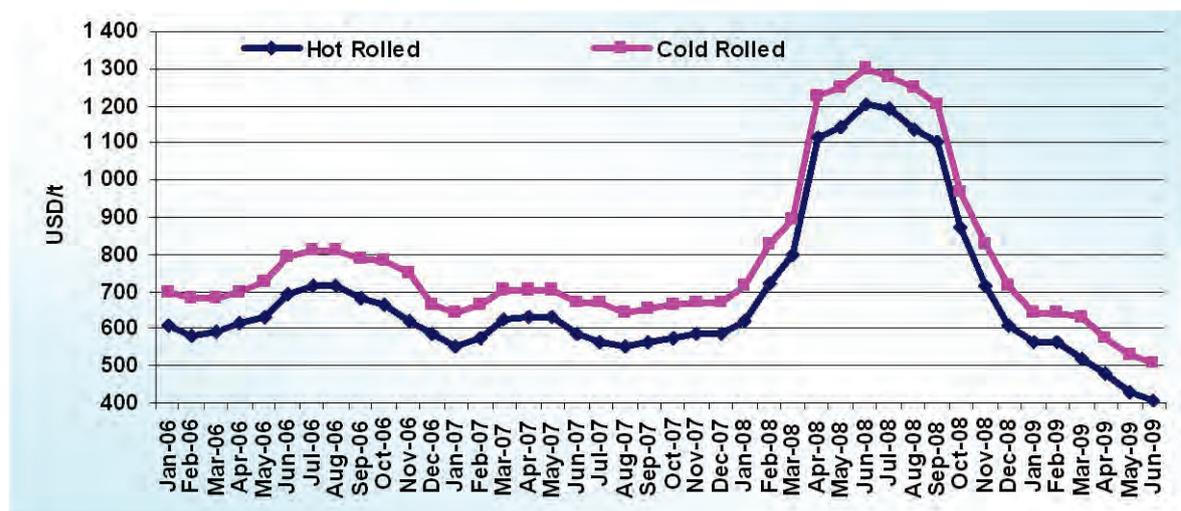
In the southern Europe, prices grew at first but then dropped again to €20 per ton and during May-June they remained virtually unchanged. The demand in the region remains low. Price growth is unlikely to occur during July. During the first half of May and June the price of hot-rolled sheets in coils in southern Europe was estimated at €330-350 / t. Prices for cold-rolled sheet in coils were more stable, but the price of hot dipped galvanized sheets sharply dropped to €395-450 / t in May and remained unchanged in the first half of June.

In the US market, the price of hot-rolled sheets in coils was stable in May, but by the end of the month the price fell within the range of \$ 20/short t. In the first half of June the price continued to decline. The demand remains low, although, steel companies have expressed confidence that they would be able to sell their products at \$ 400/short t., despite the price drop in June to \$ 360-380/short t (\$ 396-418 / t).

Traders continue to reduce the stock and there are no prerequisites for the increase. At the end of May cold-rolled sheet in coils was offered at \$ 440-480/short t (\$ 485-529 / t). During the first half of June, cold-rolled sheet prices did not change, as compared to the previous month. Some decline was observed in prices of hot dipped galvanized sheets which lowered to \$ 520-560/short t (\$ 573-617 / t). Further decline is also possible.

Metal products import volume to the American market is very low. This allows us to expect some increase of the load of existing production capacities of iron and steel companies. Provided there is no increase of the demand at the domestic market, this, in its turn, may cause a price decline.

Flat rolled products prices at the domestic market of North American economies \$/t fob, Mid-West plants



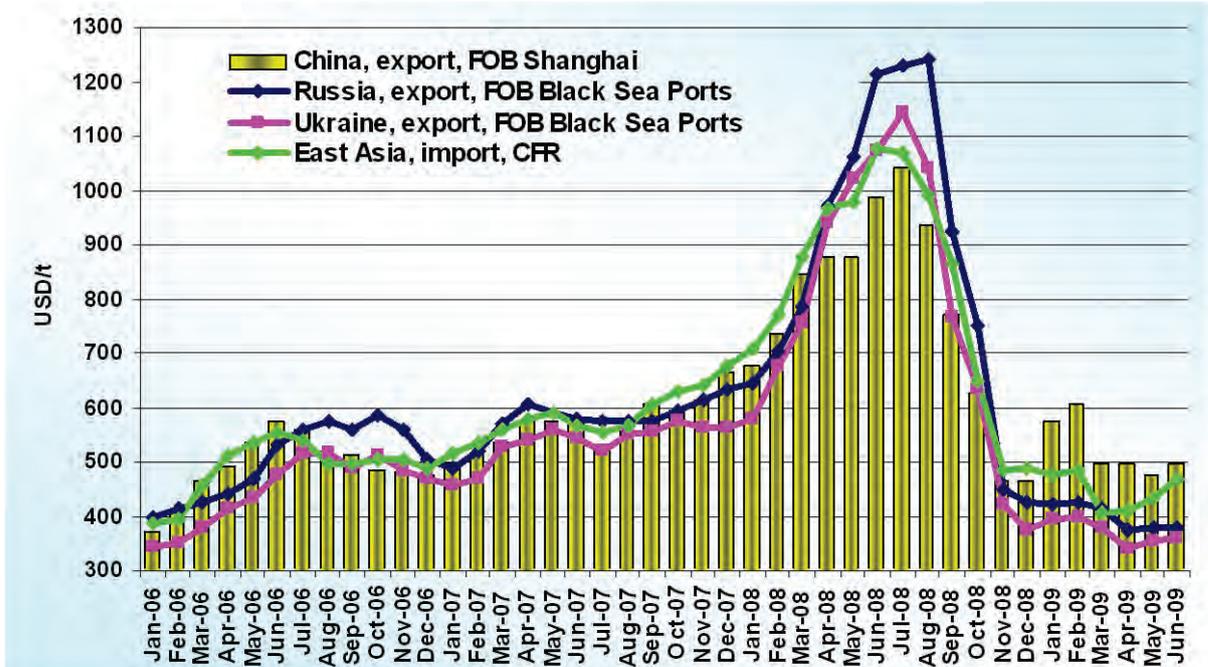
Sources: MB [1], SBB [4], CRU [10]

In South-East Asia, prices for hot-rolled sheet in coils increased by \$ 20-30/t in May to \$ 450-460 / t cfr, while in the first half of June - up to \$ 465-475 / t cfr, while market participants expect a further rise in prices.

Cold rolled coils price in the South-East Asian economies also went up during May-June to \$ 520-570 / t fob, while the price of hot dipped galvanized sheets was stable in May and remained at \$ 580 - 620 / t cfr. In the first half of June a price increase was observed to \$ 620-640 / t cfr.

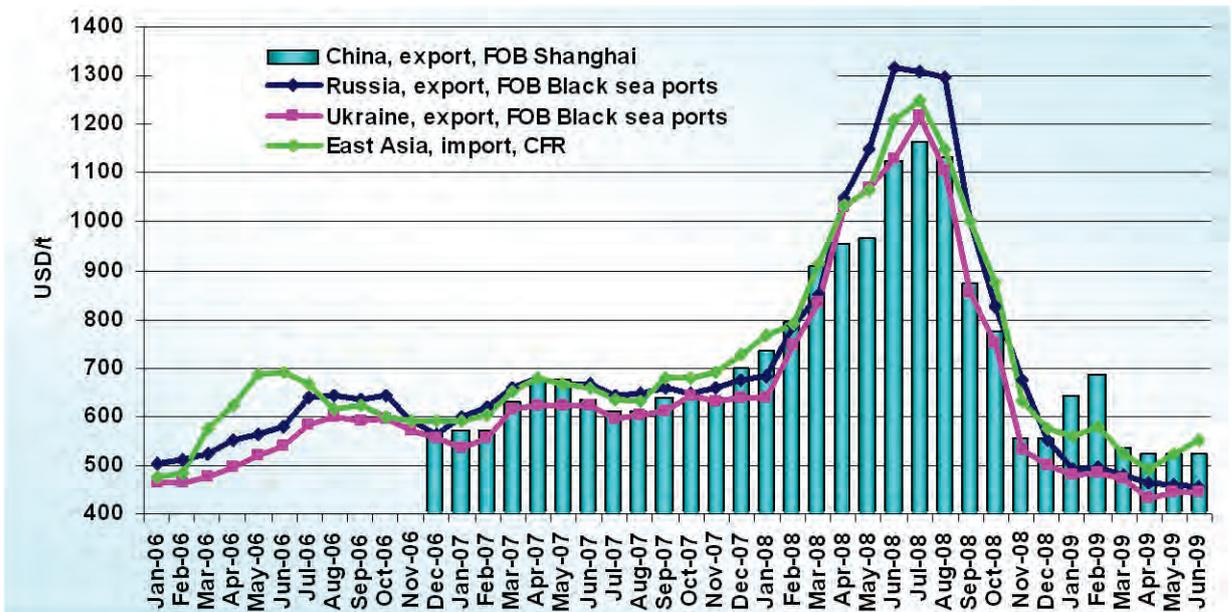
In May, the export price of Chinese hot-rolled coils fell by \$ 20 / t to \$ 470 - 480 / t fob, but rose again in June and amounted to \$ 490-500 / t fob. It should be noted that Chinese exporters have unduly raised their prices above SEA market level. Such prices are not competitive in European and the Middle East markets.

HRC Prices, \$/t



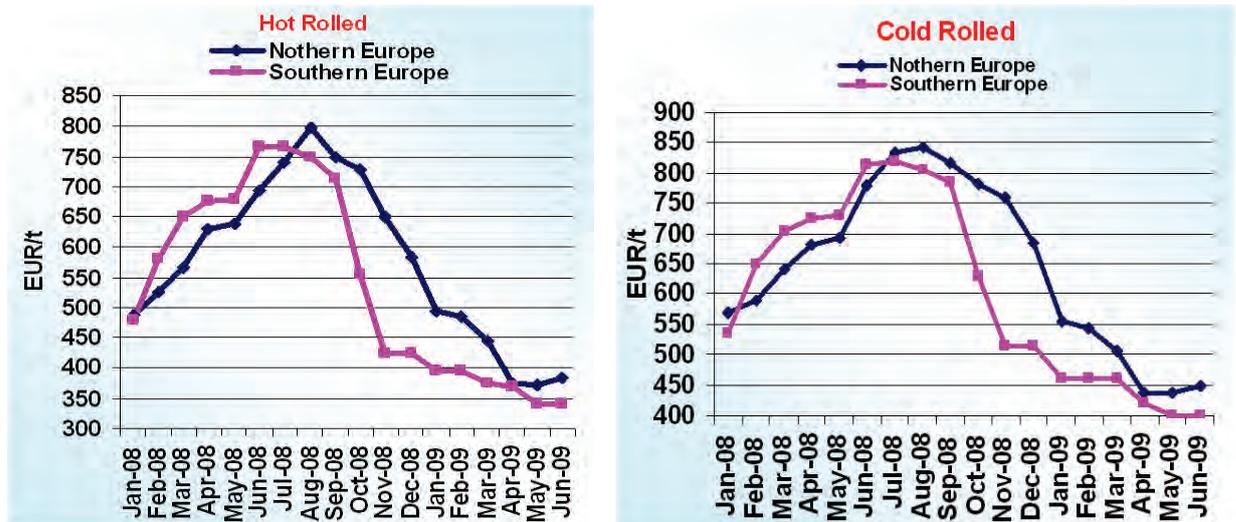
Sources: MB [1], SBB [4], CRU [10]

CRC Prices, \$/t



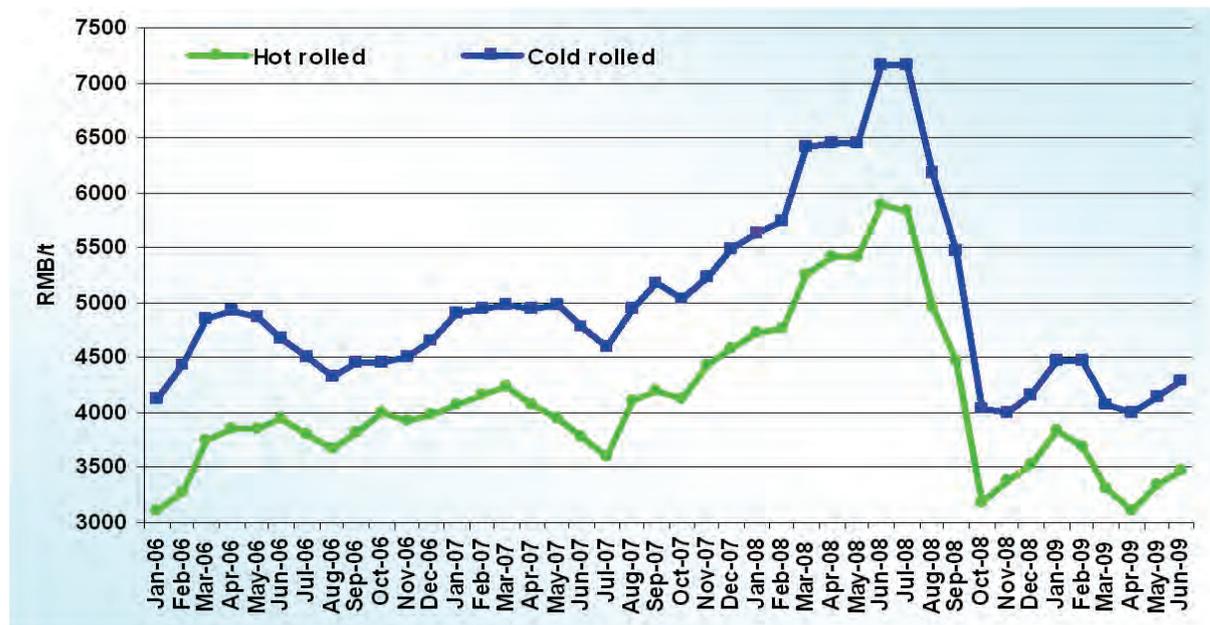
Sources: MB [1], SBB [4], CRU [10]

European Domestic Flat Products Prices, EUR/t EXW



Sources: MB [1], SBB [4], CRU [10]

Chinese Domestic Flat Products Price, RMB/t, Shanghai, Including 17% VAT



Sources: MB [1], SBB [4], CRU [10]

12.3. Thick Plate

Thick plate price in the Nordic economies declined during May 2009 with transaction price amounting to €470-570 / t (\$ 658-798 / t). Companies with stocks of finished goods are still seeking to reduce stock levels. Since they do not make new purchases, the price in June slightly fell to €470-550 / t.

In southern Europe, thick plate producers kept the price on the same level in May, although, continued poor demand in Italy and Spain presently point to the possible production cutback of this type of rolled products. The current thick plate price amounts to €450-500 / t (\$ 630-700 / t).

In the US, thick plate price declined during the month of May. The demand continues to remain low, despite the significant import volume. Prices fell by \$ 60/short t to reach \$ 610-

640/kor. t (\$ 672-705 / t) in May. However, in June, manufacturers increased the prices slightly to \$ 630-660/short t

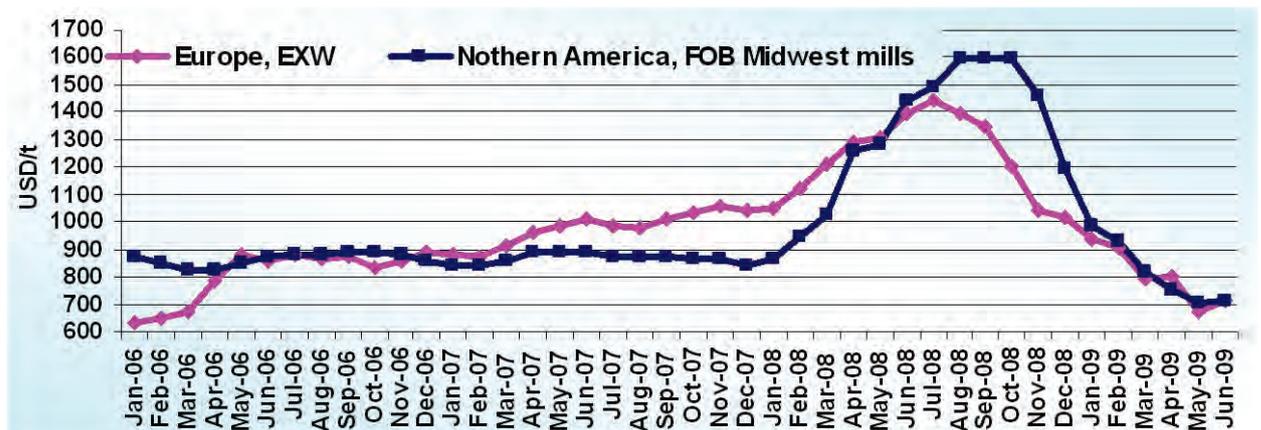
Thick plate prices in the economies of Southeast Asia fell to \$ 450-480/t cfr during the month of May, although, Southeast Asian market demand and prices are higher compared to other markets. In the first half of June, prices rose slightly to \$ 480-500 / t cfr. The export price for Chinese thick plates continued to remain at a high level amounting to \$ 500-510 / t fob. Obviously, Chinese rolled products were not competitive.

Thick Sheets Prices, USD/t



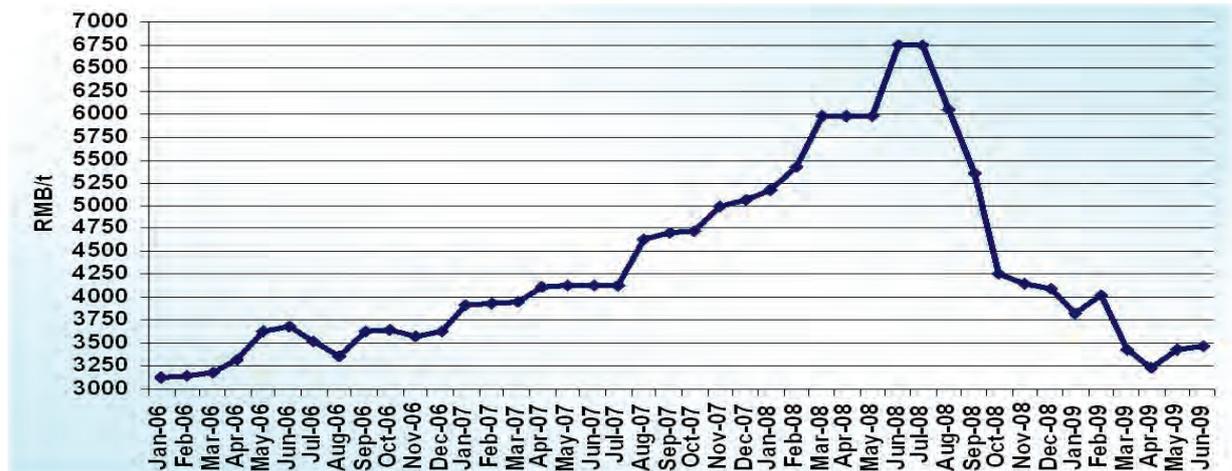
Sources: MB [1], SBB [4], CRU [10]

European & North American Thick Sheet Domestic Prices, USD/t



Sources: MB [1], SBB [4], CRU [10]

Chinese Domestic Thick Sheet Prices, RMB/t



Sources: MB [1], SBB [4], CRU [10]

12.4. Long Products

Global long products prices in the first half of May were relatively stable. However, a slight decline was still noted at the end of May. With the beginning of construction season, although, the demand happened to be higher compared to previous months, it was lower against the anticipated target. Fittings, rod and wire rod prices in European market have been more stable, while prices for structural sections rose due to the increased markup for scrap products. Fittings prices in the US maintained at sustainable levels due to the decline in scrap metal prices. Manufacturers increased their prices in June, despite the low demand. In May, American wire rod prices virtually remained the same. Manufacturers increased their price offers in June, while wire rod prices remained unchanged. Fittings prices demonstrated a slight increase in the South-East Asia due to the intensified demand. Wire rod and bar prices went up as well.

In European markets, medium-section and large profiles prices grew in May and amounted to €420-480/ t (\$ 588-672 / t). In June the price range expanded upwards to €420-500/ t.

In Southeast Asia, beam prices fell to \$20/t in May to \$ 560-580 / t cfr. In May, American manufacturers of equal beams offered their products at \$ 685-695/short t (\$ 755-766 / t), following a sharp drop in April. In June, the price already amounted to \$ 685-715/kor. t. Wire rod prices in the US market have been stable, although, producers are trying to increase the price by \$ 25/short t. in June.

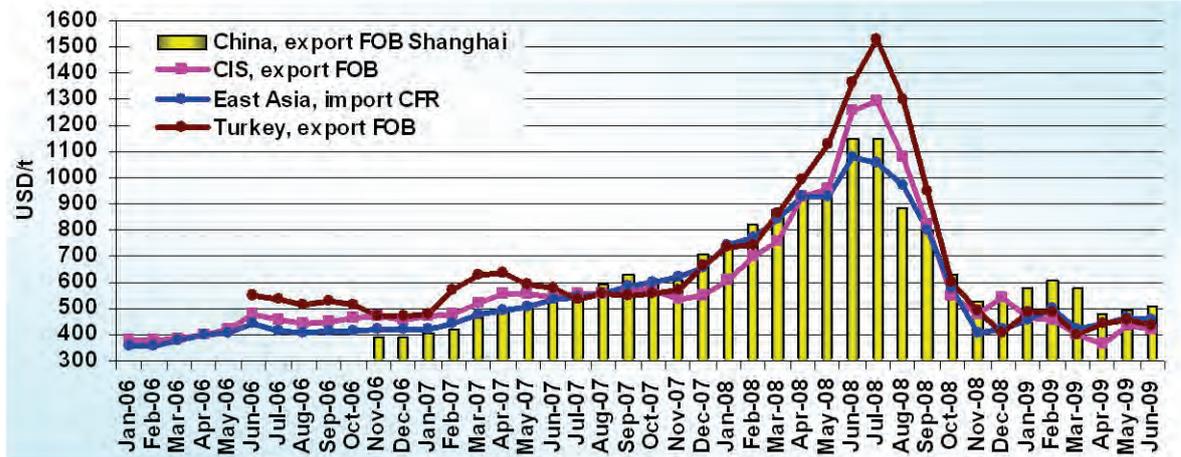
In Asian markets the prices were higher during May, as compared to other markets. Import quotes increased by \$ 10-20/t, except for fittings prices, which in late May and early June remained unchanged - \$ 450-465/t cfr.

In the United States fittings price did not change in May. However, in early June steel companies increased their ask price to 480-500/t.

In Europe, fitting price went up by €15/t in May and reached €335-380/t (\$ 469-532/ t). However, by the end of the month prices began a slight decline and in the first half of June they fell to €330-380/t. Thereat, wire rod price increased in late May - early June to €330-370/t (\$ 462-518/t).

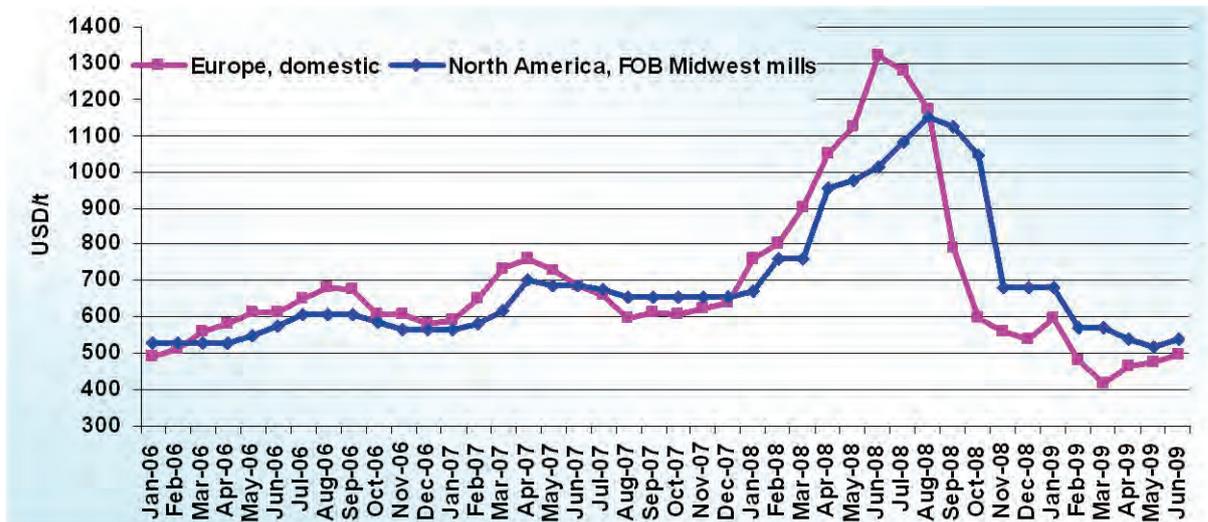
South-East Asian rod import price during the month of May increased by \$30/ t, and amounted to \$ 500-530/ t cfr. The lowest price in June further grew to \$ 10/t. Fittings price went up by \$ 10-15/t in May but in June it once again returned to the level of \$ 450-465/ t cfr. Wire rod prices in the region May rose to \$ 30/t in May and remained at \$ 470-500 / t cfr. during the first half of June.

Global Rebar Prices, USD/t



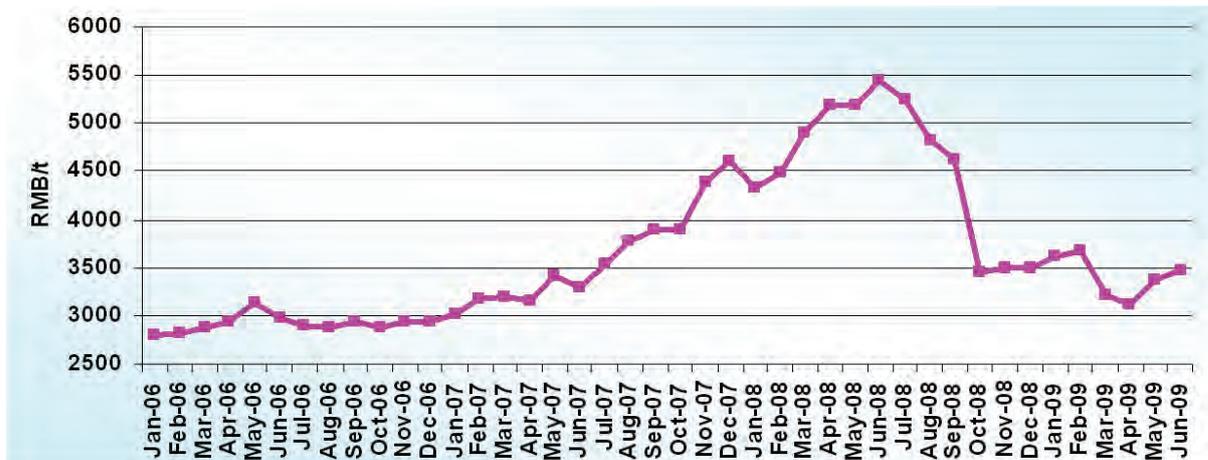
Sources: MB [1], SBB [4], CRU [10]

Europe & North American Domestic Rebar Prices, USD/t



Sources: MB [1], SBB [4], CRU [10]

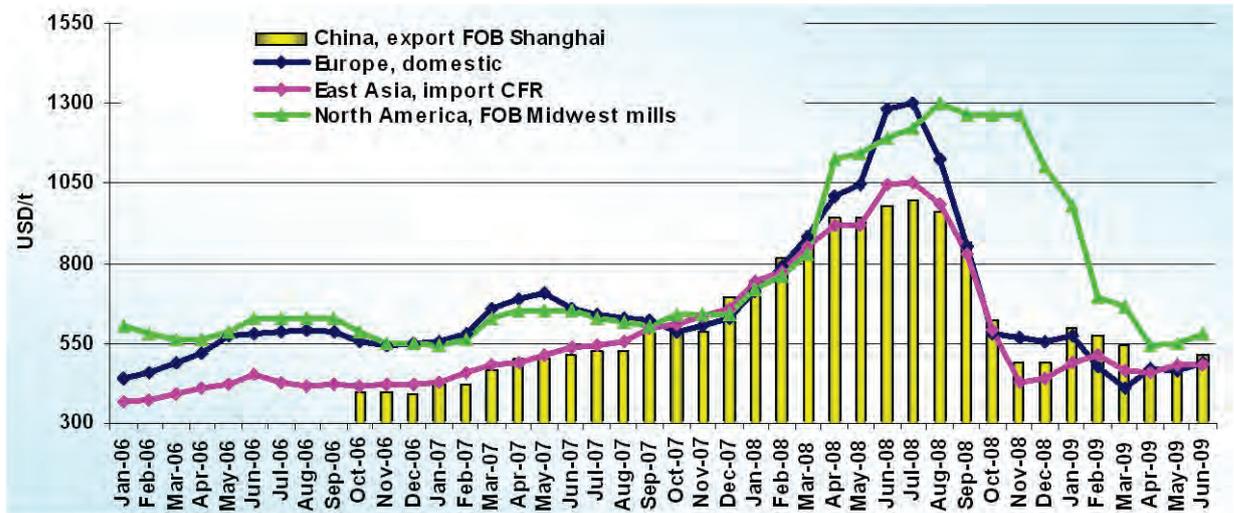
China Domestic Rebar Price, RMB/t



Sources: MB [1], SBB [4], CRU [10]

During May and early June factory fittings prices in the Middle East were at \$ 435-587/t. Prices of imported fittings in the region rose to \$ 460-470/ t cfr during May. However, in early June, prices once again, started to decline due to the unstable demand.

Wire Rod Global Prices, USD/t



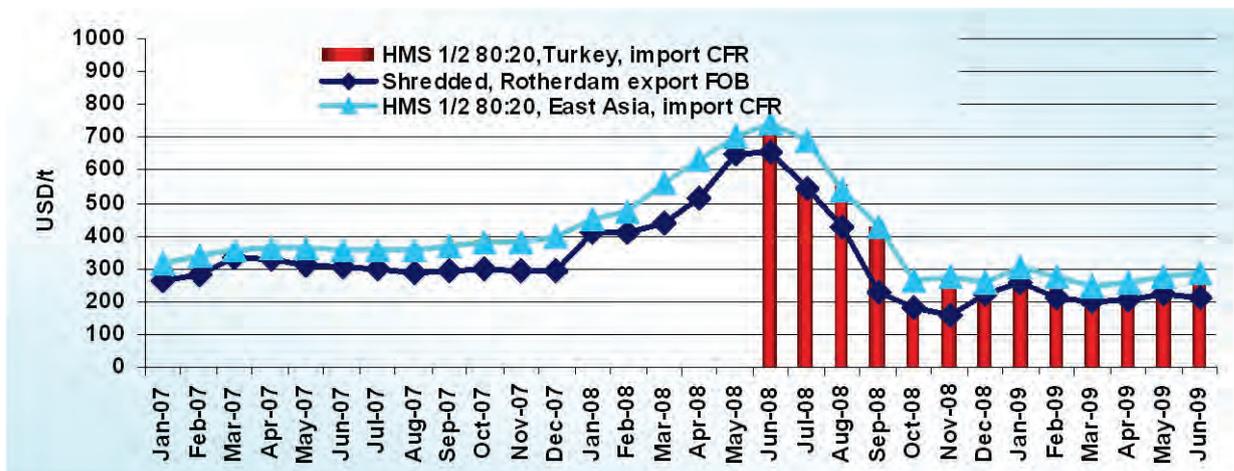
Sources: MB [1], SBB [4], CRU [10]

12.5. Ferrous Scrap

After a sharp price surge in April, global price trends in the market of ferrous scrap remained stable in May. Some decline of the demand for ferrous scrap was observed in Europe and Turkey at the end of May. In June, ferrous scrap prices slightly adjusted downwards, particularly in the Italian market.

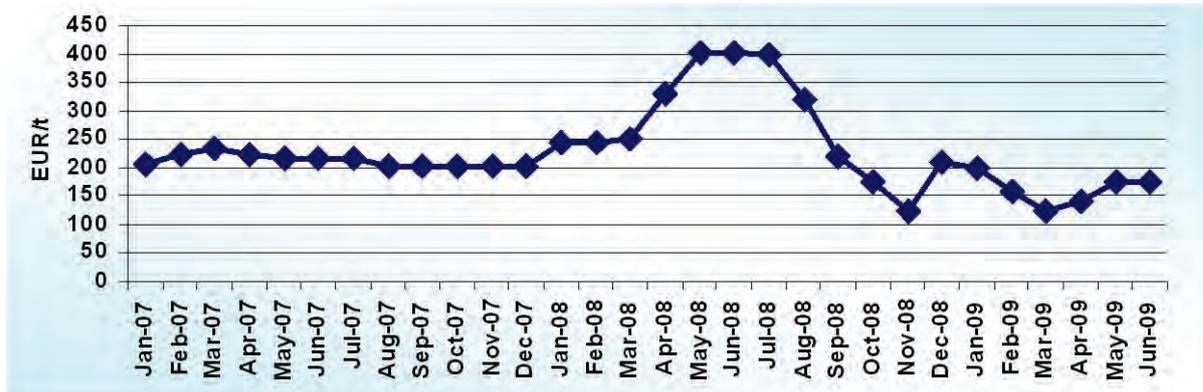
But in early June, Turkish companies resumed scrap purchases on the global market, which resulted in the increased price of scrap supplied to Turkey. Several ship consignments of scrap were purchased, including fragmented scrap at \$ 257,5/t cfr, and mixed scrap (bulky scrap 1 and 2 in 80:20 ratio) - to \$ 252,5/ton

Regional Ferrous Scrap Prices, USD/t



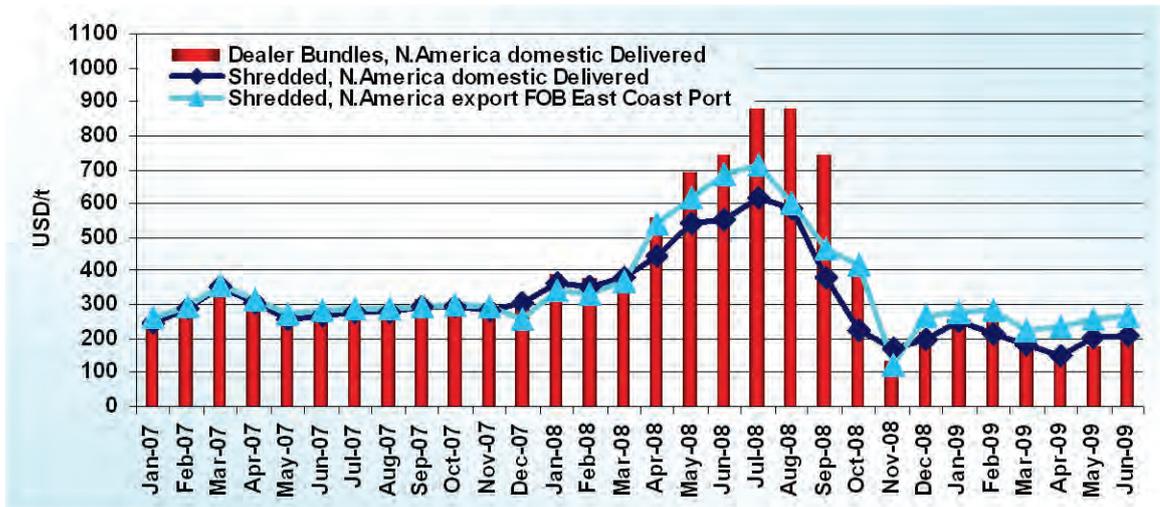
Sources: MB [1], SBB [4], CRU [10]

European Domestic Shredded Steel Scrap Prices, EUR/t EXW



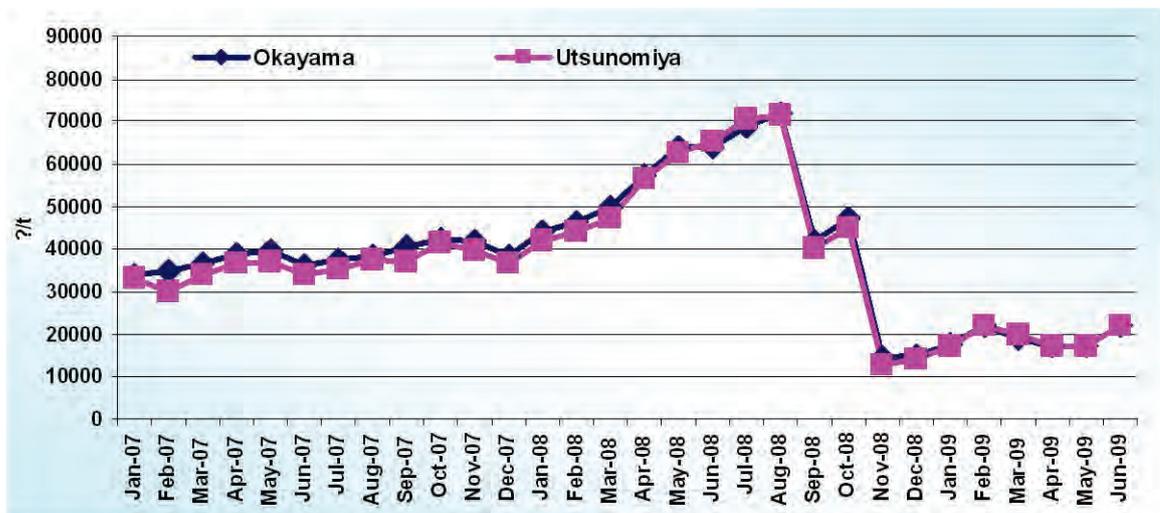
Sources: MB [1], SBB [4], CRU [10]

North America Ferrous Scrap Prices, USD/t



Sources: MB [1], SBB [4], CRU [10]

Tokyo Steel Purchasing Prices, Grade H2, ¥/t



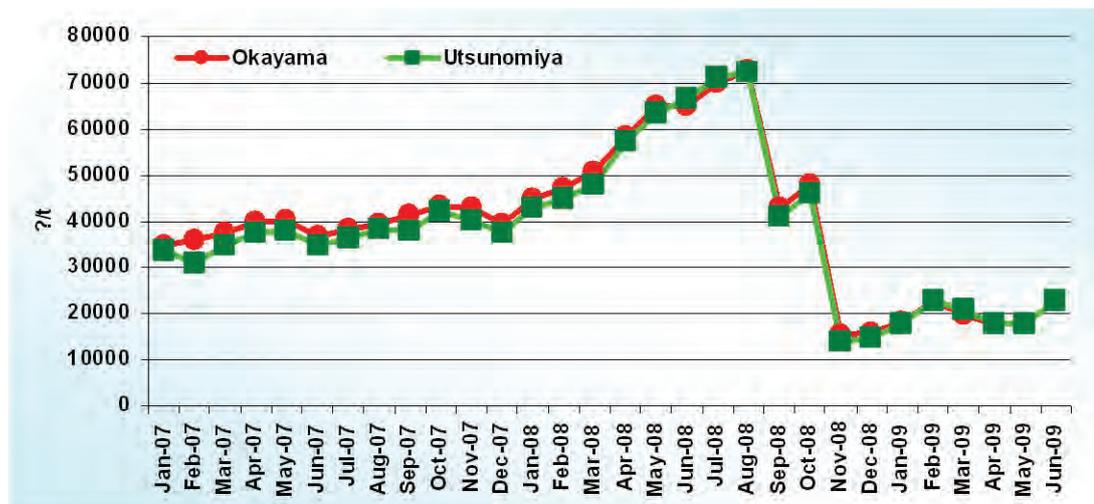
Sources: MB [1], SBB [4], CRU [10]

In late May, bulky scrap № 1 and 2 (80:20 ratio) could be purchased at \$ 245-250/t cfr, while fragmented scrap - at \$ 255-260/t cfr. Price offers of scrap suppliers from the EU increased within \$ 10/t range.

In the US, bulky scrap prices remained stable in May, though fragmented scrap price lowered by \$ 10/dl.t. In Europe, fragmented scrap price decline in May amounted to €15/dl.t per ton, after April growth to €30/t. In Asian economies scrap quotes remained virtually unchanged, equal \$ 270-285/t cfr.

By the end of May, domestic prices for packaged scrap №1 in the United States amounted to \$ 225-230/dl. t, while fragmented scrap price amounted to \$ 195-210/dl.t. European fragmented scrap price dropped in May to €165-185/t (\$ 231 - 259/t). Export prices from Europe fell by the end of May - early June to \$ 180-240/t fob. The decline of export prices in Europe is due to the reduced purchase volume of Turkish plants.

Tokyo Steel Shredded Ferrous Scrap Purchasing Prices, ¥/t



Sources: MB [1], SBB [4], CRU [10]

13. NON-FERROUS METALS MARKET*

Problems of the global economy did not only accumulate, but dramatically deteriorated by the end of 2008. In the IV-th quarter of 2008, financial crisis negatively affected the economy of most economies and regions. All the leading economies of the world are taking emergency measures to stabilize the situation, including the US, EU, China, and Russia. Production of ferrous and nonferrous metals in the IV-th quarter of 2008 declined against the falling prices. The situation was also aggravated by the oversupply of basic metals, especially aluminum.

The problem now is not so much in consumption, which has naturally declined, but in the survival of many companies. By the end of 2008 dramatic decline of prices swept through all global ferrous metals markets. Many companies were forced to not only cutback their production (since some metal prices fell below production costs), but also to shutdown their facilities.

Obviously, production costs have also changed as a result of the lower price of fuel and energy resources, raw materials, and freight rates. However, the financial crunch has had a much too serious impact on the global economy, and only extraordinary measures taken by the leading economies in the attempt to correct the situation, have allowed to somewhat stabilize the situation by mid-2009.

* Data Sources: IAI [15], ILZSG [16], CBI China, Economist Intelligence Unit [13], Tex Report [3], WBMS [12], U.S. Geological Survey [14], INSG [17], Anitake [18], ICSG [19], GFMS [25]

It is obvious that the improvement of the global economy will eventually take place. In fact, it is already evident in the recovery of stock markets, rising oil prices and stabilization of the economy of many economies. It should be clarified, though, that positive changes will occur not against the first half of 2008, but against the lowest peak, which was registered in the IV-th quarter of the year.

In the meantime, many companies have been revising their investment programs, deferring execution of projects to a more favorable time. Some already built facilities might not be put on production since companies are forced to not only reduce their production, but decommission some of the facilities.

Several large companies are forced to sell their assets, primarily non-core assets in order to pay off debts which in some cases are estimated in billions of dollars.

13.1. Aluminum Market Outlook

In recent years the tendency toward a steady growth of aluminum production and consumption was stable. But the increase of production and demand for aluminum went downward amidst the deep financial crunch which turned into a full-scale economic crisis, and the rollback of metal prices in the second half of 2008. Besides, this decline turned out to be very significant.

However, if after 2002 the increase rate of aluminum consumption was never less than 5.7% per year, and in 2007 it exceeded 12%, in 2008 an extremely insignificant growth was registered and only in the first half of the year.

In the beginning of 2008 the slowdown in the aluminum consumption and production was noted all over the world. It was mainly related to power supply problems under unfavorable weather conditions, which led to decommissioning of a number of enterprises, particularly in China.

In the beginning of 2008 negative weather conditions had an effect on the overall volume of the global aluminum demand in the midst of production problems, including energy emergency in China. Besides problems in construction sector were observed a number of economies, such as USA and some European economies, which should also be taken into consideration. Those problems had their negative impact on aluminum consumption volume in the first half of the year.

The USA were the first ones to feel the consequences of the financial crisis, which brought to the reduction of aluminum demand on the part of main consumers, construction sector and motor industry in particular. A number of companies decommissioned some aluminum production facilities, Aleries, in particular.

As early as in the first half of 2008 many research centers and banks were forecasting the decrease of aluminum demand in the USA and European economies. However, most analysts did not expect such an outcome and such aggravation of the global financial crunch which led to the full-scale economic crisis.

Back in 2007, global consumption of primary aluminum reached 38,4 mln. tons., which was more than a 12% increase against the previous year, despite the growing mortgage lending crisis in US. Based on the results of the first half of the year, global aluminum consumption growth amounted to only 7%. However, in the second half of the year, signs of significant reduction in consumption growth were noted, while in the fourth quarter consumption cutback was obvious and openly spoken of. This slowdown in consumption growth was noted not only in North America but in Europe and China as well.

And even though on the basis of nine months of 2008 annualized consumption was estimated at 41 mln. tons., it is clear that aluminum production cutback experienced by many companies in November and December, as well as the falling demand led to the decrease in consumption at the end of the year to less than 39 mln. tons.

According to Economist Intelligence Unit, global consumption of primary aluminum in 2008 amounted to 38,8 mln. tons., which was a 0.9 % increase against the last year. According to Economist Intelligence Unit, a significant reduction of primary aluminum production and consumption may occur in 2009 which will lead to 8.8% and 8.1 % decline respectively.

Based on the results of 2008, aluminum consumption decreased in Europe, Japan, CIS, Korea, Canada, yet, increased in China, India, Brazil. A slight increase was also observed in the United States, as well as in several other economies.

Consumption of primary aluminum is expected to decline in 2009 in all major regions and economies, with the possible exception of China. It is only in 2010 that we can expect an increase of the aluminum world-wide, including China, USA, EU, Korea and other economies.

The situation on the global aluminum market is highly dependent on the Chinese market environment, which is the largest aluminum producer and consumer. In 2007, the economy saw a sharp increase in production and consumption of aluminum - almost 43%. In 2008, aluminum consumption in the economy increased slightly - within 4%. To a large extent the growth rate was adjusted due to aluminum production and consumption in the November-December 2008. In the first quarter of 2009 primary aluminum demand in China declined slightly compared to the same period last year. Metallurgical companies reduced their production output in view of the reduced consumption and low prices. However, as early as in April, the situation began to change as market participants expressed some interest in aluminum. Production of primary aluminum in April slightly increased compared to the previous month. However, a more significant growth was observed in aluminum import into the economy in April. The difficult situation of many Chinese companies is associated with high production costs.

Despite the drop of the primary aluminum output in the fourth quarter of last year, based on the results of 2008, global aluminum production, excluding China, increased compared to 2007 by 3.4%. According to IAI, it amounted 25,654 mln. tons, despite the decline of primary aluminum output in the IV quarter. Thereat, primary aluminum production declined in the past year only in Africa (by 5.5% to 1,715 mln. tons), Australia and Oceania (by 0.8% to 2,297 mln. tons). In other regions the increase of primary aluminum production was observed. The most significant aluminum production increase - by 7.3% - was registered in the economies of Western Europe , where it reached 4,618 mln. tons. (4,305 mln. tons. a year earlier). In other Asian economies it grew by 5.5% to 3, 923 mln. tons. (3, 717 mln. tons.- a year earlier). Less significant aluminum production growth was observed in Eastern European economies (including Russia) where it grew by 4.4% to 4,658 mln. tons (4,46 mln. tons) and Latin America - by 4% to 2,66 mln. tons. (2,558 mln. tons). The increase of aluminum production in North America amounted to 2.5% (from 5,642 to 5,783 mln. tons).

Lowering of the price of nonferrous metals on the global market against the reduced demand amidst the deteriorating economic crisis, in the fourth quarter of 2008 resulted in the drop of the production volume. Thus, 60% aluminum price drop from the record-high resulted in 18% reduction of aluminum output in China in December last year, as against the same period last year. Nevertheless, due to strong growth of production in the first half of the year, total aluminum output in China rose in 2008 against the level of 2007 by 4.1%. According to International Aluminum Institute (IAI), primary aluminum production in China in December 2008 was estimated at 946 thousand tons. (991 thous.tons in November and 1,147 thous.tons in December of 2007). Based on the results of 2008, the total production of primary aluminum in the economy amounted to 13,105 mln. tons, which slightly exceeded last year indicators of 12,588 mln. tons.

However, according to NBS, in 2008 primary aluminum production in China increased by 7.7% against the previous year and reached 13,176 mln. tons. In December alone primary aluminum production amounted to 1,023 mln. tons (a 0.77% increase against the same period of previous year). Alumina output in the economy grew by 17.7% to reach 22,788 mln. tons.

Thus, the total global production of primary aluminum in 2008 increased by 3.6% and equaled, according to IAI, nearly 38,8 mln. tons.

Despite the negative trends in the aluminum market, following production cutback in most regions in November last year, December, was marked by a slight increase in the aluminum output.

Nevertheless, already by the results of 2008, the growth rates of primary aluminium output have declined against January-September. And the reduction in the metal output in the African economies and Australia has grown.

Global Output of Primary Aluminium in 2004-2008, thousand tons.*

<i>Region</i>	<i>Years</i>					<i>Diff., %</i>	<i>January-April 2009</i>	<i>January-April 2008</i>	<i>Diff., %</i>
	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>				
Africa	1,711	1,753	1,864	1,815	1,715	-5.5	540	563	-4.1
North America	5,110	5,382	5,333	5,642	5,783	2.5	1,652	1,949	-15.2
Latin America	2,356	2,391	2,493	2,558	2,660	4.0	841	871	-3.4
Asia**	2,735	3,139	3,493	3,717	3,923	5.5	1,416	1,269	11.6
Western Europe	4,295	4,352	4,182	4,305	4,618	7.3	1,318	1,541	-14.5
CEE	4,139	4,194	4,230	4,460	4,658	4.4	1,400	1,538	-9
China	6,689	7,806	9,349	12,588	13,105	4.1	3,539	4,209	-15.9
Australia and Oceania	2,246	2,252	2,274	2,315	2,297	-0.8	722	767	-5.9
Total	29,281	31,269	33,218	37,400	38,759	3.6	11,428	12,707	-10.1

**Without output of aluminium in separate economies (their share in the total output is under 2 %), which do not submit official data to IAI*

***Without China*

China is the world's leading producer of primary aluminium, and the enhancement of its production amid the economic crisis facilitated the growth of metal reserves in warehouses and therefore negative price trends. By the end of January, 2009, the metal reserves at LME reached nearly 2.7 mln. tons. At the same time, the February price levels for metal hit their maximum over the recent years.

In Russia, just like in the majority of other regions of the world, the results of 2008 brought the growth of primary aluminium output. By the results of 2008, the production of primary aluminium in Russia, including silumin, has risen by 5.8 % compared to 2007. Along with this, Russia has experienced a shrinkage of alumina output (by 4.3 %) and production of bauxites (by 5.5 %).

The situation on the world aluminium market can be characterized by surplus production. The situation remained the same during the first months of 2009.

Excessive aluminium supply on the world market in the first quarter of 2009, according to according to World Bureau of Metal Statistics, was 679 thousand tons. (112 thousand tons. over similar period of the previous year).

The global output of primary aluminium has declined compared to similar period of the previous year by more than 10 %. The decline affected almost all regions, except for the Asian economies (without China). Though, according to IAI, the most significant output reduction was registered in the North American economies and China (by more than 15 %), as well as the Western European economies (by 14.5 %).

In January-April 2009, the production of primary aluminium in China fell by more than 15 % compared to similar period of the previous year, to 3.54 mln. tons. At the same time, in April the domestic output of primary aluminium dropped by 21.5 % against April of the previous year and by 2.88 % against the level of the previous month to 876.3 thousand tons.

But recently, China has boosted its demand for aluminium. This is connected with the rising demand for metal on the part of the domestic carbuilding industry and the building complex as well as with the necessity to replenish the companies' warehouse stocks. Chinese

businesses are starting to commission their previously stopped facilities due to a certain stabilization of price levels. The Chinese market has become appealing for suppliers.

The April amount of import of primary aluminium in China hit the record high of 362 thousand tons., which is four times higher than the March figures. Apart from this, the Chinese market in this period registered a rise of metal prices. Although, according to the evaluations of CRU International, in 2009 the demand for aluminium in China, not considering the creation of state metal reserves, may reduce by 3 % compared to the previous year to 12.2 mln. tons

The domestic output of alumina in January-April, 2009, fell by 6.7 % to 6.67 mln. tons. At the same time, in April the production of alumina in China was 1.76 mln. tons (fall by 5.5 % against the level of April, 2008, but growth by 5.17 % against the previous month).

The growth of basic nonferrous metals output was noticed in India. In April, 2009, the domestic aluminium production increased by 14.7% - to 117.315 thousand tons. (vs 102.317 thousand tons. in April 2008).

The world's leading aluminium companies – “RusAl”, Rio Tinto, Alcoa and Norsk Hydro are cutting down their production volumes in the current year due to the plunge of metal prices and growth of finished products reserves.

In the first quarter of 2009, «RusAl” reduced its production of aluminium by 7.2% compared to similar period of last year - to 1 mln. tons

By the year's results, the production of aluminium is expected to decline compared to 2008, by 0.5 mln. tons, or by 11%, - to 3.9 mln. tons

The shrinking demand for aluminium on the world market with the falling price levels have resulted in a number of businesses closing their facilities or cutting the plants' workload. This especially concerned those businesses, which are having difficulties with power supply and running high production costs. Price levels on metal below \$1,500/t lead to the fact that the majority of businesses are suffering losses. This holds especially true with the businesses that have assets in China, the European economies and North America. Among the companies which are noticeably reducing production of aluminium apart from Alcoa, Rio Tinto Alcan, there is the Chinese Chalco, as well as Vimetco, Norsk Hydro and others. The total amount of the global production cut in 2009 may approximate 4.8 mln. tons.

Rio Tinto Alcan, which is the world's second producer of aluminium, already at the end of 2008 initially planned to reduce its metal output in 2009 by 5 % compared to the previous year, to mln. tons. Due to the shrinkage of the demand for aluminium and the low price level, the company intended to decommission plants with high production costs. The general reduction of metal output by the company should have approximated 200 thousand tons.

But already in January this year, the company resolved on a larger cutdown on the aluminium output – by another 6 %, or by 230 thousand tons. Thus, the volume of cutdowns announced by the company reached 11 % - 450 thousand tons. The company's general metal production capacities approximate 4.2 mln. tons a year. The production of primary aluminium on the company's assets in 2009 may reach approximately 3.75 mln. tons. Apart from this, the company is also going to reduce its alumina output.

Overall by the results of the first quarter of 2009, Rio Tinto Group has reduced the production of primary aluminium by 6 % compared to similar period of the previous year, or by 57 thousand tons. Compared to the fourth quarter of 2008, the Group has cut down production by 4 %. By the results of the first quarter of 2009, the Group has reduced the production of alumina against similar period of the previous year by 2 %, or by 34 thousand tons. Compared to the fourth quarter of last year, the decrease in the production of alumina constituted 6 % - by 150 thousand tons. Correspondingly, there followed a drop in bauxites mining – by 19 % compared to similar period of the previous year, and by 24 % against the level of the previous quarter.

Naturally, this entailed the reduction in the number of workers employed by the company's plants. The general reduction of the number of employees of the company's plants may be expected to count 14 thousand tons. people. Apart from this, the company intends to cut its investments in the current year of 2009 – from \$9 to 4 bln. In the context of the programme

for output reduction, the company intended to stop the obsolete plant of Beauharnois (52 thousand tons. aluminium per year), as well as to scale down the metal output on its assets in France, Great Britain and Norway

In September, 2009, Rio Tinto Alcan is most likely to decommission its aluminium producing plant in Anglesey, Great Britain. The plant with the capacity of 145 thousand tons. Of aluminium per year will be stopped due to the expiry of the power supply contract. The company has not been able to negotiate a new contract. It should be mentioned that 51 % of the plant's shares belong to Rio Tinto Alcan, and the others - to Kaiser Aluminum. Rio Tinto Alcan – is the world's second aluminium producer. In 2009 the company intends to produce approximately 4 mln. tons of metal.

In November, 2008, the plans to cut down the production of primary aluminium by 15 %, upon the year's results, were announced by the American Alcoa Inc, which comes third in the world for metal output. Already in October, 2008, the company reduced production on the Rockdale plant, Texas, USA, by 265 thousand tons. Altogether in the second half-year, the company was planning to cut down production by 615 thousand tons. of aluminium per year. It should be reminded that just in 2007 the company produced 3.7 mln. tons of aluminium and the revenue constituted \$30.7 bln., while the net profit equaled \$2.6 bln.

In 2009, Alcoa Inc intends to reduce its production of primary aluminium by 18 %, or by 750 thousand tons. In April-May, the payload of the production facilities was brought down 20 %. The reduction of the company's workforce was 13 % (approximately 13.5 thous. people). Apart from this, the company is going to sell a number of non-core assets. Alcoa Inc is cutting the production of aluminium at the smelting plant of Portland in Australia by another 38 thousand tons. to 305 thousand tons per year.

Suriname Aluminium Company LLD (Suralco) is going to reduce the production of alumina at the plant of Paranam by 40 %, or by 870 thousand tons. per year. Suralco is a member of Alcoa World Alumina and Chemicals Group. Hydro Aluminium may stop the inefficient plant of Neuss, Germany.

The aluminium market players believe that it is necessary to take extra measures to stabilize the market situation and achieve a balance between the demand for and supply of metal. Undoubtedly, the leading companies may continue scaling down the production of aluminium due to the fact that the world economic situation in the first half of 2009 did not improve but only became stable. According to the evaluations of Norsk Hydro ASA, the world may expect further production decline. The company reduced the production of aluminium at the plants in Norway, Germany and Slovakia due to the shrinking demand for metal on the part of carbuilding and construction industries, the fall of aluminium prices to the extreme minimum over seven years and the four times' growth of the world warehouse stocks of aluminium in the previous year.

Aluminium Bahrain (Alba) has postponed the implementation of its plans to expand production capacities to 1.2 mln. tons per year.

Still obscure is the situation with the implementation of the project for building a smelting plant to produce aluminium by Dubai Aluminium Co (Dubal) in King Abdullah Economic City, Saudi Arabia. According to Dubal estimations, aluminium sales by the company in the second quarter of 2009 may fall by 20 % compared to similar period of the previous year.

Sohar Aluminium, Oman, which are partially owned by Rio Tinto, has suspended the construction of the second line of the plant.

Aluminum Corp of China Ltd, which the world's third rated producer of alumina, has temporarily suspended its alumina production facilities of 4.11 mln. tons at 4 plants in the provinces of Henan, Shanxi and Shandong from November, 5. As a result, Chalco has cut down its alumina output by approximately 685 thousand tons. in November-December, 2008 alone.

Already by the beginning of November, 2008, on the whole Chalco temporarily suspended its alumina production facilities for the total of 4.11 mln. tons per year (38 % of the

existing capacities), including 0.64 mln. tons per year in Zhongzhou Branch, 1.10 mln. tons - Shanxi Branch, 1.17 mln. tons - Shandong Branch and 1.20 mln. tons - Henan Branch.

The closure of alumina production facilities followed the simultaneous stopping of facilities for the production of aluminium of 720 thousand tons. at the plants in China by Chalco in October due to the low level of prices on metal and reduction of demand. In China, overall in this period there was a temporary suspension of aluminium production plants with the total capacity of about 1 mln. tons, which constitutes about 6 % of the general domestic capacities. Suspension also concerned alumina production facilities of about 7.7 mln. tons per year of 36 mln. tons per year (as of the year end).

The reduction of the aluminium production in the last quarter of the previous year entailed the lowering of the demand for alumina, the output of which, as well as the mining of bauxites, started to go down.

“RusAl” is forced to suspend temporarily its alumina production at the plants in Italy (Eurallumina) and on Jamaica (Windalco).

Nevertheless, China may commission new alumina production facilities, which are integrated with smelting facilities. This will allow a less costly metal production. Apart from China, a number of new facilities are expected to be commissioned in the world, including in Brazil and Australia. According to some information, the growth of alumina production facilities worldwide just in 2009 may constitute 5 mln. tons per year, and in 2010 – another 6 mln. tons per year.

By the results of 2008, China has increased the import of primary aluminium by 9.23 % to more than 121 thousand tons. At the same time, export shipments of primary aluminium has experienced a dramatic reduction and constituted slightly more than 110 thousand tons. (decline by 31.51 %). To a certain degree, this is connected with a more stable situation on the Chinese aluminium market.

China has cut the import of alumina – by 10.51 % to 4.86 mln. tons, which was conditioned by further expansion of its domestic output. At the same time, China has boosted procurements on the world market of bauxites – by more than 20 %. The major suppliers, Indonesia and Australia, have expanded supply to the Chinese market last year, while India, on the contrary, cut it down.

In the second half of 2008, there was a remarkable increase in the import of aluminium scrap in China. Consequently, by the results of 2008, the growth in the import of scrap exceeded 3% to reach almost 2.2 mln. tons. Aluminium scrap supply to China has been expanded by all the major exporters, including Spain (by 52.32 % to 699.23 thousand tons.), USA and Australia.

The export of primary aluminium and aluminium alloys from China, which is their largest producer and consumer in the world, has fallen by 31.51 %, according to the results of 2008. This is largely connected with the August introduction of a 15 % duty on the export of this metal and with the smaller demand for it on the world market as well as with the fall of price levels.

At the same time, China has increased the supply of aluminium alloys to the world market (by 90.12%) and aluminium products – by 2.1 to 1.9 mln. tons

At the beginning of 2009, the demand for nonferrous metals in China is rather active, which has led to the increase in the import of primary aluminium in the economy. By the results of January-April, 2009, the import of primary aluminium in China experienced a steep rise compared to similar period of the previous year and exceeded 478 thousand tons. Noteworthy that by the results of the whole 2008, the import of primary aluminium into the economy was just 121.6 thousand tons. Though, the situation that has occurred in China has been advantageously used by Russian and Australian suppliers. The shipments of Russian primary aluminium to China in January-April, 2009 constituted almost 114.4 thousand tons. The low price level on primary aluminium allowed Chinese businesses to increase the import of primary aluminium and its alloys, with a slight reduction in the import of scrap, alumina and bauxites.

Foreign Trade in Aluminium, Alumina and Bauxites in China, t.

Product	2008	Difference from 2007, %	January-April, 2009	Difference, % from January-April, 2008
Import				
Primary aluminium	121,642	9.23	478,155	875.96
Including:				
Australia	19,614	-40.61	77,924	921.59
Russia	74,013	370.26	114,399	269.73
Aluminium alloys	138,460	-18.92	70,750	40.4
Including:				
Chinese Taipei	45,485	-24.94	16,148	-9.12
UAE	21,504	-35.36	4,505	-43.85
Australia	9,525	-20.92	3,588	6.14
Aluminium scrap	2,154,846	3.07	520,887	-27.47
Including:				
Spain	699,229	52.32	141,779	-34.79
USA	389,923	2.32	69,535	-49.42
Australia	258,216	27.84	56,115	-55.08
Alumina	4,856,007	-10.51	1,672,425	-2.57
Including:				
Australia	3,889,681	-9.9	1,543,129	6.79
India	635,477	6.68	90,492	-64.89
Bauxites	21,433,054	20.35	4,091,483	-53.14
Including:				
Indonesia	17,090,295	11.13	2,826,614	-40.38
Australia	4,987,550	116.22	1,148,607	-25.7
India	3,515,556	-32.98	154,640	-30.5
Export				
Primary aluminium	110,127	-31.51	3,794	-82.82
Aluminium alloys	731,165	90.12	39,063	-80.41
Including:				
Japan	239,350	58.88	19,639	-75.94
Hong Kong, China	107,741	20.89	9,815	-71.52
Indonesia	30,612	113.09	3,483	-62.5
Aluminium scrap	891	-67.16	279	18.98
Alumina	44,142	38.49	15,351	68.86

Sources: IAI [15]

At the same time, the low demand for aluminium on the world market has resulted in the reduction of exported of primary aluminium and alloys.

The aggravation of the world economic situation and the fall of prices on and demand for aluminium have left many businesses with remarkably worse financial indicators both by the results of the last quarter and the entire 2008. No improvement was seen there on the background of the low demand for and price levels on aluminium also by the results of the first quarter of 2009.

In these circumstances businesses are reviewing their investment programmes, decommissioning inefficient enterprises and implementing measures to cut down production costs.

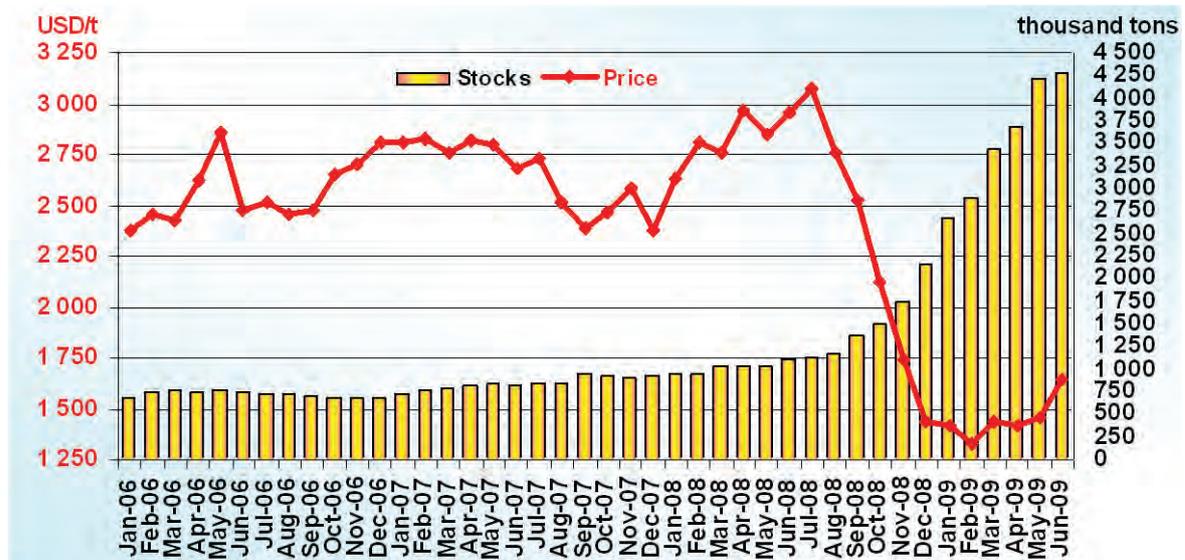
The American Alcoa Inc., the US largest aluminium producer, has closed the year 2008 with the net loss of \$74 mln. Noteworthy that in the previous year the company's profit surmounted \$2.5 bln. Particularly grave were the company's losses in the fourth quarter. The increment in losses was conditioned by the continuing decline of metal prices (by 35 %) and the

shrinking demand on the part of consumers, specifically car building and construction industries. Overall in the second half of 2008, the prices on aluminium at LME have gone down by 56 %.

With a view of minimizing losses in 2009, the company is taking various measures, including reduction of production volumes, workforce, investments in the development etc. The company is expected to make a 50 % cut down of investments upon by the results of 2009.

Metallurgical enterprises are burdened by extensive taxes, which has an utterly negative influence on their current situation and future prospects. For example, The Russian RusAl's debt equals \$16.8 bln. This includes indebtedness to the Russian banks in the amount of \$2.1 bln., debt to Onexim Group by Mikhail Prokhorov in the amount of \$2.8 bln. (which is agreed for restructuring), debt to Vnesheconombank of \$4.5 bln. and indebtedness to the Western creditors of about \$7.4 bln.

Aluminium Prices at LME



Source: LME

Russia's key creditors of the company are Gazprombank, RF Sberbank and VTB. RusAl's indebtedness to each of the banks is \$600-700 mln. Significantly less - about \$90 mln. - is RusAl's debt to Alpha-bank.

Aluminium stocks at LME continued to grow in January, 2009. Already by the end of the second decade of January, they surmounted 2.64 mln. tons, and by the end of the month - the stocks went over 2.8 mln. tons. This is even more than the level of June, 1994 - 2.66 mln. tons. In February-May, metal stocks at LME maintained their growth rates, having achieved the record level in May-beginning of June - over 4.2 mln. tons. At the same time, IAI records a decrease of the warehouse stocks of aluminium worldwide in February-April this year.

Businesses of the world have announced production cutdown, including China, which is the leading producer of aluminium. But the drop of automobile sales in the world as well as negative forecasts for the development of the world economy, have resulted in the situation where the consumption decline outstrips metal production cutdowns, and until the achievement of a balance between demand and supply, we cannot expect stabilization of price levels for the metal. The situation may change only with the continued production decline and growing demand.

The January prices on aluminium went even below the level of July, 2003 (\$1,378/t) and at the end of the month were \$1,309/t (Cash). Generally, over the period of January-May, 2009, the minimum price levels for primary aluminium were registered within \$1,288.25/t for three months delivery, and maximum - \$1,574.75/t. In May, the average price levels for aluminium at LME for three-months delivery were \$1,496.96/t.

13.2. APEC Role in the Global Aluminum Market

The role of APEC economies in the global aluminum market is particularly important. This role is predetermined by a number of APEC economies which occupy a lead global position in aluminum production and consumption. Over the last few years APEC participants have increased aluminum output and consumption. The role of China which is at present the leading global aluminum producer and consumer has been particularly crucial. As far back as in 2000, the role of China in the global aluminum production and consumptions was quite limited.

During 2000-2008 APEC share in the global production of primary aluminum had a growing tendency. As far back as in 2000 APEC share amounted to 60 %, while in 2008 it exceeded 66 %.

It ought to be noted that APEC includes most economies with significant production of primary aluminum with exception for Brazil, Norway, India, Bahrain and South Africa. Even despite the reduction of primary aluminum production by individual APEC economies, the share of aluminum in the global production of metals in 2008 remained on the same level as last year.

China has contributed the most to the change of the global aluminum market. China's share in the global production of aluminum increased from 11% in 2000 to more than 33% in 2008. During 2000-2008 China increased production of primary aluminum by almost 4.7 times.

Consequently, the role of APEC in the global consumption of primary aluminum increased as well. Moreover, the role of China in the global consumption of aluminum increased dramatically during 2000-2008. As far back as in 2002, China's share in the global aluminum consumption was only about 16%. However, by 2005 it reached 22%, and in 2008 it equaled 33%. Accordingly, APEC share in the global aluminum consumption increased from 56% in 2002 to 59% in 2005 and 63% in 2008. The growth of APEC share in aluminum consumption is primarily due to the change of the situation in China, which is presently the largest global consumer of aluminum.

Global primary aluminum production (thousand tons) and APEC share in metal production (%)

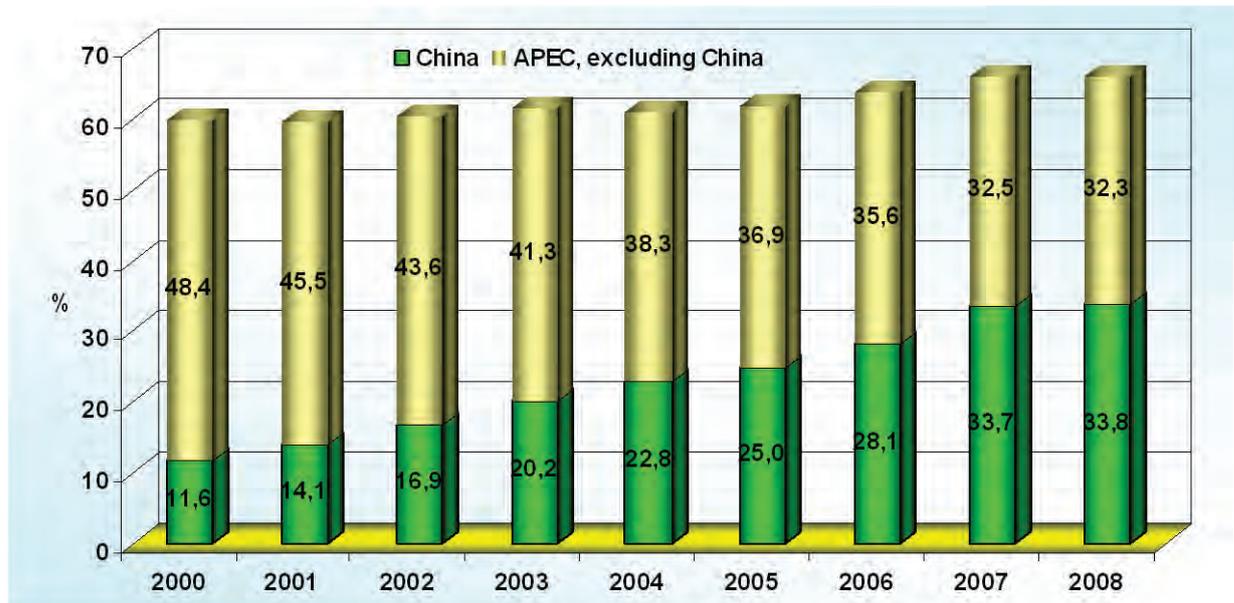


Source: WBMS, Economist Intelligence Unit

A number of APEC economies possess significant reserves of bauxite, as well as alumina production capacities. APEC share in bauxite production during 2000-2008 remained practically

unchanged, amounting to about 50%. Notably, China's share of bauxite production has increased from 7 to 15%. Accordingly, the share of other APEC economies in the total production of bauxite declined. Given that the share of bauxite production by APEC has not increased against the global production, while the share of APEC economies grew, they were forced to increase bauxite purchase from other economies.

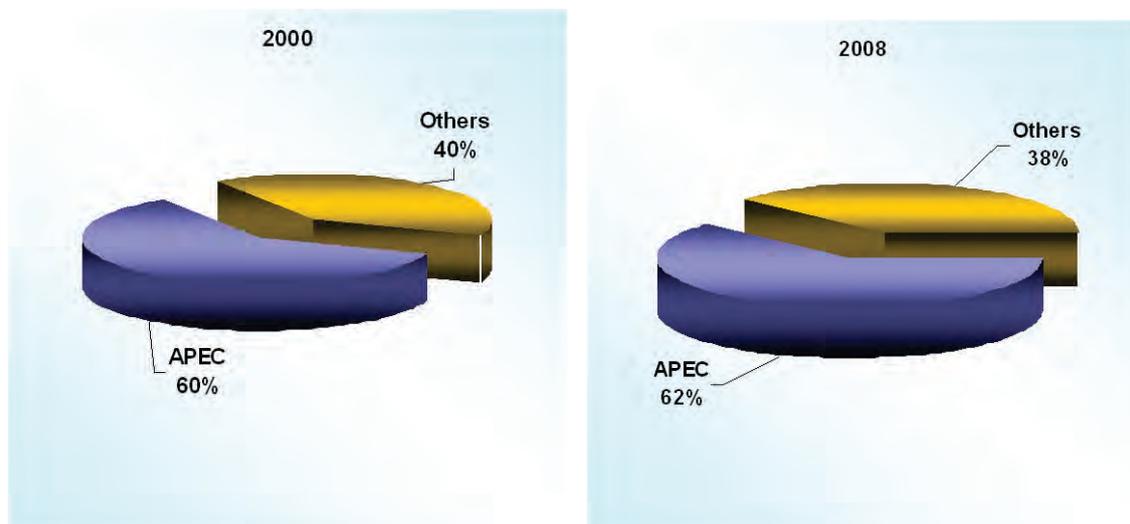
APEC share without China and the share of China in the global production of primary aluminum, %



Source: WBMS, Economist Intelligence Unit

Production of alumina has been impacted in a similar way. In this context it is important to emphasize the growing role of China in the global alumina production. The economy is actively creating new production capacities that are capable of meeting the needs of the growing domestic aluminum production. By 2010 Chinese alumina production capacity is expected to reach 35 million tons per year (against 32 million tons at present). An important factor in the development of alumina production in China is the decentralization of alumina output in the economy.

The share of APEC in the global alumina production



Source: U.S. GEOLOGICAL SURVEY, IAI

The share of China in the global alumina production increased from 9% in 2000 to almost 26% in 2008. During this period Chinese output of alumina grew from 4.3 to 22.8 mln. tons Alumina production in other APEC economies grew as well, particularly, in Russia and Australia. However, compared to the expansion of output in China this increase was insignificant. As a result, the share of other APEC economies in the global alumina production declined.

13.3. Global Lead Market

Similarly to other non-ferrous metals markets, the trend of the lead market has been experiencing gradual production and consumption increase in recent years. Furthermore, This the market environment is largely effected by the changes occurring in lead production and consumption of in China. With deteriorating global financial crisis, global metal production and consumption was on the downward trend during the last months of 2008.

However, based on the results of 2008, there has been an increase in the global production and consumption of refined lead, as well as metal production.

According to the International Lead and Zinc Study Group (ILZSG), summarizing the results of 2008, global refined lead production increased by almost 6.8% as compared to the previous 2007, and reached 8.67 mln. tons It should be noted that even based on the results of the 11 months of last year, steel output growth amounted to 7.6%, thus, confirming metal production decline during the last months of 2008.

The growth of global production was primarily due to output increase in economies such as China, Australia, Canada, India, Korea, United Kingdom. This has largely compensated production decline in other economies. Thus, lead production in Russia, including secondary lead, declined by 14.7% based on the results of 2008.

However, global lead consumption grew at a much slower rate, thus, causing lead surplus on the market based on the results of 2008. Lead consumption growth was 5.6% and equaled 8.648 mln. tons. Therefore, the oversupply was about 23 thousand tons In previous years, global refined lead market experienced deficit. According to the year-end results of 2007 the deficit on the global lead world market was estimated at approximately 77 thousand tons

Growing global lead demand has been mainly associated with the expansion of lead consumption in China. Overall, global refined lead production increase was primarily predetermined by the growth of Chinese output last year.

It is worthwhile noting that lead consumption decline in Europe, Japan, Korea, India and several other economies was more than offset by further growing demand in China and a slight growth in the United States.

In the first quarter of 2009, a slight increase in the global refined lead production was noted amounting to 0.8% accompanied by 0.9% consumption decline. As a result, the over-supply in the global market increased to 33 thousand tons, while a slight lead deficit (1 thousand tons) was noted in the first quarter of 2008.

Global lead mining, production and consumption (according to ILZSG), thousand tons

	2004	2005	2006	2007	2008	2009	2008	Differen ce, %
						I q	I q	
Lead mining	3,130	3,421	3,525	3,610	3,915	842	887	-5.1
Refined lead production	6,998	7,632	7,925	8,112	8,671	2,040	2,024	0.8
Lead consumption	7,296	7,801	8,071	8,189	8,648	2,007	2,025	-0.9

According to ILZSG, Economist Intelligence Unit

Global refined metal production growth was due to the production increase in China. In January-April 2009, China significantly increased its refined lead production, namely by 23.7%

thus amounting to 1,074 mln. t, as compared to the same period last year. However, April lead output fell by 9.82% as compared to March amounting to 302,3 thousand tons, although, it was 13.5% increase against April last year.

This being said, other regions experienced a decline in the lead production. Refined lead production decline in the first quarter of 2009 was noted, particularly in Australia, Italy, Germany, the United States and Japan.

The demand for refined lead in the first quarter of 2009 declined significantly in some major consuming regions and economies. Thus, according to ILZSG, during the first quarter of 2009 the demand for lead in Europe decreased by 16.8%, in the United States –by 12.8%, in Japan - by 40.3%, in Korea - by 22.9%. However, this decline was offset by the increase of lead consumption in China. During the first quarter of 2009, apparent lead consumption in the economy increased by 27.9%. As a result of that, global demand for lead declined by only 0.9% based on the results of the first quarter of 2009.

During the first quarter of 2009 global lead mining lowered by 5.1% as compared to the same period of last year. Moreover, lead mining volume declined not only in Australia and the United States, but in China as well.

In China, production of lead concentrate fell by 3.6% during January-April 2009 over the same period of last year and amounted to 320,7 thousand tons. Moreover, lead mining in the economy fell by 10.22% and amounted to 96,6 thousand tons. as compared to the same period last year.

It should be noted that in 2008 global lead mining increased by 8.4% as compared to 2007 and equaled 3.915 mln. tons (against 3,61 mln. tons a year earlier).

Increased lead mining was noted in Bolivia, China, Peru, and Sweden. Against the overall mining output increase during the last year, a decline has been noticed over the last few months. If in August lead mining volume amounted to 339,4 thousand tons, as early as in October it fell to 324,6 thousand tons, and in November it reached 317,7 thousand tons. Having said that, a slight increase in lead mining was noted in December, followed by decline in January-March 2009. For example, lead mining in January amounted to only about 270 thousand tons.

Amid the global financial crisis and low lead prices, a number of companies had to reduce their mining volume.

During the first months of 2009, BHP Billiton, CBH Resources Perilya, Xstrata and a number of companies in the United States had to completely stop their production.*

Xstrata mining company has reduced its lead mining at McArthur River mine (lead-zinc) in the north-eastern Northern Territory of Australia.

As early as in December 2008, Glencore reported on the possibility of 20% staff reduction in the first quarter of 2009, affecting the personnel employed in Peru assets. The operation of Rosaura mine (zinc-lead) had to stop. The company owns the total of three lead and zinc mines in Peru. Glencore had to temporarily suspended operations of Portovesme in Sardinia with production capacity of 80 tons of lead per year. The company is carrying out repair operations.

Much of the lead output (up to 68%) is geared toward the production of car batteries. Thus, its use is largely determined by the trends of automobile manufacturing industry. Automobile manufacturing challenges in the US had a negative impact on the overall lead consumption in this economy. Substantial funds were allocated in order to support the front-running automobile companies in the United States. However, these funds failed to produce a dramatic change in the domestic automobile industry. The economy continues to experience a decline in automobile production, which has a negative impact on the domestic lead consumption. A similar situation occurred in the automobile industry in Europe and in Japan.

The lead market largely depends on the demand for car batteries, which are used to replace the old ones which operating lifetime has expired. The replacement of old car batteries

*Xstrata and CBH Resources Perilya in fact did produce lead in Q1 of 2009 (commented by Australia)

alone ensures about 40% of lead consumption, and the demand for replaceable batteries is growing.

According to the Battery Council International, shipping volume of replacement batteries to the North American economies increased by 12% in November-December 2008. This being said, the manufacture of car batteries fell in the past year due to the production decline in the automobile industry, primarily in the United States. Car batteries shipping in 2008 declined by 14% and amounted to 17,3 mln. tons. This decline continued even during the first months of 2009, amidst the global decline of automobile production and sales.

In February 2009 alone, automobile sales volume in the United States fell by more than 41% compared to the same period last year. Car sales drop in the United States has continued for more than a year and a half. Leading US companies, including General Motors (GM) and Ford, reduced their production targets for the second quarter of 2009. Sales volume of Toyota, Nissan and Honda cars dropped dramatically.

Automobile production decline in the United States in 2009 is expected to result in decreased demand for lead as compared to the previous 2008. According to Economist Intelligence Unit, despite the growing demand for replacement batteries, US lead consumption will decline as a result of the current year by 5%. In 2008, lead consumption in the USA increased by nearly 4% as compared to 2007. In the last 2008, refined lead consumption once again declined nearly by 5.6% in the EU and reached 1,68 mln. tons (against 1,78 mln. tons. in 2007). Lead consumption in EU in 2009 is expected to experience another decline against the decreasing production volume of the automobile industry in the region. In the early months of 2009 a decline of automobile production and registration was observed in the European economies.

According to Economist Intelligence Unit, based on the results of 2008 the demand for refined lead fell in the US, EU economies, Japan and Korea, but increased in China and India. Overall global lead consumption increase is estimated at 4.5% against the previous year, despite the negative impact of the financial crunch and decline in demand in the fourth quarter. In 2009, a significant increase in the lead demand is expected due to the increased consumption in China, India and several other economies.

Global lead consumption, thousand tons

Region	Years				
	2006	2007	2008	2009 *	2010**
Total	8,068	8,181	8,706	8,615	8,815
Including:					
EU (27 economies)	1,810	1,780	1,680	1,640	1,660
China	2,213	2,573	3,211	3,250	3,350
USA	1,622	1,510	1,570	1,485	1,500
Korea	337	342	318	315	325
Mexico	271	235	217	215	230
Japan	303	279	268	260	250
India	170	175	184	190	205
Chinese Taipei	135	111	84	85	95

*Estimate ** Forecast, ILZSG, Economist Intelligence Unit

In 2008, China experienced rapid growth of lead consumption which resulted from capacity expansion of car batteries manufacture. A number of companies were expected to boost their production batteries production capacity by 20% in 2008 in view of the continuing development of the automobile industry in the economy.

With continuing growth of lead production, China increased its import of refined lead and lead concentrate in 2008. At the same time export volume of refined lead declined. It is clear that growing domestic lead production accompanied by the lack of raw materials resulted in a significant increase of lead concentrate import. In 2008, lead concentrate import in China increased by 14,1% compared to the previous year and amounted to nearly 1,445 mln. tons

However, in December last year was a decline in import volume was observed amounting to 106,1 thousand tons of concentrate. China purchases large volumes of lead concentrate in Australia, Peru and the United States. While lead concentrate import from Australia slightly declined in the past year (up to 1.13%), import volume from the United States and Peru increased by 16.91% and 16.06% to amount 261.9 and 220.13 thousand tons. respectively. Lead concentrate supply from Russia increased as well (by 26% amounting to 90,74 thousand tons) and Canada (by 20.11% amounting to 40,74 thousand tons).

Lead concentrate import to China, thousand tons

Economy	December 2008	2008	Difference against 2007, %	Jan-Apr. 2009	Difference with Jan-April 2008, %
Total	106,12	1, 444,965	14.2	440,727	8.1
Including:					
USA	5,953	261,884	16.91	38,199	-9.9
Peru	14,312	220,13	16.06	96,422	41.3
Australia	16,854	129,292	-1.13	46,207	35.8
Russia	5,316	90,742	26.0	26,163	52.3
<i>Customs clearance</i>					

Import of refined lead to the economy in 2008 increased by 23.41% and amounted to 30,913 thousand tons. The main refined lead supplier to the Chinese market is Australia, which accounted for almost half of the lead import volume to China. Furthermore, during the last year refined lead was also supplied to China from Kazakhstan (0,85 thousand tons), Korea (3,42 thousand tons), and Japan (3,35 mln. tons).

China continues the construction of new refined lead production facilities. Jiangxi Jinde Lead Industry has built a smelting plant with annual production capacity 80 thousand tons. Shaoguan expanded annual production capacity by 40 thousand tons. to reach 100 thousand tons per year.

However, it should be noted that shutdown of lead production plants occurs as well. To a large extent it is related to the high cost of production. In October and November 2008 alone, several companies reported decommissioning of a number of lead production plants, including Hechi Nanfang Nonferrous (80 thousand tons. per year), Liaoning Jingzhou Jingxing (30 thousand tons per year), and others. Some facilities were shut down for repair works.

China continues to reduce its export supply of raw lead. In 2008, the export volume amounted to only 33,6 thousand tons, which is 85.8% lower than the same period last year. In December alone lead export amounted to 1,73 thousand tons. The main consumers of Chinese lead are Asian economies including Thailand, Chinese Taipei, Indonesia, Singapore, Korea, Japan.

During the first months of 2009, China significantly increased its lead procurement through import, even despite the substantial increase of the domestic lead production based on the results of January-February this year.

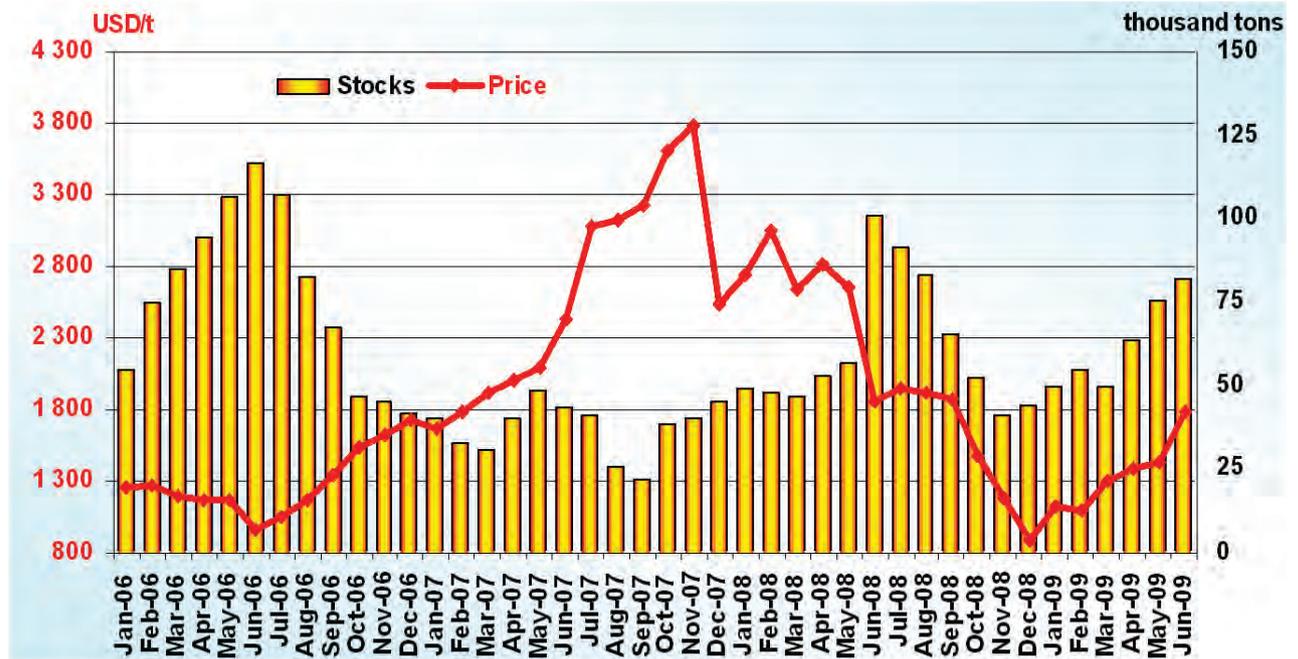
During January-April 2009, Chinese total refined lead import volume amounted to 84,677 thousand tons which is more than 1000% higher against the same period last year. According to the results of January-April this year, China also increased its lead concentrate import volume 8% to amount 440,727 thousand tons.

At the same time, Chinese lead supply to the global world market in January-April 2009 decreased by 84.41% to 4,218 thousand tons.

Today, China accounts for up to 35% of global lead consumption. According to the estimate of Economist Intelligence Unit, lead consumption in China will grow in the next two years, however, the growth rate will be slower as compared to 2008. Despite the fact that China

remains the largest lead consumer, it has to import large volumes of the metal and lead concentrate. China is a net importer of lead.

Lead prices at LME



Source: LME

Overall, according to the estimate, global lead consumption in 2009 may decline by about 1% compared to 2008 and the restoration of the demand is expected no earlier than in 2010.

During the first months of this year, global lead market environment was predetermined by the reduced supply against the strong demand on the part of China and low reserves inventory, as compared with the mid-2000.

As early as in March, lead prices and LME increased by approximately 25% against the end of December previous year and amounted to approximately \$1300 per ton (cash). Analysts forecast an increase of the lead price in the global market due to increased demand of Chinese consumers.

At the end of 2008, the global lead market experienced a significant decline in prices. The bottom was hit in December, when prices dropped to the minimum level for the past three years - \$ 854 / t (19 December). This was the lowest price since September 2005. Three months futures contract at the end of December 2008 amounted to only \$ 999 per ton, which was significantly lower than the end of November, when the price was \$ 1110 / t and, accordingly, in December 2007 - \$ 2550 / t. However, beginning with January lead prices began to consolidate.

LME lead reserve slightly grew in December of 2008 and reached 45,15 thousand tons at the end of the month as compared to 41,6 thousand tons at the end of November. In January and February LME lead reserve volume grew. However, it was still considerably lower against the reserve volume of the middle of last year (over 100 thousand tons). In April-May LME lead reserve volume remained on the upward trend accompanied by the lead price growth.

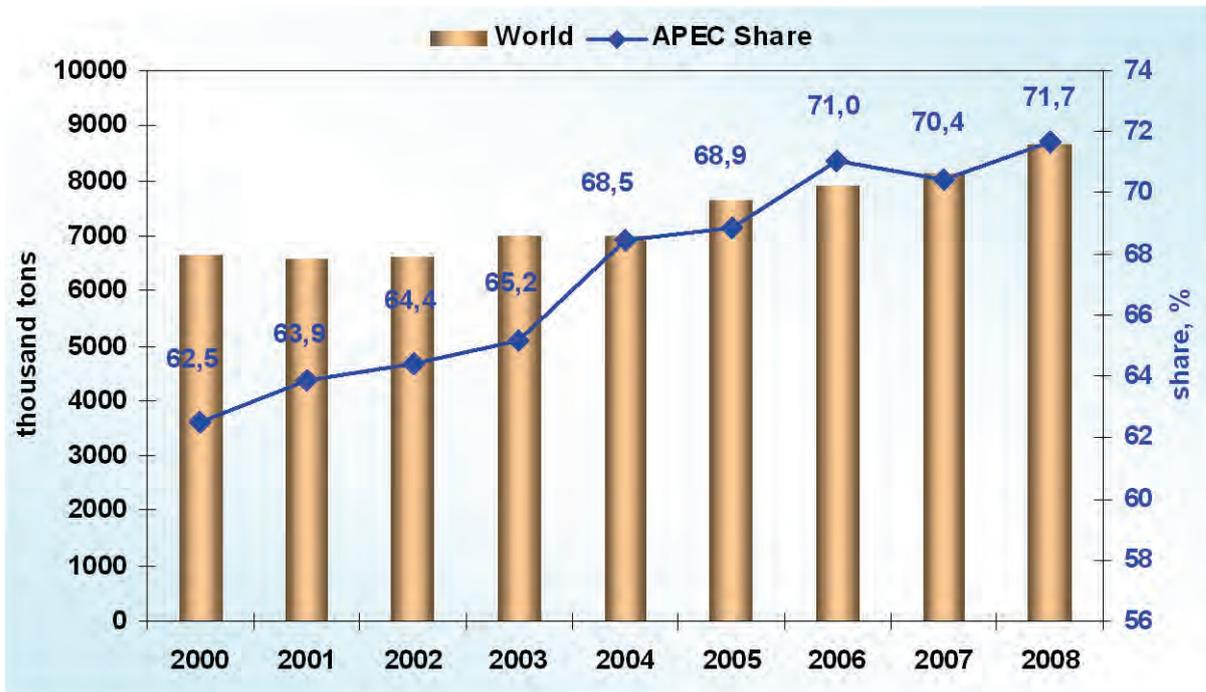
APEC Role in the Global Lead Market

The role of APEC economies in the global lead market is as great as its overall role in the markets of ferrous and nonferrous metals. APEC includes most major lead producers and consumers, except European economies.

This leading role is underpinned by those APEC economies which occupy a key position in the global lead production and consumption. Lead consumption is largely determined by the trends of the automobile industry and batteries production. APEC economies represent the

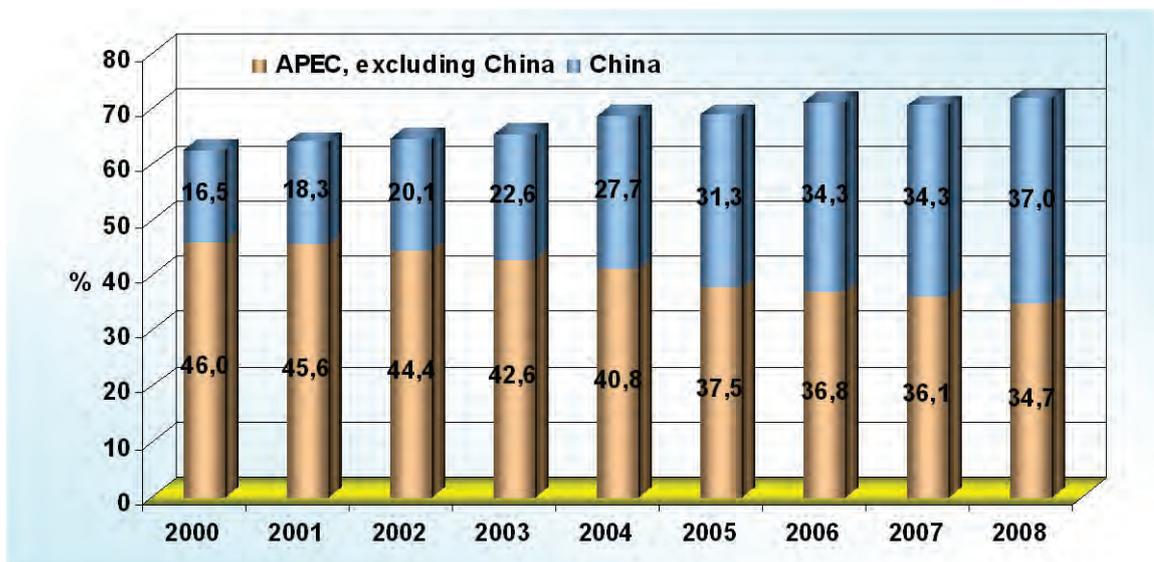
largest global car manufacturers, along with the European economies. At the same time, automobile industry and car batteries production are rapidly developing in China. All of these factors contribute to the crucial role of APEC in the global lead market.

Global refined lead production (thousand tons.): the share of APEC in the global output (%)



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY

The share of APEC excluding China and the share of China in the global refined lead production, %



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY, RUSMET

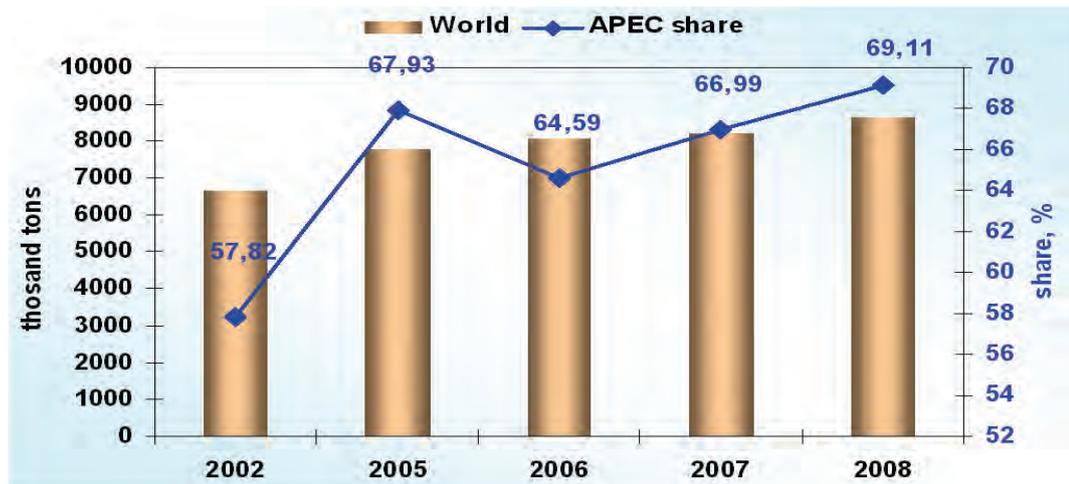
Obviously, refined lead consumption to a large extent is concentrated within APEC economies. With that, the share of China in the global lead consumption continues to grow. The increase of car batteries production in the economy against a relatively low manufacturing cost attracts foreign manufactures the economy. As a result, the share of China in the global lead consumption increased from 14% in 2000 to 37% in 2008. Such growth of China share may, of course, be attributed to the global economic crisis, which led to the reduction in lead consumption by different other economies, in particular the EU, Korea, Japan and several others.

To some extent this is true, as China has become one of the few economies which, summarizing the results of the last year, increased the production of ferrous and nonferrous metals against the overall production failure in the fourth quarter of 2008.

Priming the economy in China produced some of the best results in the world. The economy focused on the expansion of domestic consumption.

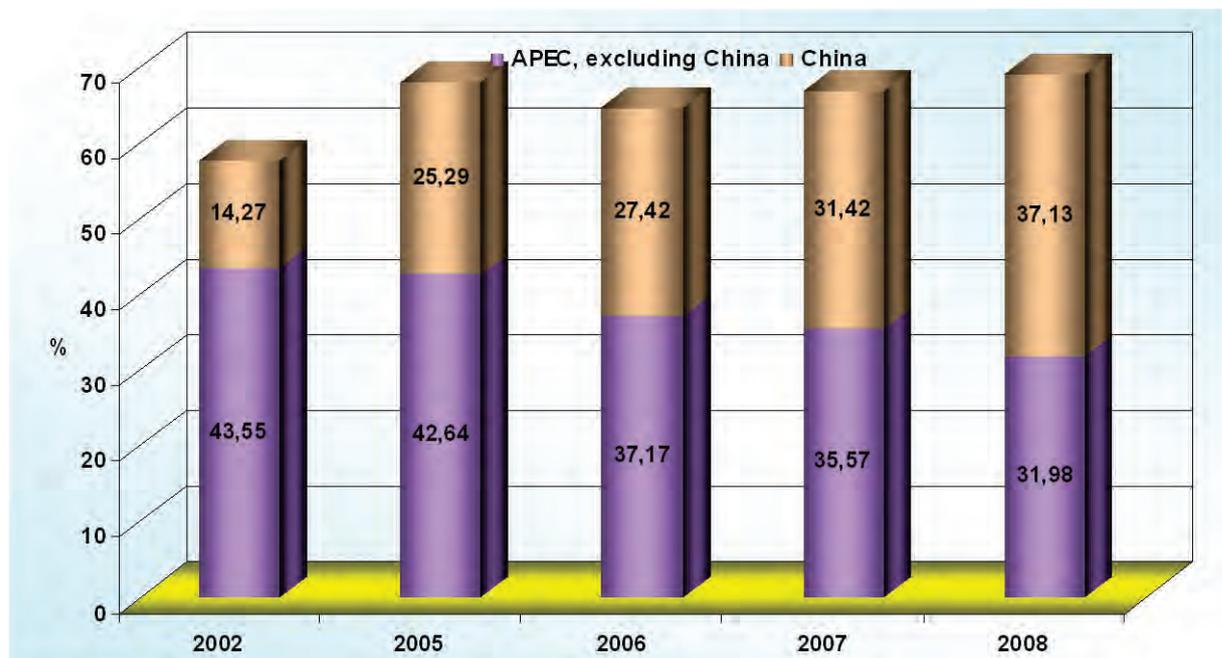
Therefore, lead consumption and production in China may increase in 2009 as compared to 2008, unlike in most other economies and regions. This will lead to further increase of the value of China, and hence, the role of APEC as a whole in the global production and consumption of lead.

Global production and consumption of refined lead (thousand tons) and the share of APEC in the global output (%)



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY

The share of APEC excluding China and Chinese share in the global lead consumption, %



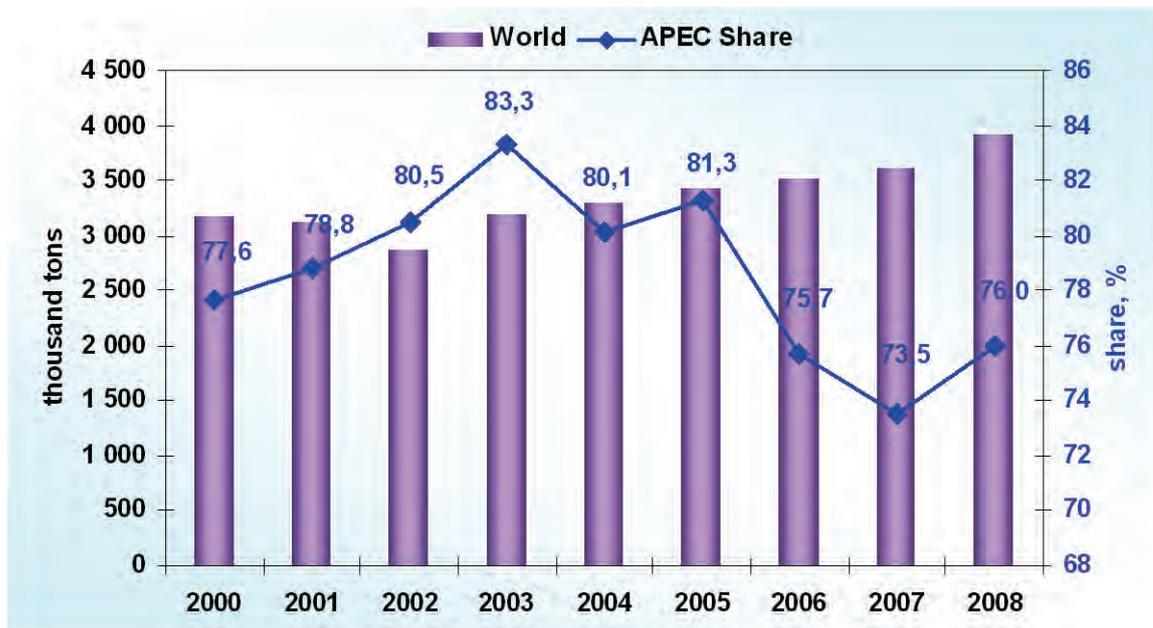
According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY, RUSMET

APEC economies, and China in particular, pays significant attention to the development of the raw material base, including lead. Considerable funds are invested in creation of new lead mining and production capacities. As a result of these efforts, lead mining in China has grown significantly over the past nine years, while the share of the economy in the global lead production has increased from 21% in 2000 to 31% in 2008. Among APEC economies, Chile,

USA, Australia and Peru stand out as well, based on their lead mining volume. However, while lead mining in Chile and Peru grew over the last few years, in Australia and the United States it experienced a decline as compared to 2000.

During 2000-2008, the share of APEC in the global lead production varied in the range 75-83 %. Over the last few years the share of APEC in the global lead mining slightly declined as compared to the first half of the decade.

Global lead mining (thousand tons) and the share of APEC in the total mining volume (%)



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY

13.4. Zinc Market Outlook

Global zinc market trends in the recent years have been largely determined by the market development in China - the largest zinc producer and consumer. According to the International Lead Zinc Study Group (ILZSG), in 2007 zinc consumption in China increased by 15.2% to 3,64 mln. tons. The share of China in the global zinc consumption has already reached one third. However, overall global zinc consumption in 2007, excluding China, dropped by 1.3% and amounted to around 7.7 mln. tons. The most significant decline of zinc consumption was observed in the United States (9%), and Chinese Taipei (20%). Less significant reduction in zinc consumption occurred in Korea (3.2%) and Japan (1%).

Further significant growth of the demand for zinc could be expected on the part of China, promoted by domestic production of rolled coated products. In recent years, China has been actively increasing its galvanized metal production capacity, which allowed to significantly reduce the import volume of this product to Chinese market, supported by the domestic production increase.

Further expansion of production capacity and growing output of galvanized metal, largely supported by the growing demand of the automobile industry and manufacture of durable goods, were expected to significantly boost domestic zinc production and consumption in 2008-2009.

However, deteriorating global economic crisis dramatically changed the market environment in 2008. Global production of ferrous metals, including galvanized metals, suffered a sharp fall, especially in the fourth quarter of 2008 and the first quarter of 2009.

Although, based on the results of 2008, China slightly increased its production of steel and rolled products, and in January-April 2009 it was able to maintain the same volume of

ferrous metals production as during the similar period last year. This, actually, prevented a more significant increase of zinc consumption in the domestic market based on the results of 2008 as compared to 2007. However, the growth of zinc consumption in China in 2008 amounted to 11.6% against the previous year.

It is clear that global output reduction of coated rolled products led to the decline of zinc prices and reduction of zinc demand.

Today's global zinc market is characterized by oversupply, low prices, downsizing of the production by a number of steel companies, decommissioning of unprofitable enterprises and staff reductions.

According to the International Lead and Zinc Study Group (ILZSG), based on the results of 2008, oversupply of zinc amounted to approximately 183 thousand tons

Global zinc market environment is aggravated by the reduced demand on the part of the ferrous industry and low zinc prices. Nevertheless, based on the results of 2008, zinc global production increased by 5.7% compared to the same period last year. This was mainly due to the production increase in Bolivia, Canada, China, India, Kazakhstan, Mexico, and Peru.

In 2008 refined metal production increased by 2.7%, despite 6.4% global decline of the refined zinc production in November.

At the end of last year zinc consumption declined in Europe, USA and Japan. However, the total global consumption of the metal increased by 1.8%. It primarily happened on account of China. Growing demand for zinc in the economy made China a net importer of refined zinc based on the results of 2008 and compared to the same period last year when China was a net exporter.

According to NBS, according to the results of 2008, refined zinc production in China increased by 4.3% and amounted to 3,912,9 mln. tons. Thereat, in December alone the increase of the domestic refined zinc production amounted to 3,52% - 315 thousand tons

Production of zinc concentrate, according to NBS, amounted to 3,127 mln. tons, which is 11.4% more than in the previous 2007. Furthermore, in December 2008, zinc concentrate production in China increased by 12.96% against November and amounted to 299,9 thousand tons. This amounted to 0.7% growth against the same period last year.

According to Antaike, based on the results of 2008, zinc concentrate production in China declined by approximately 2% and amounted approximately 3,18 mln. tons.

Global zinc mining, production and consumption (according to ILSG), thousand tons

	2004	2005	2006	2007	2008	2009	2008	Diffe- rence, %
						Q I		
Zinc mining	9,709	10,146	10,444	11,137	11,772	2,501	2,697	-7.3
Refined zinc production	10,392	10,224	10,655	11,360	11,666	2,605	2,852	-8.7
Zinc consumption	10,648	10,611	11,013	11,275	11,483	2,418	2,764	-12.5

Source: ILZSG, Economist Intelligence Unit

As early as during the first quarter of 2009, oversupply of zinc in the global market increased to 187 thousand tons. Zinc stock volume increased as well.

In the first quarter of 2009 zinc mining declined by 7.3%, mainly due to the reduction in Australia, China, Ireland, Peru and the United States. At that time, a reduction of refined zinc production and decline of the demand was noted as well. According to the ILZSG, global refined zinc production in January-March of 2009 fell by 8.7%. Zinc output dropped in Canada, China, Belgium, Germany and in several other economies.

During the first quarter of 2009, the demand for refined zinc declined by 12.5%. The most significant drop in the demand was observed in European economies (at 24.3%), and Japan

(51%). In the United States the demand for zinc fell in the first quarter by 6.5%. The global decline of the zinc demand was only partly offset by 6.4% increase in China. An important contribution in this growth was significant increase of zinc net import to China during the first quarter of 2009 to 207, which reached 207 thousand tons. (net export in the first quarter of 2008 - 1 thousand tons). Zinc concentrate import to China increased to 342 thousand tons in the first quarter (61 thousand tons increase).

Global zinc demand in April and May remained low. However, the reaction zinc producers to the negative changes in the global economy in the form of the reduction of zinc output allow us to expect market balancing and restoration of the demand. Investment in infrastructure development in various economies will stimulate demand for galvanized zinc in the future. Analyst Dan Smith (Standard Chartered) believes that the government measures to stimulate Chinese economy will have a positive impact and will boost demand, including the demand for zinc.

According to ILZSG estimate, oversupply of zinc in the global market at the end of 2009 could be as high as 260 thousand tons due to the decline in demand which has been the most significant, since 1975. Global refined zinc production in 2009 may amount to 11,18 mln. tons, which is 4.0% lower than in previous year, while zinc consumption may fall by 4.9% to 10.92 mln. tons. Companies all over the world continue to reduce galvanized zinc production. Noranda Income Fund was planning to reduce zinc production in May by about 20%.

Even in China, compared to the same period of last year, a slight decline in refined zinc production was noted in January-April 2009 amounting to 2% (1,186 mln. tons.). Refined zinc production in April amounted to 334,9 thousand tons, which was a 2.7% decline against March, but 3.7% increase against April 2008.

However, in late April - May, zinc stock in warehouses began to decline, while depreciation of dollar and tension in global zinc market helped consolidate the prices in the April-May. LME zinc stocks fell to 328,95 thousand tons in April (vs. 344,45 thousand tons at the end of March). By the end of May, LME zinc stocks fell to 323.6 thousand tons.

The year 2009 may bring about further decline of zinc production in the economy against low zinc prices in the global market. Approximately 60% of production capacity in China suspend operations in late 2008. Zinc production decline in the first quarter in China was caused by low prices for zinc. Numerous smelting companies had to reduce their output due to the reduced production volume of zinc concentrate.

At the same time, according to the National Bureau of Statistics, the production of zinc concentrate in China, slightly increased in 2008 as compared to 2007.

According to some sources, production cost of refined zinc in China last year amounted to approximately 9700 yuans/ton (\$ 1,419/t), which has helped increase zinc production capacity and expand production facilities while the prices were still at a high level. In case of zinc price increase to 11-12 thousand yuan/ton, Chinese companies may be able to significantly increase their output.

Korea is the main supplier of refined zinc to the Chinese market. In 2008, refined zinc supply from this economy increased by 81.59% to reach 44,878 thousand tons. The share of Korea in the total volume of Chinese import of refined lead amounted to almost 25% in 2008. Besides, significant volume of refined zinc is supplied to China from Japan (10,8 thousand tons in 2008, - 139% increase), and India (6,4 thousand tons, - more than 5-fold increase).

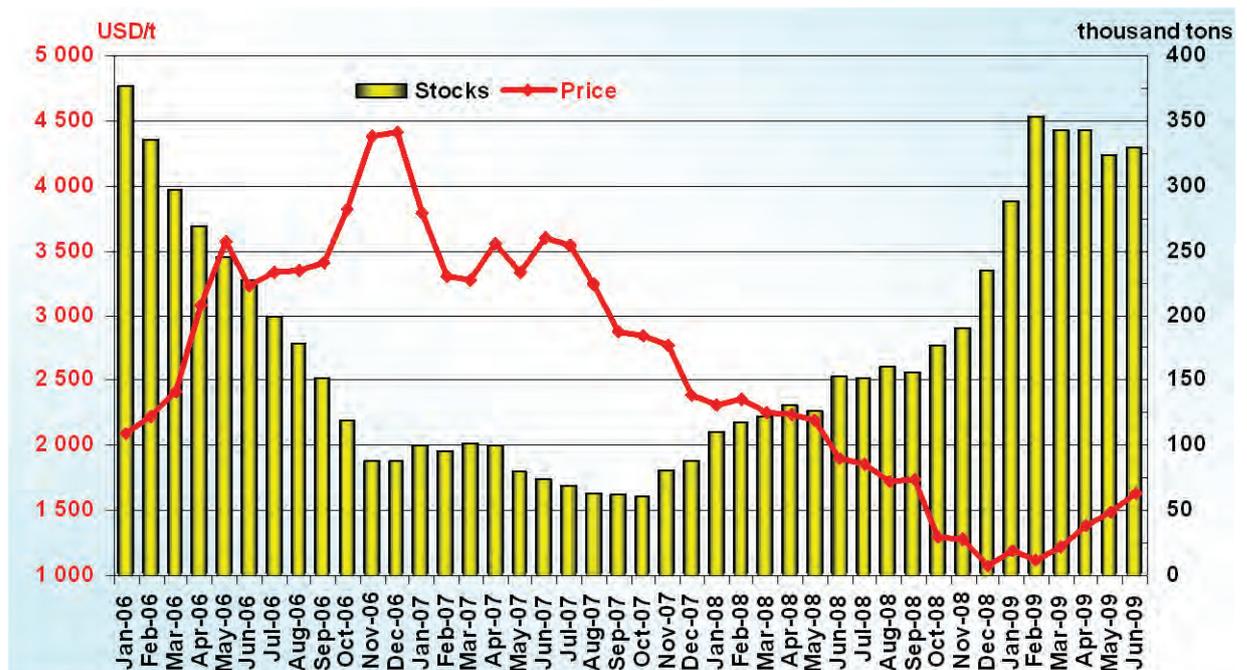
Ore and zinc concentrate import to China in 2008 rose by 10.65% and amounted to nearly 2,4 mln. tons. The main suppliers were Australia, accounting for 821,5 thousand tons (34.4% of total import volume), Peru - 512,4 thousand tons (21.5%) and India - 128.7 thousand tons (5.4%). In addition, raw materials are exported from the United States, Iran, Mexico and other economies.

Import of raw zinc, zinc alloys and zinc concentrate to China, thousand tons

Economy	December 2008	2008	2008 vs. 2007, %	January-April 2009	Difference against Jan-April 2008, %
Refined zinc, total	3,306	183,384	22,67	317,006	798,64
Korea	1,413	44,878	81,59	43,650	335,64
Japan	0,637	10,814	139,33	30,061	679,88
India	0,399	6,426	507,45	41,970	576,74
Zinc alloys, total	9,893	147,483	-32,25	35,363	-27,17
Australia	3,757	59,142	-32,25	13,043	-40,03
Korea	1,956	39,062	28,22	8,865	-23,24
Chinese Taipei	1,790	21,307	4,73	5,918	0,59
Canada	0,683	8,313	63,01	1,797	-30,25
Zinc concentrate, total	262,840	2 384,880	10,65	1,041,168	43,34
Australia	66,264	821,488	23,04	331,963	40,2
Peru	98,152	512,385	271,25	224,651	114,83
Mexico	22,907	98,130	108,51	58,058	427,58
USA	8,622	57,128	0,21	43,000	...
Customs clearance					

At the same time, China reduced its zinc export in 2008. China reduced its supply of refined zinc to the global market 74.13% amounting to 71,318 tons, as compared to 2007. The main consumers of Chinese zinc are Chinese Taipei (39,523 thousand tons), Korea (15,912 thousand tons), and Singapore (10, 838 thousand tons).

In January-April 2009, refined zinc and zinc concentrate import volume increased against import reduction of zinc alloys. At the same time, in January-April 2009, China sharply reduced refined zinc supply to the global world market by 86.3%, against the same period last, thus reducing the supply volume to less than 4,2 thousand tons

LME zinc prices

Source: LME

Global zinc prices continued their decline throughout 2008. Anticipating the financial crunch, three months futures contract zinc price fell in September by 23.6% against the

beginning of the year and amounted to \$ 1,811/t. This was substantially below the all-time-high registered on 9 November 2006 at \$ 4,515/t.

LME zinc price continued its decline and as early as in mid-October it reached \$ 1,450/t. By early December, the price of zinc with the delivery in three months fell to below \$ 1450 / t. By the end of the month the price dropped to \$ 1,038/t. However, in January-May, LME zinc prices increased slightly but still remained at a low level - below \$ 1,600/t (for cash).

The average LME zinc price in May of 2009 amounted to \$ 1,508.39/t. It should be noted, that the minimum zinc price during January-May 2009 amounted to \$ 1,059.25/ton, while the maximum price amounted to \$ 1,588.75 / ton (for cash).

If zinc price growth in 2006 and early 2007 encouraged many companies once again to put into operation earlier decommissioned plants and initiate construction projects of new production facilities, the current situation is quite the opposite. Companies are having to shutdown their production facilities and suspend new projects.

Canadian HudBay shutdown its Balmat mine, while Xstrata and Teck shutdown their joint asset - Lennard Shelf in Australia. Australian Intec has suspended the execution of its Intec Hellyer project in Tasmania. However, these mines alone could produce up to 225 thousand tons of zinc concentrate per year. A number of companies had to revise their production program: Perilya in Broken Hill (New South Wales), OZ Minerals in Golden Grove mine (Western Australia), Lundin Mining, which owns lead and zinc mine Galmoy, - in Ireland. Production capacity of this asset amounts to 70 thousand tons of zinc and 19 thousand tons of lead per year.

In the middle of December, Nyrstar reported on planned 40% reduction of the refined zinc output at its plant in Clarksville, USA. The company planned to reduce the production for the next six months beginning with January 2009. The company reduced zinc production in the first quarter of 2009 by 30% as compared to the fourth quarter of 2008, and intends to substantially reduce production costs of all assets.

According to the estimate, as early as at the beginning of 2009, the total zinc concentrate production capacity volume that was shutdown in Australia amounted to 400 thousand tons

However, not all companies are so pessimistic in their expectations regarding further market development. In the fourth quarter of 2008, Vedanta mining company increased its zinc production to 175 thousand tons of zinc, which is by 26.8% higher compared to the same period last year. Production increase was dictated by the the commissioning of another ore processing complex at Rampura Agucha mine. This enabled the company to increase its refined zinc production in the fourth quarter of 2008 by 11.9%.

Farallon Resources Ltd commenced zinc mining in G-9 mine in the state of Guerrero in Mexico as of 1 April, 2009. At the end of 2009, the company intends to produce about 55 thousand tons of zinc in concentrate.

Brazilian Votorantim still intends to execute capacity expansion of Cajamarquilla smelting complex in Peru, despite low zinc prices on the global market. The company has been upgrading its production facilities which will allow it to double zinc production capacity to 320 thousand tons per year.

Production of zinc concentrate by Xstrata in 2008 increased by 17%, largely due to the commissioning of new mine Perseverance in Canada in the middle of last year. Total 2008 output of zinc concentrate produced by the new mine was 60,265 thousand tons. Total production capacity of the mine is 115 thousand tons of zinc concentrate per year.

Goldcorp has been continuing its construction project of the mine Penasquito in Mexico. Commissioning of the mine is expected in January 2010. Mine production capacity will average 181 thousand tons of zinc concentrate during the entire operating lifetime.

Back in November 2008, China Metallurgical Construction Group put into operation zinc and lead mine Duddar in Pakistan. The mine is expected to produce up to 100 thousand tons. of zinc and 32 thousand tons. of lead in concentrate annually.

China continues to commission new zinc production facilities. However, old, outdated and unprofitable facilities are being decommissioned. In 2009 China is expected to commission

zinc production facilities with operating capacity 670 thousand tons. of zinc per year. At the same time, the capacity of decommissioned facilities is estimated at 500 thousand tons per year. Zinc production capacity of Chinese companies in 2010 is expected to reach 5,26 mln. tons per year, and in 2011 – 5,5 mln. tons per year.

Chinese government will support the manufacturers of the key domestic non-ferrous metals, which will maintain domestic metal prices. In particular, this will be accomplished by zinc procurement for the reserve fund, management of export policies and support of the consumer market.

Shutdown of a number of mining and smelting assets in various economies is needed in order to reduce the oversupply of zinc against the reduced demand. Moreover, the oversupply of zinc in the global market is quite substantial. This should be able to support zinc prices. Back in October 2008, some analysts believed that such actions would not only maintain the prices, but would ensure some increase. Thus, Will Adams (Basemetals) as far back as in October 2008, expecting zinc prices to rise to \$ 1,200-1,300/t., which, in general, not only came true but also proved even greater.

According to Economist Intelligence Unit, 1.5% reduction of zinc consumption should be expected in 2009. Zinc consumption growth is expected in China and India. Global zinc production decline in 2009 is expected at 2%. However, zinc production increase in China will not offset the reduction in the United States, Japan, EU. Restoration of zinc production to 2008 level can be expected as early as in 2010.

Refines zinc consumption estimate, thousand tons.

Economy	2006	2007	2008	2009 *	2010**
Total	10, 975	11,309	11, 570	11, 320	11, 625
Including:					
China	3,115	3, 597	4, 014	4, 100	4,250
EU (27 economies)	2, 438	2, 471	2, 240	2, 200	2,300
India	430	490	490	500	525
Korea	534	512	507	460	480
Japan	594	588	570	535	550
USA	1,153	1, 016	990	930	950
Difference, %	3.4	3.0	1.6	-1.5	3.3
*Estimate,					
**Forecast					
According to Economist Intelligence Unit, ILZSG					

APEC Role in the Global Zinc Market

The role of APEC economies in the global zinc market zinc is as crucial as in the market of other basic metals. This role is determined by the existence among APEC economies of such economies which occupy a leading position in the global zinc production and consumption. Zinc consumption is to a large extent determined by the trends of the ferrous metals industry, specifically, the production of galvanized rolled products. In this regard, APEC members have made a significant step forward in the past nine years.

To a large extent this was due to the increased production of galvanized rolled products in China, which presently remains the leading global producer of ferrous metals. Based on the results of January-April 2009, production of galvanized flat-rolled products in China exceeded 5 mln. tons.

Over the last few years, production of galvanized rolled products in China has been experiencing rapid growth, leading to the increased domestic zinc demand. Back in 2007, the production of galvanized rolled products in the economy exceeded 17 mln. tons It should also be

noted that global production of galvanized rolled products is concentrated in the framework of APEC. Among the five leading global producers of galvanized rolled products four are represented by APEC members including China, United States, Japan and Korea.

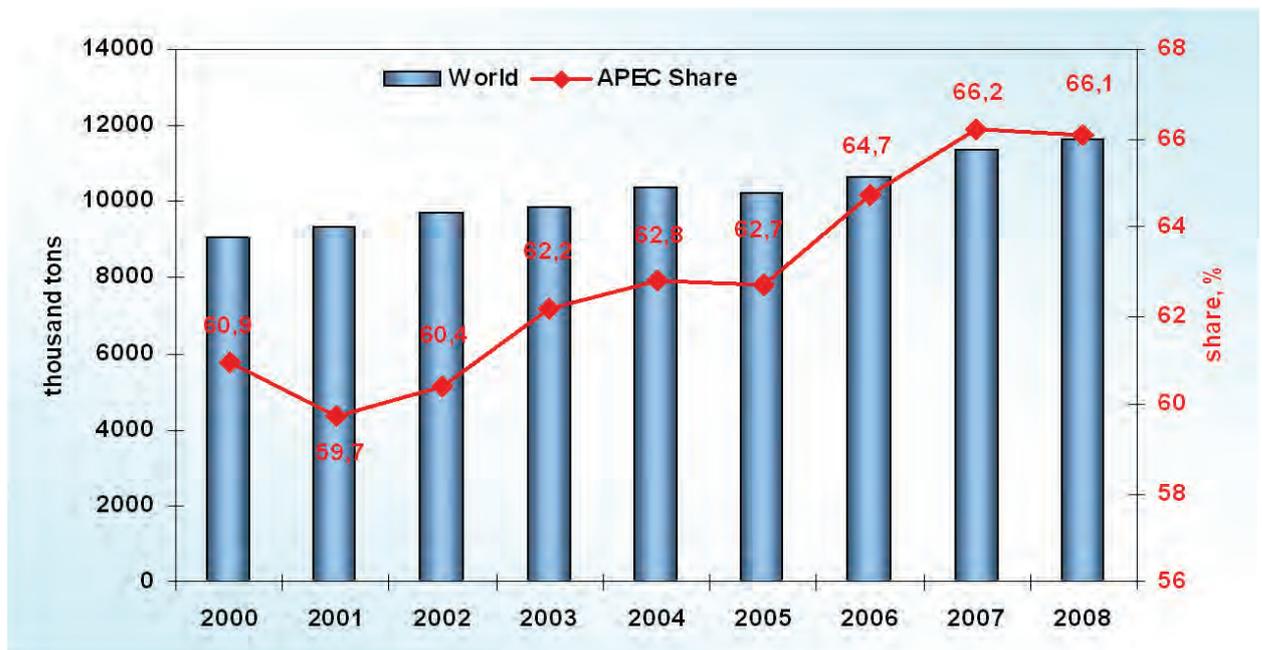
In the past few years, APEC members increased zinc production and consumption. The role of China – the leading global zinc producer and consumer, has been particularly fundamental in this process, while back in 2000, the role of China in the global zinc production and consumption was relatively low.

The share of APEC in production of refined zinc increased from 61% in 2000 to more than 66% in 2008. Moreover, China share in the global production of zinc increased from less than 22% in 2000 to more than 33% in 2008. Domestic refined zinc has doubled. In other words, the share of other APEC members in zinc production tended to decline.

It should be noted that APEC includes most of the economies with significant share of refined zinc production, with the exception of India, and European economies. Even a slight zinc production decline in an individual APEC economy in recent years has been more than offset by the expansion of zinc output in China.

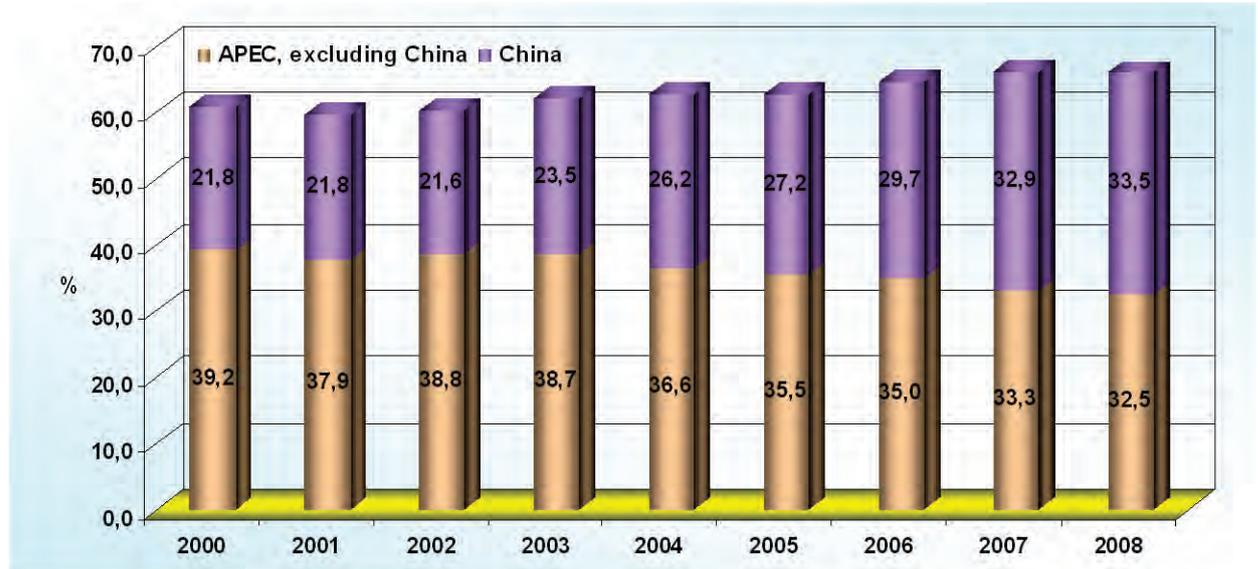
Accordingly, the role of APEC in the global zinc consumption increased as well. Moreover, during 2000-2008 the role of China in the global zincs consumption increased dramatically. If in 2002, the share of China in the global zinc consumption was only about 19%, by the year of 2005 it reached - 29%, and in 2008 it grew by almost 35%. Consequently, the share of APEC in the global zinc consumption grew from 57% in 2002 to almost 62% in 2005 and 75% in 2008. The growth of APEC share in zinc consumption has primarily been due to China, which over the years has become the largest global zinc consumer.

Global zinc production (thousand tons) and the share of APEC in the global production(%)



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY

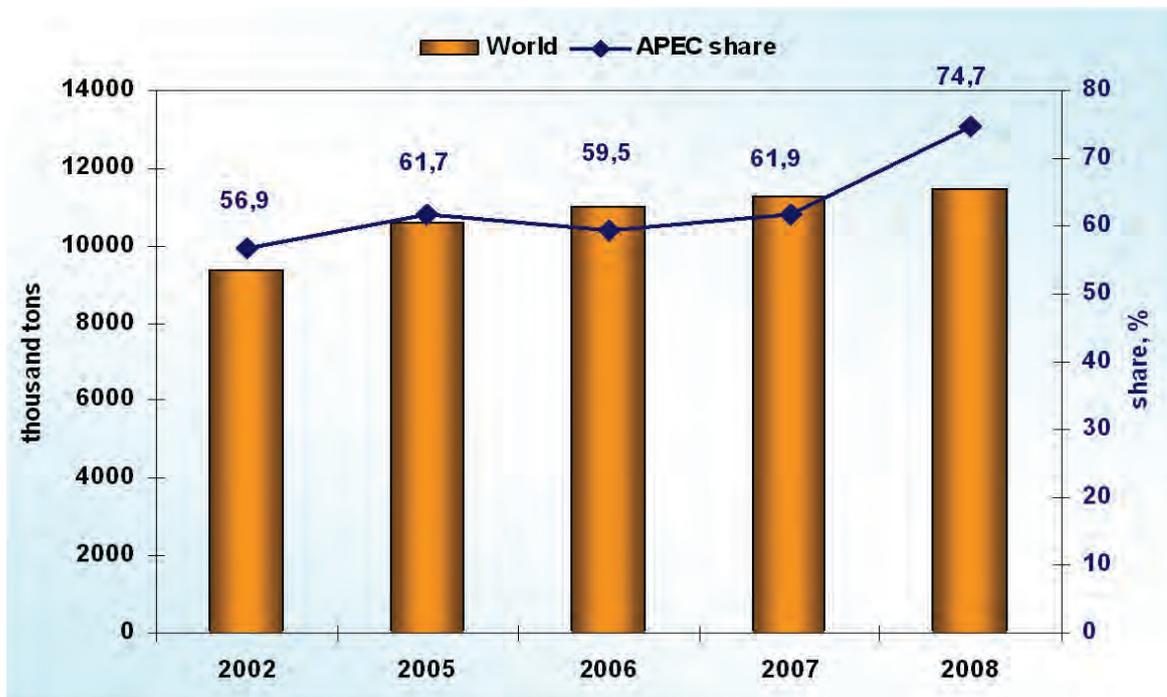
The share of APEC excluding China and the share of China in the global zinc production, %



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY, RUSMET

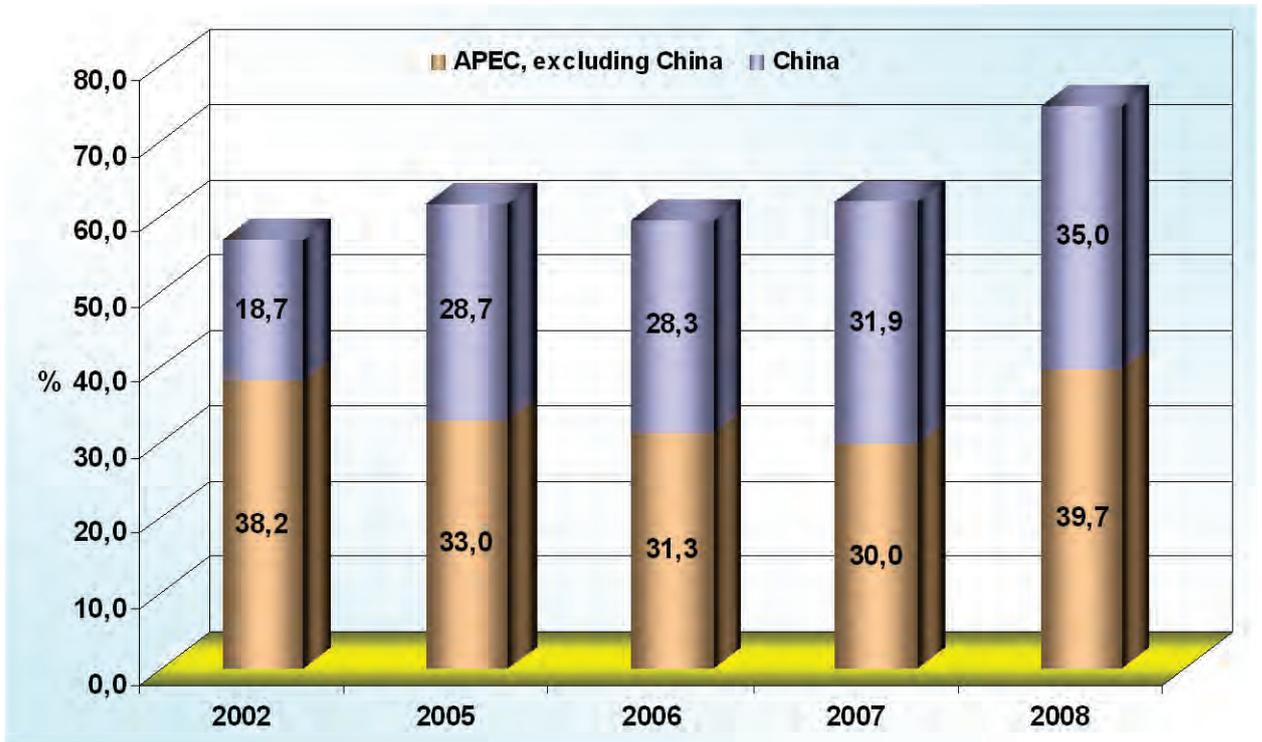
A number of APEC economies possess significant zinc reserves, as well as mining and processing production facilities. In 2008 the share of APEC in the global zinc production declined and amounted to approximately 77%. It should be noted that the share of APEC in the global zinc mining in 2000 equaled to almost 89%. During 2000-2008 there was a significant increase of zinc production in China - nearly 1.8 times to over than 3,1 mln .t (against 1,8 mln. tons in 2000). The share of China in the global zinc production grew from 22% in 2000 to almost 26% in 2008.

Global zinc consumption (thousand tons.) and the share of APEC in the global consumption (%)



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY

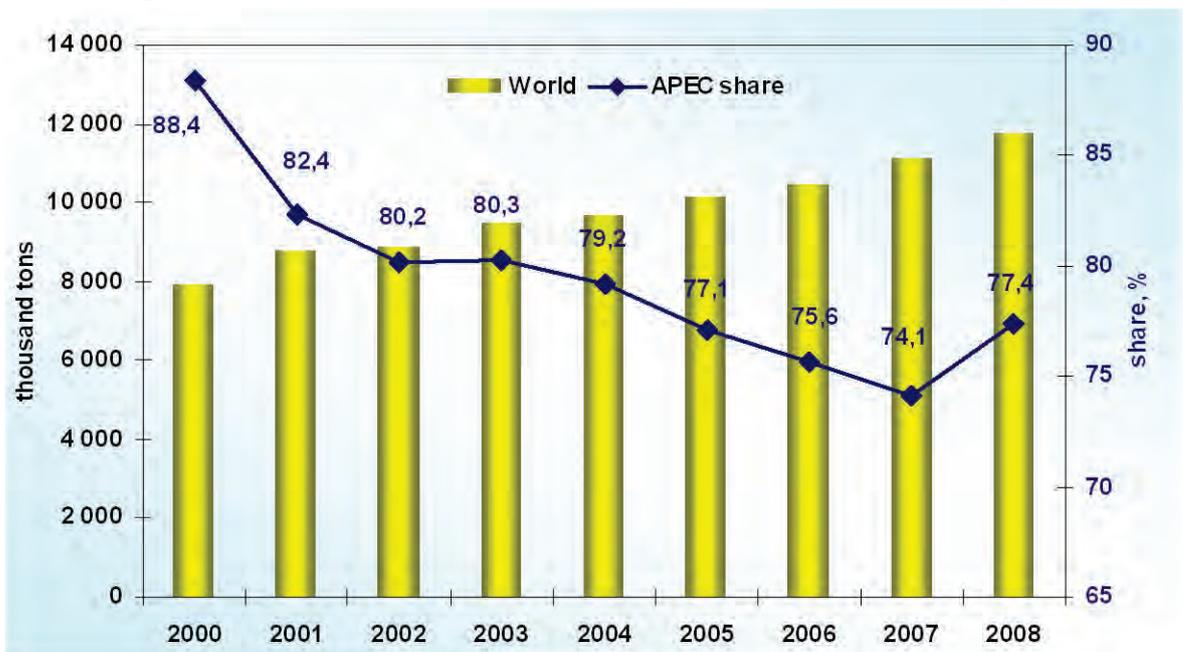
The share of APEC excluding China and the share of China in the global zinc consumption, %



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY, RUSMET

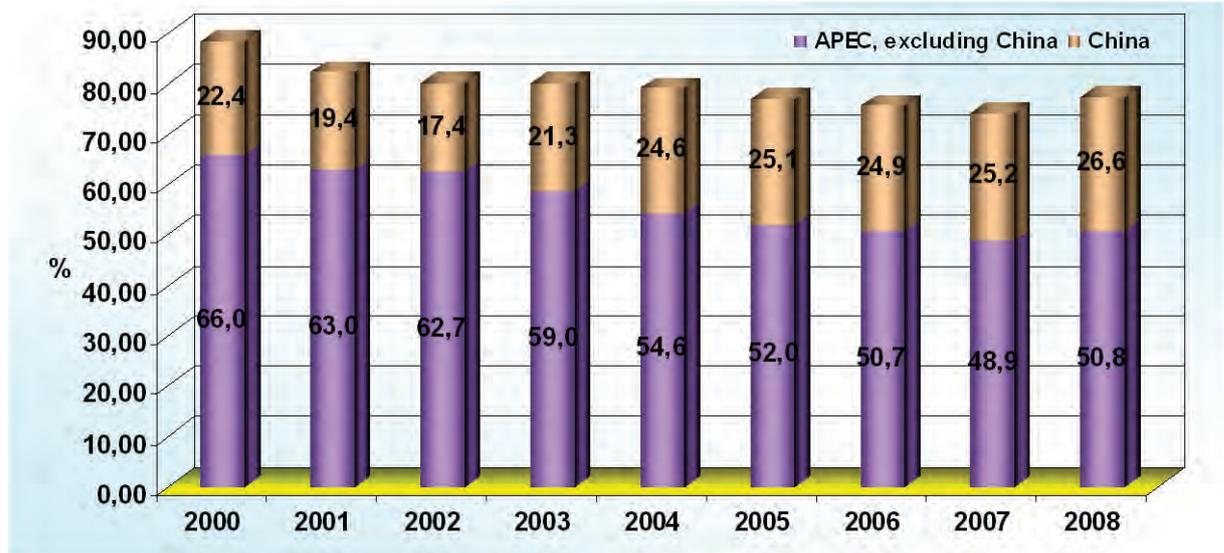
Significant zinc production increase was noted in Peru. Other economies, particularly Australia, Mexico and some others, increased their zinc production as well. At the same time, non-APEC economies expanded their zinc production as well.

Global zinc production (thousand tons) and the share of APEC in the global production (%)



According to ILZSG, Economist Intelligence Unit, U.S. GEOLOGICAL SURVEY

The share of APEC excluding China and the share of China in the global zinc production, %



13.5. Global Copper Market

According to the International Copper Study Group (ICSG), the oversupply of copper on the global market was about 360 thousand tons in 2008. The deficit of about 140 thousand tons which was observed during the first half of 2008, was well offset by 500 thousand tons oversupply in the second half of last year.

In 2007, refined copper oversupply amounted to approximately 290 thousand tons. In December 2008, a decrease in consumption due to the holiday season in the United States, Europe and Japan led to significant oversupply amounting to 170 thousand tons. amidst the deteriorating global financial crisis and the declining demand for copper.

According to ICSG, in February 2009 the balance in the global market of refined copper shifted toward a small deficit of 35 thousand tons, primarily due to the growth of Chinese import of refined copper and increased apparent consumption of the metal in China. Given the seasonality of refined copper production and consumption the market was balanced in February 2009. However, compared with the same period of 2008, production deficit was observed in the amount of 61 thousand tons (6 thousand tons, taking into account seasonality).

According to the ICSG, global consumption of refined copper in 2008 fell by 1% (to 164 thousand tons) compared to 2007. A slight decline in the global copper consumption in 2008 was primarily due to China, where copper demand increased by 14%.

Overall, apart from China, global refined copper consumption fell by 2%, primarily due to the reduction in the EU (15 economies), Japan and United States (by 6.5 and 9% respectively). Refined copper consumption in 2008 increased in Africa, Asia (including China) and Oceania by 7.7 and 3% respectively, and decreased in the U.S. (by 3.7%) and Europe (by 3.3%).

In February 2009, global refined copper consumption remained almost unchanged (0.2% increase) compared to February 2008, since 52% consumption increase during this period in China was offset by 18% decline in other economies. During January-February 2009, global copper consumption declined by 4.4% (130 thousand tons) compared to the same period of 2008. Although Chinese refined copper consumption rose by 33%, it declined in the other three major refined copper consuming regions (EU-15, Japan and the United States) by 25, 44 and 25% respectively. Thus, total global refined copper consumption, excluding China, decreased by 18%. It should be noted that apparent consumption of refined copper in China is calculated taking into account only production data, foreign trade and stock volume, given such data is provided. However, this calculation does not take into account the stock of the State Reserve Bureau (SRB), which may have a significant impact.

In 2008 global copper production remained virtually unchanged compared to 2007. Concentrate production declined by 108 thousand tons (by 0.9%), electrolytic copper extraction increased by 107 thousand tons (by 3.5%). Operational problems, personnel strikes and low-grade ore, - all contributed to the negative impact and the overall performance and production. Thus, production facilities load in 2008 amounted to 82.3%, which was the record lowest since 1989. Although, copper production rose in 2008 in China, Congo, Peru and the United States, the major producing economies such as Chile (4% decline), Indonesia (17% decline) and Mexico (27% decline) decreased their production. From the regional point of view copper mining in 2008 grew in Africa by 13%, but declined in the US by 1%, while in Asia, Europe and Oceania in remained unchanged.

In January-February 2009, global copper production increased by 2.6% (61 thousand tons.) as against January-February 2008, when industrial problems led to the decline in production. Production of concentrate during the same period grew by 1.1%, while electrolytic extraction of copper increased by 8.4%. However, due to the limited output volume and deliberate suspension of production, utilization of the production capacity still remains low at 78%, against the average load capacity of about 87% over the past five years. The increase was mainly due to Indonesia and Peru, while in China and Chile, copper production declined.

Global refined copper production in 2008 increased by 1.7% (by 301 thousand tons) as compared to 2007. Primary copper production increased by 2.3%, and secondary copper (from copper scrap) fell by 1.7 %. In 2008, China accounted for the largest share in the refined copper production increase (9.4%), which was associated with the expansion of domestic refined copper production capacity. In 2008, refined copper production declined in India, Japan, Korea and the United States. This decline was caused not only by the technical problems, adverse weather conditions and shutdown of production facilities, but with the extremely adverse impact of the global crisis, which deteriorated in the last quarter the past year.

However, production decline in these economies was offset by the growth in other economies such as Australia, Chile, China, Congo, Peru, and Scandinavian economies. From the regional point of view, refined copper production in 2008 declined by 3.5% in Africa and 1.1% in the North America. At the same time it demonstrated 4.7% increase in Latin America, 2.2% in Asia, 3% in Europe and 14% in Oceania. In connection with that, the average capacity utilization amounted to 81%, which was slightly lower than during the previous years.

In January-February 2009, global refined copper production remained largely unchanged as compared to the same period last year (0.6% increase). Primary copper production grew by 2% and secondary copper production (from copper scrap) fell by 8 %, which was influenced by the deficit in the global copper scrap market. It should be noted that 10% growth of copper production in China and 10% copper output increase in Chile was offset by the decline in other regions, such as the EU and Japan, which planned deliberate production downsizing. Utilization of refined copper production facilities fell to 78% against the average production capacity load of 83% in the last 5 years.

Global copper production and consumption, mln. tons

Indicator	2000	2005	2006	2007	2008	2008	2009	Differ., %
						Jan -Feb		
Copper mining (ore content)	13,213	14,924	14,990	15,464	15,449	2,384	2,445	2,6
Production capacity volume	14,213	16,814	17,164	18,168	18,780	2,998	3,141	4,8
Production capacity load (%)	93.0	88.8	87.3	85.1	82.3	79.5	77.8	-2.1
Production of primary refined copper	12,635	14,432	14,700	15,221	15,567	2,483	2,534	2,1
Production of refined copper and secondary raw materials	2,125	2,141	2,595	2,724	2,678	0,428	0,393	-8,2
Total refined copper	14,76	16,57	17,29	17,94	18,24	2,910	2,927	0,6

production	0	3	5	4	5			
Refined copper production capacity volume	17,05 1	20,25 0	20,62 9	21,58 0	22,52 2	3,583	3,753	4,7
Refined copper production capacity load (%)	86.6	81.8	83.8	83.2	81.0	81.2	78.0	-3.9
Refined copper consumption	15,13 3	16,67 3	17,04 2	18,17 5	18,01 1	2,971	2,841	-4,3
Stock at the end of the period	1,3	0,9	1,1	1,0	1,2	0,9	1,3	44,4

Source: ICSG

Copper demand is presently observed exclusively in China. As a result of the global financial and economic crisis, analysts of Economist Intelligence Unit (EIU) had to revise their earlier forecasts and estimates of copper production and consumption.

In the IV-th quarter of 2008, insufficient copper scrap supply to the global market had a major impact on the copper market, which also affected primary copper consumption. The suitability of new copper scrap declines during the decline in activity of the manufacturing industries. In addition, the incentive to gather old scrap copper disappeared as copper prices declined by 63% in the second half of 2008. All of these factors contributed to the insufficient copper scrap supply in the global market.

Copper products manufacturers often use scrap copper and copper cathodes as raw material. The share of copper scrap in the production of copper products is estimate at about 25%. In response to copper scrap shortage and the escalation of its price, semi-products producers were force to increase the primary copper use in order to compensate their operating costs.

Copper scrap market situation is quite ambiguous. According to the estimate, in 2009 the shortage of scrap supply for secondary copper production may grow from 500 thousand tons to 1 mln.t. Full restoration of the activity in manufacturing industries can hardly be expected before 2010-2011. Therefore, copper market will continue to experience scrap shortage, thus escalating the demand for primary copper.

Even taking into account the world economic crisis, copper demand in China will remain quite high in view of the investment of significant funds in the execution of major infrastructure projects. Electric cables manufacturers have already started to replenish their reserves and increase their production. Most companies have already been working at 80-90% of their total capacity load as compared to 50% load the end of 2008. Copper consumption in China has been growing, boosted by the increased number of copper product orders, in connection with the priming of economy and execution of infrastructure projects. Although EIU experts revised their earlier forecast of copper consumption in China downward, copper consumption is expected to increase in 2009 by 3%, with further increase to 4% in 2010.

With regard to other regions, it is expected that global copper consumption will decline in 2009, although EIU analysts had predicted the decline earlier, and their predictions happened to be overly optimistic. In particular, in Japan, all economic indicators point to the decline in the industrial activity, which suggests a significant reduction of copper consumption. In the preliminary data for January 2009, World Bureau of Metal Statistics (WBMS) estimated that Japanese copper consumption in January dropped by 20%, as compared to January of 2008. However, according to the Association of Japanese wire and cable manufacturers, their shipments volume in January 2009 fell by 21.2% compared to the same period of 2008. Shipment volume for automobile and electrical industries fell during the same period by 40%, which was the most significant decline over the past 30 years. EIU specialists believe that this trend has evolved in most regions in the I quarter of 2009, with the exception of China.

Thus, it became necessary to revise earlier forecasts. For example, Japanese consumption in 2009 may decline by 12% (previously forecasted decline was estimated at 3%). Forecasts of copper consumptions in the EU and some Asian economies were also revised downward. Global copper consumption in 2009 declined by 2.7%. However, a 1% increase in consumption is

anticipated in 2010 since the government measures for stimulating the economy are expected to produce results, as well as the shortage of scrap copper should boost the use of primary copper.

In 2009, a significantly reduction of copper production is expected worldwide. This has also been supported by numerous manufacturers who have already announced the decline of their production. In Japan and Korea, copper producers significantly lowered their copper production targets for 2009. Production cutback was also announced in America and Africa. The reasons for copper production cutback is low demand and relatively low copper prices, which often do not justify the production cost. Besides, the demand for sulfuric acid, which is a by-product of copper production and source of additional income, is extremely low.

Forecast of the global refined copper production, thousand tons

Economies	2005	2006	2007	2008	2009	2010
Total, global	16,787	17,210	18,019	18,161	17,664	17,835
China	3,665	3,870	4,861	5,210	5,366	5,581
EU -27	3,820	4,205	3,981	3,860	3,590	3,482
USA	2,270	2,130	2,160	1,945	1,905	1,924
Japan	1,229	1,282	1,252	1,240	1,091	1,080
Korea	869	828	857	850	800	810
Chinese Taipei	638	643	603	618	556	573
Latin America	555	560	575	598	580	585
Other	3,741	3,692	3,730	3,840	3,775	3,800

According to Economist Intelligence Unit.

A negative impact on copper production has also been aggravated by the deteriorating quality of ore extracted from the old mines in Latin America, technical challenges with equipment, personnel strikes, as well as shortage of copper scrap for secondary copper production. According to the estimates, a radical improvement in the copper scrap market should not be expected before 2011. Therefore, previous forecasts have been adjusted downward, thus, copper production in 2009 will decline by 1%, with a slight increase in 2010 to 1.8%.

Global refined copper forecast, thousand tons

Economies	2005	2006	2007	2008	2009	2010
Total, global	16,601	17,430	18,053	18,474	18,298	18,623

According to Economist Intelligence Unit, published on April 20, 2009

It should be noted that ABARE analysts forecast a much lower refined copper production target than Economist Intelligence Unit specialists. The consumption forecast is the opposite 0 ABARE forecast is higher than Economist Intelligence Unit.

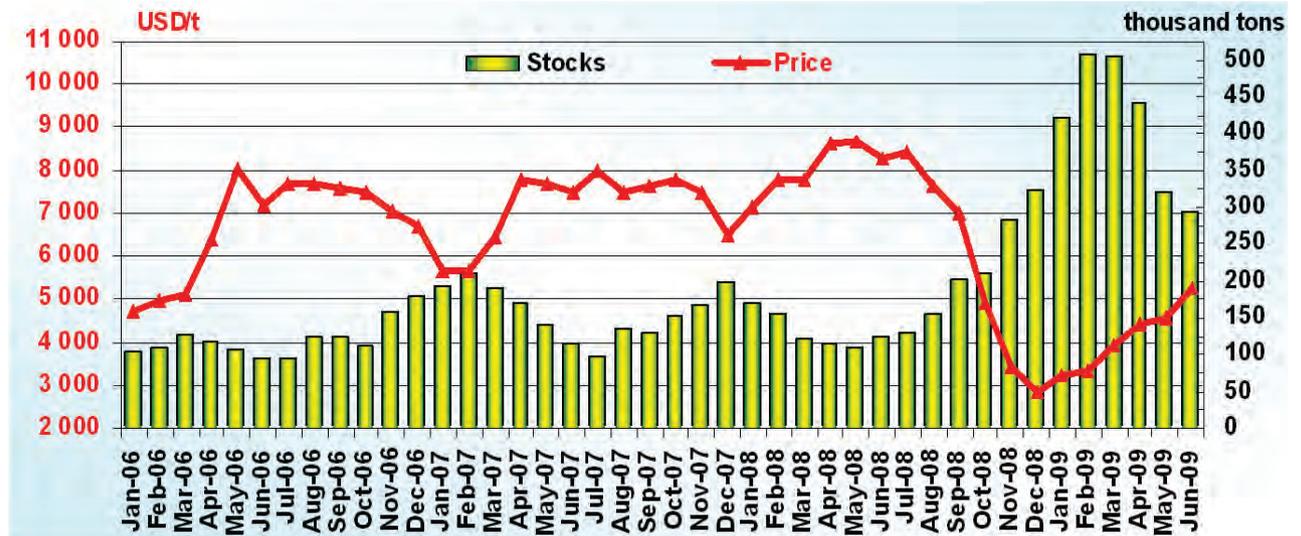
ABARE copper mining, production and consumption forecast before 2014, thousand tons

Indicator	2007	2008	2009	2010	2011	2012	2013	2014
Copper mining	15,561	15,614	16,024	16,455	17,105	17,705	18,512	19,337
Refined copper production	17,972	18,178	18,235	18,610	19,180	19,991	20,904	21,733
Copper consumption	18,026	18,124	17,850	18,374	19,157	19,941	20,754	21,615

With regard to the price trends forecast of the copper market, in 2009 the average annual price will be much lower than in 2008, due to the reduction of the global copper consumption for the first time in three years. By 2010, copper price will rise since copper consumption is

expected to increase in relation to the investment projects, implemented to stimulate the economy. Copper price uptrend should continue until 2012. The economic growth of primary copper consumer such as China, the United States, Japan and Germany, will have a significant impact on copper price in the med-term prospective.

LME copper price, USD/t



In May 2009, copper price rose slightly as compared to April (from \$ 4,405 to \$ 4,567 /t), as stocks fell from 440 to 319 thousand tons in June. In June, copper price grew by 15 % as compared to May and amounted to \$ 5,265 / t. Stocks fell by 8% and equaled 293 thousand tons.

Despite the negative trends in the global copper market, many companies not only reduced their production, but continued to expand their production capacity.

In the I quarter of 2009, Chilean **Codelco** produced 371 thousand tons of copper, which is 6.9% higher as compared to the I quarter of 2008. Production expansion was due to Gaby mine, as well as El Abra (Codelco owns part of the shares). In the I quarter of 2009 copper production was estimated at 390 thousand tons, which exceeded production volume of the same period last year.

Antofagasta Plc (Chile) produced 111,9 thousand tons. of copper in the I quarter of 2009, which is 2.4% lower than last year. Quarterly production was slightly higher than planned. During 2009, the company plans to produce 433 thousand tons of copper.

Lumina Copper Chile plans to begin construction of Caserones mine in Chile in the second quarter of 2010. After the mine achieves its full operating capacity, copper production will amount to 150 thousand tons per year. The project should be approved by the end of this year. Cathodes production is scheduled to being in 2012 and copper concentrates - in 2013

Canadian **Inmet Mining Corp.** announced the beginning of production at its new Las Cruces project after receiving the final approval from the Andalusian Regional Ministry of Innovation Science and Business (CICE). Based in Spain, the new project has been postponed due to the delays with obtaining permits for water use.

Zambian **Mopani Copper Mines**, which is owned by Glencore International, revoked its decision to suspend operations in view of the company's plan to reduce operational costs and expectations of higher copper prices. The Zambian Government has asked Glencore to turn over Nkana and Mufulira mines after the announcement of the closure plan and copper price drop

Freeport-McMoRan Copper & Gold Inc. has announced the beginning of the shipment of the first batch of cathode copper produced at Tenke Fungurume min of in the Republic of the Congo.

The plant **Nchanga** resumed copper production at the beginning of May 2009, which was suspended after the fire. The plant belongs to the Zambian group of Konkola Copper Mines (KCM).

Production in the world's largest copper mine **Escondida** during 2008-2009 was reduced by 30%. The mine is owned by BHP Billiton. In the past fiscal year, production of the mine amounted to 1,2 mln. tons

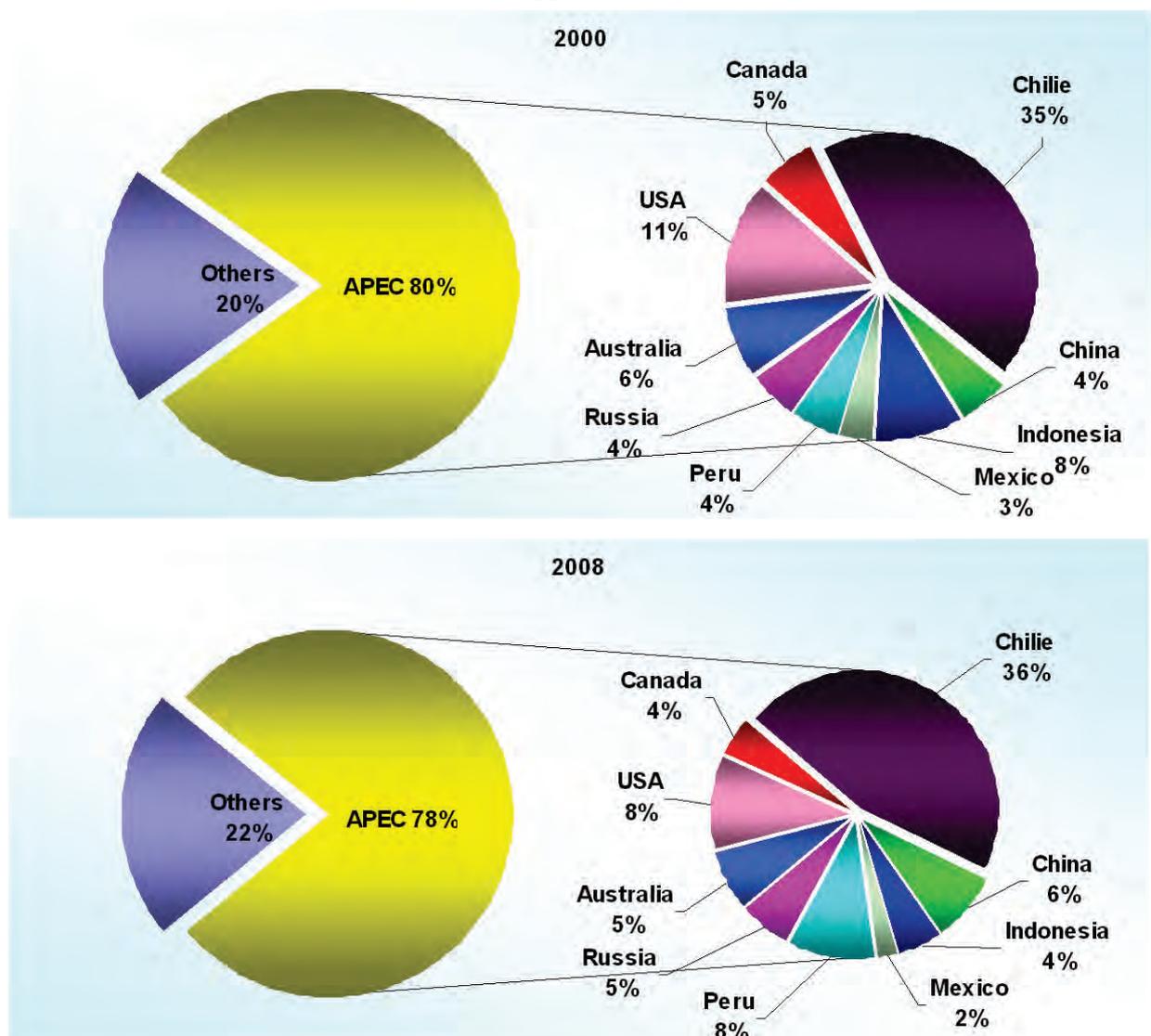
Production of Chinese **Yunnan Copper Co Ltd.** in the I quarter of 2009 declined by 34% as compared to the I quarter of 2008.

Xstrata will close its Kidd Creek copper-smelting plant in north of Ontario for a period of 9 weeks due to the dramatic decline in the demand for sulfuric acid, which the plant produces as a by-product during copper extraction.

APEC Role in the Global Copper Market

In the year 2000 the share of APEC economies in the global copper market totaled 80%, but in 2008 their share decreased slightly and amounted to 78%. Chile occupies the dominant position in the global copper mining and in APEC accordingly.

APEC share in the World Copper Mining, (Rusmet evaluation) %



The role of APEC in the global copper consumption is quite significant, as well. The lead consumers among APEC economies are China, USA, Japan, Korea and Chinese Taipei. The share of these economies in the global copper consumption increased from 51.7% in 2005 to 54.3% in 2008. The increase of APEC share in the global consumption mainly occurred due to growth of copper consumption in China.

China

China is the global leader of copper consumption; therefore the situation in its domestic market exerts significant influence on the general condition of the global market and price trend.

Despite the economic crisis, copper mining in China has been steadily increasing. In January – April, 2009 refined copper production showed a 6.7% year-on-year increase. Refined copper import to China is also increasing due to the execution of infrastructure projects. In January – April, 2009 refined copper import to China grew by 106.3%, and import of copper alloys decreased by 40.3%.

Copper mining in China, thousand tons.

Product type	April 2009	Change by March 2009, %	Change by April 2008, %	January - April 2009	Change by January-April 2008, %
Refined copper	338,3	5.92	2.9	1,256	6.7
Copper concentrate (as for copper content)	83,2	4.13	9.8	285,7	9.5

Import of refined copper and alloys to China, thousand tons.

Economy	2008	% change against 2007	April 2009	Change by March 2009	January - April 2009	Change by January - April 2008
Refined copper, total	1,456,375	-2.44	317,947	7,11	1,066,227	106,3
Which includes:						
Chilie	744,403	0.91	139,568	4,9	429,692	50,6
Japan	213,344	7.5	42,617	-9,5	179,051	154,7
Kazakhstan	130,269	-13.48	14,016	-16,8	52,157	26,24
Korea	70,411	-18.81	4,439	-74,4	36,800	60,0
Australia	60,922	No data	5,994	-60,13	61,378	667,9
Copper alloys, total	47,712	-19.21	3,144	15,6	11,249	-40,3
Including:						
Korea	13,768	-1.59	0.648	-9,9	2,968	-47,1-
Kazakhstan	3,136	-18.6	0.158	33,9	0,396	-68,3
Japan	5,211	-38.14	0.303	-42,9	1,538	-18,6
Russia	4,393	51.89	0.432	121,5	1,215	-19,6
USA	3,863	-5.31	0.301	-8,0	1,056	-42,6

Customs statistics

13.6. Outlook for Global Nickel Market

According to the U.S.Geological Survey during 2000 – 2007 global nickel mining grew by 32.8%. However, in 2008 nickel mining decreased from 1,660 to 1,610 thousand tons. or by 3% due to the global crisis and the reduction of stainless steel smelt.

The reduction of metal prices, increased risks amidst the global crisis and decreased credit-granting forced nickel producers to shutdown least profitable enterprises and postpone the execution of some nickel mining projects (the ones that are early in the project).

It should be noted that nickel mining, production and consumption data differs depending on the statistical source due to the various methods of calculation of nickel content.

*Global nickel mining, thousand tons.**

Economies	2000	2005	2006	2007	2008	Change, %
Total in the world	1250,0	1490,0	1580,0	1660,0	1610,0	-3.0
Australia	168,3	189,0	185,0	161,0	180,0	11.8
Botswana	34,5	28,0	38,0	38,0	36,0	-5.3
Brazil	45,3	52,0	82,5	75,3	75,6	0.4
Canada	190,7	198,0	233,0	255,0	250,0	-2.0
China	51,1	77,0	82,1	85,0	85,0	0.0
Columbia	58,9	89,0	94,1	101,0	74,9	-25.8
Cuba	68,3	72,0	75,0	75,0	77,0	2.7
Dominican Republic	39,9	46,0	46,5	47,1	47,0	-0.2
Greece	19,5	23,2	21,7	21,2	20,1	-5.2
Indonesia	98,2	160,0	140,0	229,0	211,0	-7.9
New Caledonia	127,5	112,0	103,0	125,0	92,6	-25.9
Philippines	23,5	26,6	58,9	79,5	88,4	11.2
Russia	270,0	315,0	320,0	280,0	276,0	-1.4
Republic of South Africa	36,6	42,5	41,6	37,9	38,0	0.3
Venezuela	2,5	20,0	20,0	20,0	20,0	0.0
Zimbabwe	8,2	9,5	8,8	7,1	6,5	-8.3
Other economies	6,9	30,2	29,8	22,9	31,9	39.3

According to the U.S. Geological Survey, Mineral Commodity Summaries, January 2009

The situation in the global economy remains difficult, production of ferrous metals, including stainless steel, is at the lowest level and the prospects of positive changes may be expected only at the end of the second – beginning of the third quarter of 2009. All of this makes an unfavorable forecast of nickel production and consumption in 2009 possible.

Nickel output will decrease especially in companies with low profitability. On the other hand, the beginning of nickel mining within new projects offsets the reduction of nickel mining of low profitable plants, which is not going to exert any positive influence on nickel demand and consumption volume.

Downward nickel production trend was registered as early as in 2008. Nickel output in Western economies totaled 877 thousand tons., and in other regions – 530 thousand tons. amounting to 1,407 mln.t. In 2008, nickel output decreased by 2-3% as compared to 2007, when production reached 1,445 mln.t. Considering the fact that in the first half of 2008, nickel prices were still high enough for companies to cover their production cost and make profit, almost all major metal producing companies increased their annual financial indicators for the last year.

The first company to announce nickel production cutback in 2008 was Xstrata.

Swiss Xstrata had to expedite the shutdown of two expensive plants in Canada. However, a new plant Nickel Rim South which is also located in Canada but has lower product costs will replace the closed facilities. Nevertheless, Xstrata shutdown its Falcondo plant in the Dominican Republic in order to switch to coal, hoping to reduce its production costs. However, since the price continued to decline, the company decided to close the plant indefinitely. Rumors of company's intention the shutdown the plant began back in mid-August 2008

Other companies such as BHP Billiton, Eramet, also began to announce the reduction of production at their plants.

BHP Billiton had to put on hold a joined project with the Indonesian state group Antam. The project envisaged development of a mine in one of the eastern islands of the archipelago. BHP Billiton had to suspended production of Ravensthorpe nickel plant in Western Australia with production capacity of 50 thousand tons. per year.

French Eramet, reduced its production in New Caledonia and France in two stages, due to the low nickel price. Eramet has plans to produce 50 thousand tons. of nickel in 2009 at its factory SLN in New Caledonia.

Brazilian Vale Inco has reduced its nickel production in China and Indonesia. Company management decided to shutdown Copper Cliff South mine in Canada for an indefinite period of time. The mine produced 8 thousand tons. of nickel per year. In July 2009, the company also plans to shutdown for one month its nickel-copper mine Voisey Bay in Newfoundland. Copper

Cliff Deep project in Canada with estimated project value of \$814 million has been put on hold as well. In 2009, Vale-Inco will reduce nickel production in nickel material by 20% in , as compared to 2008 (70-75 thousand tons.).

In 2008 Indonesian PT Inco produced 72,4 thousand tons. of nickel in nickel material, which was 5.6 % lower as compared to 2007.

Oz Minerals Ltd will stop production at its small, but rich Avebury nickel ore mine in Tasmania. Design production volume of the mine is 8,5 thousand tons. of nickel concentrate per year.

FNX Mining has announced suspending of nickel ore production and dismissal of 307 workers. Nickel and copper mines of the company are located primarily in Sudbury basin of Canada.

Small-scale producers like Belvedere Resources (Canada) with mines in Finland and South Africa also had to stop their production until the turnaround of nickel price. Belvedere Resources Company has suspended production at Hitura plant, Finland. The company will also indefinitely stop production at its nickel mine Sarkiniemi.

Nickel output of the leading producers in 2006-2008, thousand tons in nickel equivalent

Company	Refining and smelting companies	2006	2007	2008	Difference 2008 /2007 %
In Western Economies		897,1	891,4	877,0	-1.6
BHP Billiton, total		137,3	176,7	162,6	-8.0
ONI	Greenvale	26,1	28,8	35,1	21.9
Cerro Matoso	Montelibano	51,2	49,4	41,7	-15.6
Nickel West	Kwinana	60,0	98,5	85,8	-12.9
Xtrata Nickel, total		111,7	116,7	107,5	-7.9
Sudbury	Sudbury	82,0	87,6	88,7	1.3
Dominicana	Dominicana	29,7	29,1	18,8	-35.4
Eramet, total		62,4	59,8	51,1	-14.5
S.L.N.	Doniambo	49,0	46,8	-	-
	Sanduvilla	13,4	13,0	-	-
Vale-Inco, total		251,3	248,3	275,4	10.9
Ontario	Copper Cliff	93,0	82,7	85,3	3.1
Manitoba	Thompson	35,3	30,3	28,9	-4.6
PT Inco	Soroako	70,0	75,8	68,3	-9.9
Voisey' Bay	Voisey' Bay	36,5	58,9	77,5	31.6
External assets		16,5	0,6	15,4	-
Sherrit (Fort Saskatchewan)	Canada, Cuba	30,0	31,4	32,4	3.2
Norilsk (Harjavalta)	Harjavalta	47,0	-	-	-
SAR, total		36,5	35,9	29,3	-18.4
Impala	Springs	14,8	16,4	13,8	-15.9
Amplats	Marikana	21,7	19,5	15,5	-20.5
PT Antam	Pomala	14,5	18,5	17,5	-5.4
Larco	Larymna	18,0	19,0	20,0	5.3
Zimbabwe		16,0	16,0	10,2	-36.3
Bindura	BSR	9,0	9,0	4,0	-55.6
Empress	Eiffel Flats	7,0	7,0	6,2	-11.4
Murrin Mirrin (Mineral Resources)		31,5	28,0	30,5	8.9
Brazil, Venezuela, total		48,4	46,6	42,0	-9.9
Codemin	Barro Alto	9,8	9,9	9,1	-8.1
Tocantins	Sao Ni. Paulista	22,0	21,0	22,0	4.8
AAC Berro Alte	Barro Alte	0,0	0,0	0,0	-
Loma de Niquel	Minera Loma	16,6	15,7	10,9	-30.6
Japan, total		151,5	155,7	149,8	-3.8
Pamco	Hachinoe	36,1	33,2	28,9	-13.0
Sumitomo (FeNi)	Hyuga	18,8	23,6	20,0	-15.3
Nippon Yakin	Miyazima	11,8	11,5	11,0	-4.3
Inco Tokio Ni.	Matuszaka	55,5	57,0	55,0	-3.5
Sumitomo (Met. Ni)	Ni ihama	29,3	30,4	34,9	14.8

Macadonia	Kvadarci	5,0	7,0	7,0	0.0
Kosovo	Glogovac	6,0	8,0	8,0	0.0
Posco Nickel	Kwangyang	-	-	2,0	-
Eastern Economies		480,0	553,3	530,8	-4.1
CIS		284,0	303,3	309,7	2.1
	Total	274,0	293,3	299,7	2.2
Russia	Norilsk Nickel	244,0	234,4	232,3	-0.9
	Harjavalta	0,0	34,6	29,3	-15.3
	Tati, Nkomati	0,0	15,1	23,4	55.0
	Other	30,0	9,2	14,7	59.8
Ukraine	Pobuzhsk	10,0	10,0	10,0	0.0
	Total	151,0	205,0	178,6	-12.9
China	Jinchuan Nickel	101,0	110,0	104,6	-4.9
	Ni Pigiron	40,0	85,0	60,0	-29.4
	Other	10,0	10,0	10,0	0.0
	Vale (Dalian)	-	-	4,0	-
Cuba		45,0	45,0	42,5	-5.6
		1	1	1	-2.6
Global total		334,1	444,7	407,8	

Source Tex Report

On January 20, 2009 Anglo-American AAC announced shutdown of nickel production at Venezuela plant with annual capacity of 20 thousand tons per year. Nickel output by Loma de Niquel in Venezuela declined by 31% in 2008, as compared to 2007 and amounted to 10,9 thousand tons.

Nickel output by Anglo-American AAC in Brazil at Codemin plant fell by 8% in 2008, as compared to 2007. Production decline at Codemin was due to the shutdown of one the furnaces for maintenance. In 2008, the Codemin produced 9,1 thousand tons of nickel. Nickel content in crude ore in 2008 equaled 2.1%, as in the previous year.

Plans to reduce nickel production were triggered by the global economic crisis. Global crunch has caused a reduction of stainless steel production, which lead to the decline of the demand and nickel price drop. Such downward trend is expected to continue during 2009.

At the same time, Australian Fox Resources Ltd plans to restore nickel production and shipment to China by the end of 2009, anticipating nickel price turnaround.

As far as nickel production in the economies of the Eastern block, China, having expanded its nickeliferous cast iron production ear, is presently trying to significantly reduce its output. In view of the current nickel market situation, analytical companies have to revise their earlier forecasts.

A serious downturn in the global economy of emerging markets had a particularly negative impact on nickel production and consumption related industries. Thus, low activity in the construction sector and manufacturing engineering caused a decline in stainless steel sales, including electrical appliances and equipment. This resulted in a decline of stainless steel and alloy steel production in the IV-th quarter of 2008.

Low demand in the market of stainless steel products does not allow manufacturers to replenish nickel stock. In the I quarter of 2009, nickel consumption was estimated at 85% against the IV-th quarter of last year. Significant reduction of stainless steel production in Belgium, Italy and Spain has caused a considerable reduction of nickel consumption in EU. A significant reduction of nickel consumption was also observed in the United States. In Japan and China the reduction of nickel consumption was less obvious than in other economies.

Economist Intelligence Unit experts note that markets are in a much worse shape than it was forecasted at the end of 2008. Even with priming of the global economy, the results should be expected only at the end of the year. Analysts of Economist Intelligence Unit revised their 2009 forecast downward. In the best case scenario nickel consumption will reach 2008 level.

There is reason to believe that even if programs of economic stimulation are not executed in full, nickel consumption in 2010 may still begin to recover. Increased nickel consumption will be observed in China and other emerging economies, while in the United States and the EU it will remain substantially lower against previous years.

According to Economist Intelligence Unit, global nickel production will decline in 2009 to 1,312 thousand tons compared to 1,369 thousand tons. in 2008. Restoration of nickel production is anticipated in 2010 to 1,380 thousand tons

Global nickel consumption forecast, thousand tons

Economy	2005	2006	2007	2008	2009	2010
Global total	1,317	1,390	1,353	1,299	1,300	1,385
EU 27	436	453	422	390	380	395
China	197	234	328	305	320	340
Japan	180	181	196	185	175	187
USA	128	144	118	121	125	133
Korea	118	93	71	73	70	80
Chinese Taipei	84	107	76	70	72	81
Other	174	177	142	153	158	169

According to the International Nickel Study Group, Economist Intelligence Unit, published on April 20, 2009

Global nickel production forecast, thousand tons

Economy	2005	2006	2007	2008	2009	2010
Global total	1 298	1 356	1 456	1 369	1 312	1 380
Former USSR	281	290	288	289	260	275
Canada	140	154	163	176	168	175
Australia	122	116	114	108	98	105
EU-27	109	116	123	121	115	120
Japan	85	152	161	156	150	158
China	164	132	220	171	171	185
Norway	97	82	88	89	80	82
Other	300	315	300	260	270	280

Accoring to the International Nickel Study Group, Economist Intelligence Unit, published on April 20, 2009

There are significant risks associated with the medium-term prospective, especially related to nickel consumption. Currently, ABARE specialists anticipate restoration of the global economic growth by the end of 2009 - beginning in 2010. Total recovery to the pre-crisis level is expected in 2011. As a result, nickel consumption will have a similar uptrend, demonstrating 4% annual growth beginning with 2010. If economic recovery will take a slower rate than presently anticipated, it will lead to weaker consumption growth, which will exert downward pressure on prices. This, in turn, will cause a further delay in the beginning of new nickel production projects. However, the opposite is also possible: in case of quick restoration of the economy, nickel consumption will begin to rise and the stock will fall down which will result in a dramatic price surge. Nevertheless, in such case nickel producers will not be able to respond quickly to the rapid demand growth, as resumption of deferred projects or re-activation of shutdown facilities will take time, and the market may once again experience a sharp turnaround in prices. However, this scenario is unlikely, yet, should not be completely discarded.

Nevertheless, ABARE analysts expect a 2% nickel consumption increase in 2009, as against 2008. Nickel consumption in 2009 is anticipated at 1,25 mln. tons., which is the lowest registered level since 2005. Industrial construction and production of new vehicles which account for one third of the global nickel consumption, are expected to decline as a result of the economic recession. Besides, the demand for consumer durables which account for 20% of the global nickel consumption will decline as well, due to the decline of consumer spending resulted from the economic crisis. The demand for chemicals, paints, electronic equipment and other products which are produced with nickel, will decline as a result of economic slow down.

In 2010 a slight consumption increase should be expected around 3% amounting to 1,29 mln.t., as the economy growth rate gradually increases. Nickel demand in the steel industry (production of stainless steel and special alloys) will grow faster than in other industries.

Global nickel production and consumption, thousand tons

Indicator	2007	2008	2009	2010	2011	2012	2013	2014
Nickel mining	1,595	1,486	1,294	1,351	1,436	1,535	1,598	1,657
Refined nickel production	1,430	1,376	1,242	1,268	1,342	1,424	1,494	1,535
Consumption	1,323	1,277	1,251	1,290	1,367	1,420	1,469	1,527
Yearend stock	125	153	143	121	96	100	125	133

According to ABARE published in March 2009

Nickel consumption during 2011 -2014 is expected to grow by 4% a year and in 2014 it will reach 1,53 mln.t. Industrial production growth in many emerging economies will stimulate significant increase nickel consumption in 2014. More rapid economic growth in 2014 will lead to construction sector recovery. This will boost the demand for stainless steel, and, consequently, nickel. It should also be noted that production of new types of rechargeable batteries will help create a new niche in nickel market. The demand for nickel-metal hydride batteries will grow as hybrid drive cars become increasingly popular and offer a competitive price. In addition, such batteries are widely used in mobile phones since they have better recharging parameters against other battery types.

Refined nickel extraction and production in 2009 will decrease by 13%, since low nickel prices and high stock volume have caused many companies to shut down their mines and production facilities in Canada, Australia and South America. Thus, with nickel price at

\$ 11,000/ton, about 30% of the global nickel production capacity becomes economically disadvantageous. Besides, due to low nickel prices in 2008 commissioning of several mines that had been scheduled for 2009, has been postponed in order to minimize the cost. As a result, nickel production in 2009 is estimated at 1,29 mln.t., which is 1.49 times lower as compared to 2008. Therefore, refined nickel output in 2009 will decline. Many refining plants all over the world especially in China, Canada and the Dominican Republic have either shut down or significantly reduced their production

In 2010, growing nickel prices as expected to force some producers (particularly businesses with low production cost) to return to normal production levels. However, ABARE analysts believe that production can not grow faster than consumption.

Since nickel ore mining (in nickel equivalent) may rise in 2011 and 2012 by 6% and 7% respectively, reaching the design capacity will take time. Thus, nickel mining output in 2014 will amount to 1,7 mln.t, after new mines are commissioned and put into operation. It is also important that, apart from China, over 470 thousand tons. of nickel production capacity is scheduled to be commissioned during 2009 -2015. Out of this production volume, 23 thousand tons. will be produced from sulphide ores, while the rest – from lateritic ore. Significant challenges continue to impede nickel production from lateritic ore due to the high cost of these projects, as well as high cost of lateritic ore processing. Therefore, unless nickel prices grow to the level that is sufficient to absorb these costs many of such projects will be canceled or delayed.

From 2011 through 2014, refined nickel production is expected to grow by 4% annually to reach 1,54 mln.t. in 2014.

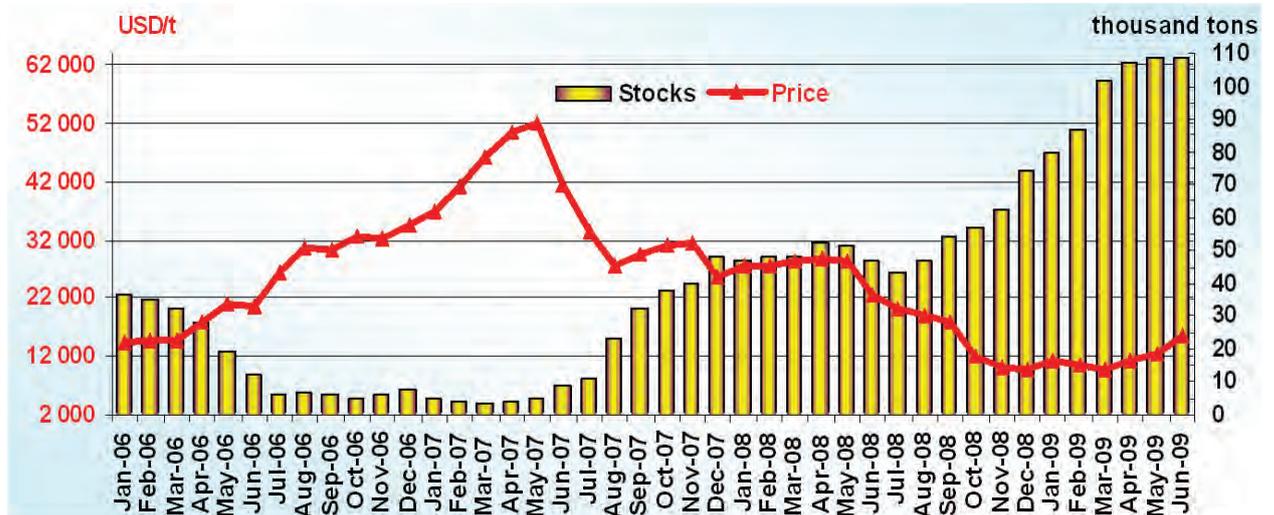
After a sharp nickel price drop from the high of March 2008 (\$ 33, 000/ t) to \$ 9, 000/t in December 2008, the average annual nickel price in 2008 was \$ 21,100/t. This was the lowest average annual price since 2005. In 2009, according to ABARE estimate, the average annual price will be lower than last year, as the current nickel price remains low and the trend is likely

to remain in the first half of 2009. However, a slight increase of nickel price is expected during the second half 2009.

In 2009, the average nickel price on the global market is anticipated at \$ 10,500 / t. According to ABARE estimate, the price will remain low in 2009, as demand for stainless steel remains low, while nickel stock amounts to the approximate volume of global nickel consumption in 6,6 weeks. Gradual recovery of the economy, according to ABARE, will begin only in 2010, as a result of which, nickel price will definitely begin to grow. However, this price growth will be moderate until 2011, as the demand for stainless steel will continue to remain low, and nickel stock and stainless steel products reserves remain high.

Despite nickel production decline in 2008, the stock reserve increased by the yearend. In 2009 the situation should change, as many nickel producers have shutdown their nickel ore mines and production facilities. As a result, according to ABARE estimate, nickel stock should decline in 2009, and will match nickel requirement for 6 weeks. In 2010, nickel stock should be reduced to match the consumption volume during 4.9 weeks, as nickel producers continue to reduce production and postpone new projects until nickel prices rise back up to the level of \$ 18,000 / t.

Price dynamics and LME nickel stock



At present, nickel prices are much lower, therefore, the majority of producers suffered some profit loss as compared to the same period last year, and some companies even completely lost all of their profit. Since many companies have shut down their nickel production facilities, restart of operations will require certain expenses. Most companies will wait for higher nickel price in order to do that since they want to compensate their production cost.

In early April 2009 LME nickel price increased slightly to \$ 11,150 / ton in comparison to the average price in March, \$ 9689 / t. The stock increased by 4.71 tonnes in May 2009, the price of nickel rose by 19% compared to April and amounted to \$ 13,305 / t.

Nickel consumption growth is expected to begin in 2010. As a result, nickel stock will decline and the price will resume its growth. According to ABARE estimate, nickel price will rapidly grow from the second half of 2010. This uptrend will continue in 2011 as consumers will be forced to increase nickel purchases in response to priming of the economy. Given the recent price volatility in the global nickel market, manufacturers will be very careful to commission new facilities or put back on production earlier shutdown plants. Therefore, full production capacity of nickel plants will not be completely restored until about the middle of 2011, when nickel price will grow to the level that offsets production costs and ensures profit.

According to ABARE forecast, nickel price in 2011 will reach \$25,000/t (based on 2009 exchange rate). When in response to the growing prices producers will resume their full capacity production, the price will once again decline to \$18,000/t in 2014. Growing nickel price will also

encourage companies to resume their suspended projects, which will once again upset the balance between production and consumption to the increase of the output.

According to International Nickel Study Group (INSG) and the estimate of Alloy Metals and Steel Market Research, global primary nickel consumption in 2008 declined by 2.7 % and amounted to 1,287 mln.t. Significant primary nickel consumption decline was observed in the IV-th quarter of 2008 up to 281.7 thousand tons., while during the previous three quarters it was around 303-350 thousand tons. In the IV-th quarter of 2008 global nickel market experienced maximum oversupply registered over the last few years.

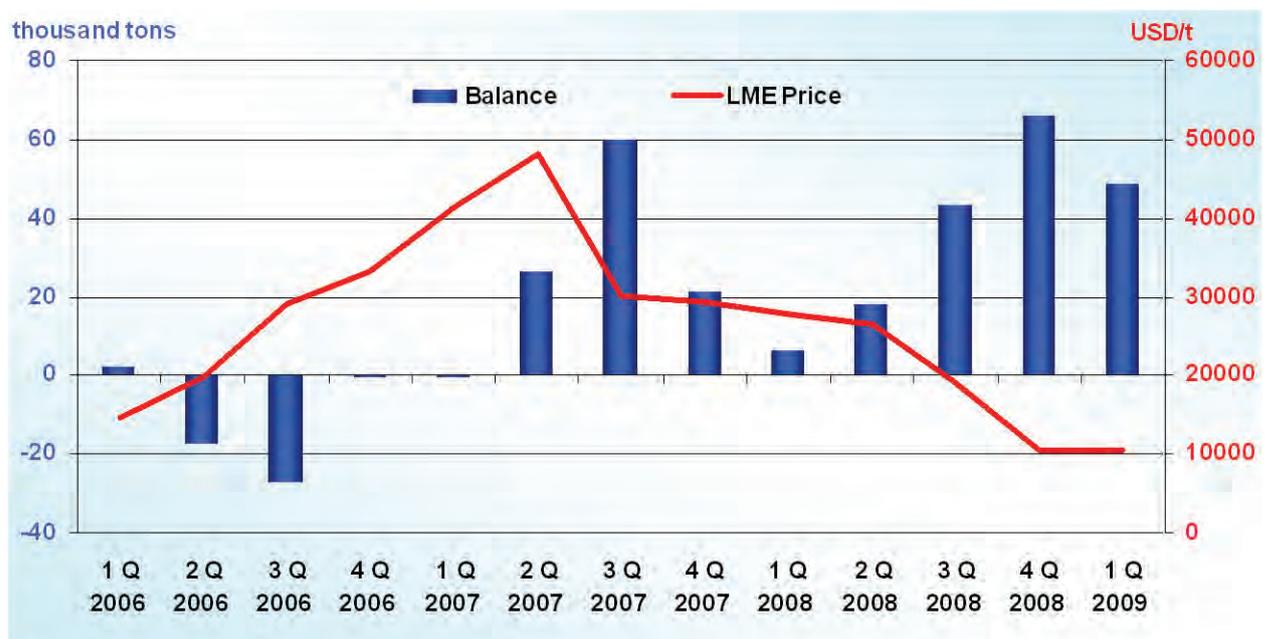
In the I quarter of 2009 nickel consumption declined in all global regions. Overall global consumption declined by 24.9 % as compared to the I quarter of 2008.

Global primary nickel consumption by regions, thousand tons

Regions	2007	2008	Difference, %	1 quarter 2008	1 quarter 2009	Difference, %
America	171,4	160,5	-6.4	42,8	29,1	-32.0
Japan	169,1	157,2	-7.0	39,7	21,2	-46.6
China	330,0	360,0	9.1	94,5	93,2	-1.4
Other Asian economies	191,9	180,0	-6.2	46,5	39,4	-15.3
Europe	423,9	399,7	-5.7	116,2	74,1	-36.2
Other regions	36,5	29,9	-18.1	10,0	5,5	-45.0
Global total:	1322,8	1287,3	-2.7	349,7	262,5	-24.9

Source: INSG

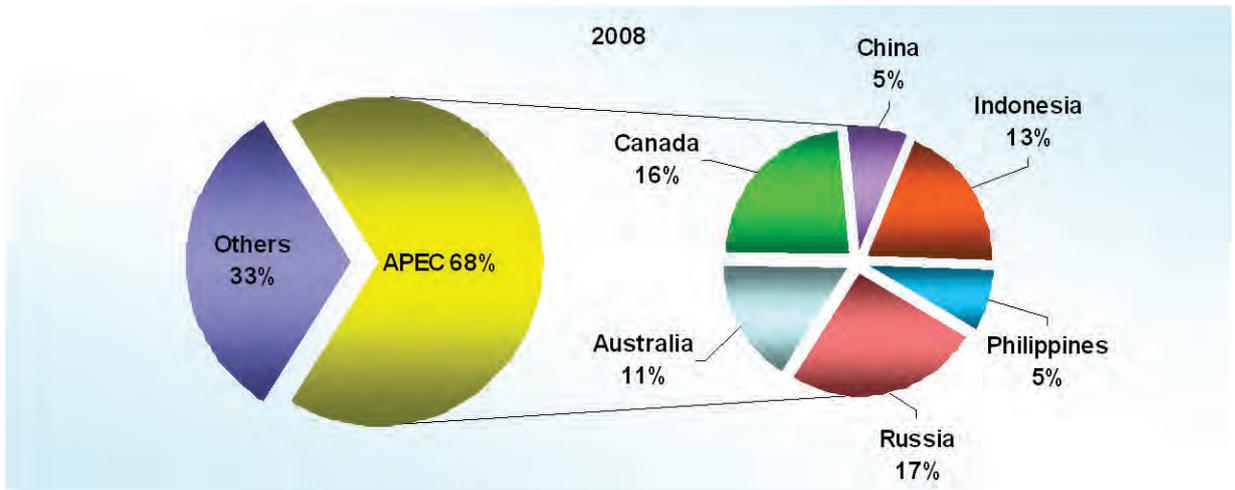
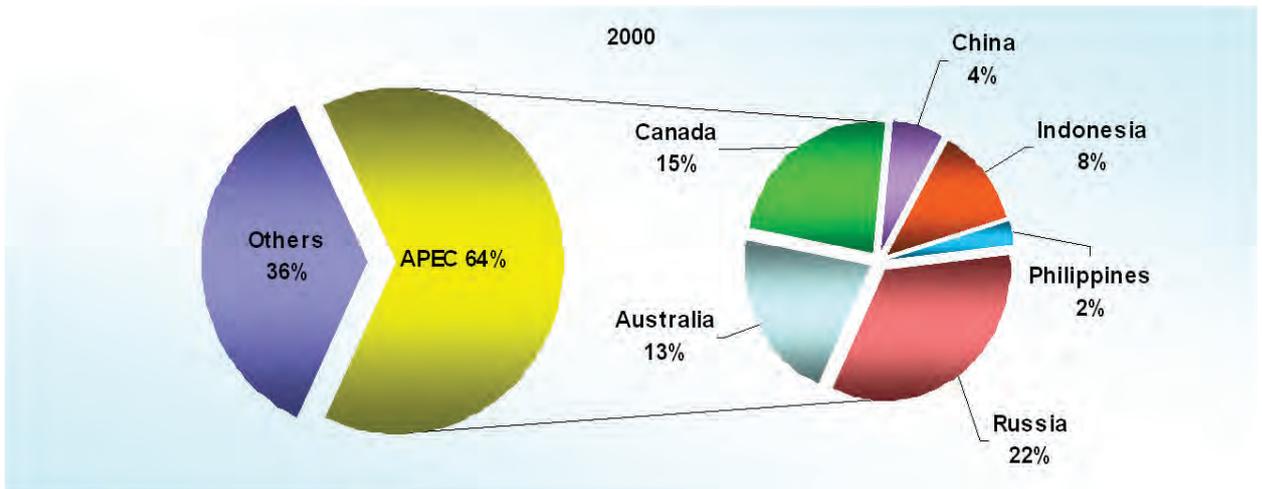
Global balance of nickel supply and demand in the global market, by quarters (INSG)



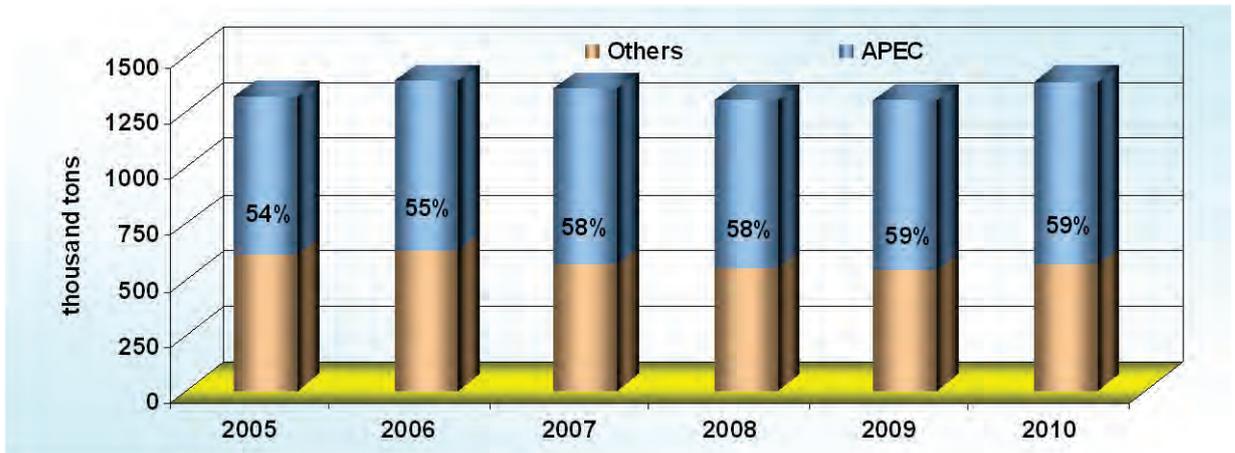
APEC share in global nickel consumption (Rusmet Evaluation)

APEC members play a fundamental role in the global nickel market. Their share in the global nickel production increased from 64% in 2000 to 68% in 2008. Among APEC economies Canada, Australia and Russia play a crucial role in nickel mining. Their share in the global production in 2008 amounted to 44%. It should be noted that increased share of APEC in the global nickel output was mainly due to the production growth in China, Indonesia and Philippines.

APEC share in the global nickel consumption in 2000 and 2008, %



APEC share in the global nickel consumption



The share of APEC in the global consumption of nickel grew from 54% in 2005 to 59% in 2008. China plays a fundamental role in nickel consumption among APEC economies. The share of nickel consumption in this economy against the global consumption volume amounted to 36%, summarizing the results of the I quarter of 2009. In 2005, the share of China in the global consumption amounted to 15%. However, based on the results of 2008, it already reached 23.5%. Increased nickel consumption in China has occurred due to the increased production volume of stainless steel, as well as nickeliferous cast iron. It should also be noted that US, Japan, Korea and Chinese Taipei and Korea also account for the significant share of the global nickel consumption.

The share of APEC in the global raw nickel trade is quite significant. In 2000 APEC share in the global export amounted to 35 %, while in 2008 it virtually remained the same. The global import share of APEC fell from 60 % in 2000 to 45 % in 2008.

China

Production of nickeliferous cast iron in China in 2008 amounted to approximately 60 thousand tons. in nickel equivalent, as compared to 85 thousand tons in 2007. Two or three years ago it was forecasted that China would produce nickeliferous cast iron above 100 thousand tons.per year in value of nickel content. However, as a result of the recent global economic events, production of nickeliferous cast iron in China has become unprofitable, since nickel ore has to be imported and coke and electricity prices also grew quite significantly.

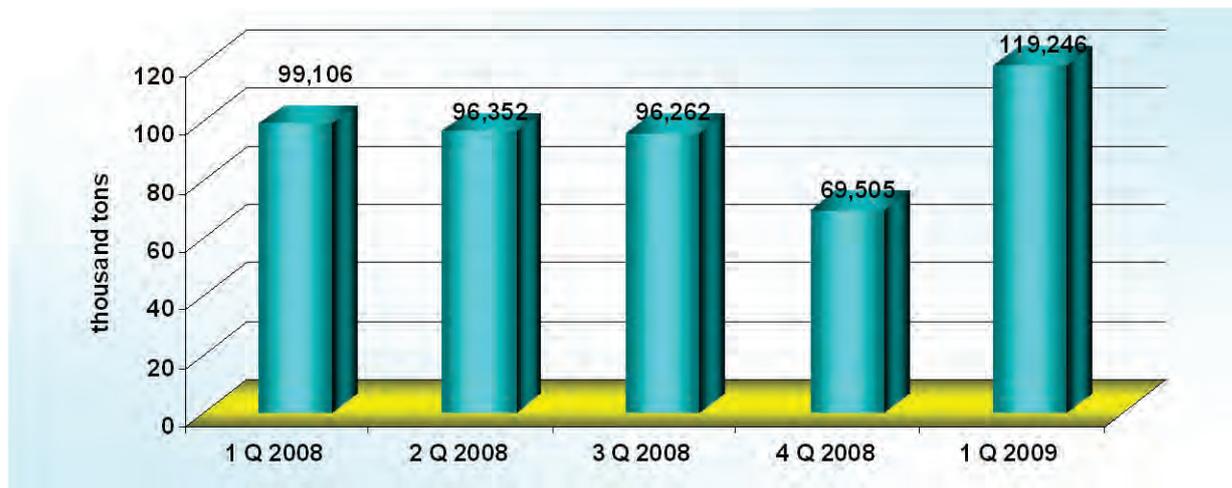
Nickel-containing cast iron production in China is likely to decline. However, some manufacturers are still trying to maintain high level of production by importing high-quality nickel ore from Indonesia.

The import of refined nickel to China in 2008 grew by 12. 2 % as compared to 2007 and amounted to 118,1 thousand tons. The import of nickel concentrate declined by 20.6 % and equaled 12.3 mln.t. The export of refined nickel from China in 2008 amounted to only 6,6 thousand tons which is by 61.3 % lower than in 2007.

In 2008 apparent nickel consumption in China amounted to 361,3 thousand tons, which is by 9.4% higher than in 2007. The increase in consumption was due to the high volume of nickel used in the first half of the year during the growth of stainless steel production in China. In the I –st quarter of 2009 nickel consumption in China grew by 72%, as compared to the IV-th quarter of 2008 and by 20% as compared to the I-st quarter of 2008. Increased nickel consumption is related not only to the increased nickel use in stainless steel production, resulted from nickel price drop, but also to the increased volume of nickel state reserve in China

Nickel import to China during the I-st quarter of 2009 grew to 32,6 thousand tons, which is by 65 % higher against the IV-th quarter of 2008. However, it still remains below the level of the I-st quarter of 2008.

Nickel consumption in China by quarters



The largest nickel producer in Asia, Chinese JNMC, plans to increase production of nickel in 2009 to 120 thousand tons. In 2008, the company produced 104,6 thousand tons. of nickel. In view of the current economic situation Jinchuan wants to get a larger market share of nickel, thus, increasing its production, though, overall nickel consumption in China will continue to decline amidst the economic slowdown. Increased nickel production by Jinchuan will also adversely affect nickel import of to China.

Nickel output of major Chinese companies, thousand tons

Company	2007	2008	Difference, %	2009 plan	Difference, %
JNMC	112,5	104,6	-7.0	120,0	14.7
Jien Nickel	8,0	9,5	18.8	9,0	-5.3
Xinxin Mining	5,0	6,7	34.0	9,0	34.3
Inco Dalian Plan	-	8,0	-	10,0	25.0
Yuanjiang Nickel	1,0	1,5	50.0	1,0	-33.3
Yulin Weinie	0,2	2,0	900.0	2,0	0.0
Jiangxi Lithium	1,3	3,0	130.8	4,0	33.3
NPI	85,0	71,0	-16.5	60,0	-15.5
Others	0,0	2,2	-	3,5	59,1

Source: Antiake

Comments: The data provided by Tex Report and Antiake might disagree, since they might take into account various assets of the company that are located outside of China.

Canada

Nickel production in Canada in 2008 rose by 1.8%, as compared to 2007. However, amidst the global economic decline, from the beginning of 2009 there has been a tendency to reduce nickel mining. The same applies to primary nickel production. If in 2008 there was a 2.2% increase, as compared to 2007, in January-February 2009, the production fell by 20% as compared to same period in 2008. However, refined nickel production continued to grow in the first two months of 2009. It should be noted that refined nickel production demonstrated the highest growth according to the results of 2008 and during the first two months of 2009 (by 8.1 and 6.6% respectively).

Nickel production in Canada, thousand tons

Indicator	2007	2008	Differ, %	2 months 2008	2 months 2009	Differ., %
Nickel mining	254,915	259,588	1.8	44,671	35,392	-20.8
Primary nickel production	244,539	250,037	2.2	42,643	34,112	-20.0
Refined nickel production	162,646	175,828	8.1	26,478	28,231	6.6
Shipment of refined nickel to the domestic market	4,153	3,75	-9.7	0,655	0,473	-27.8

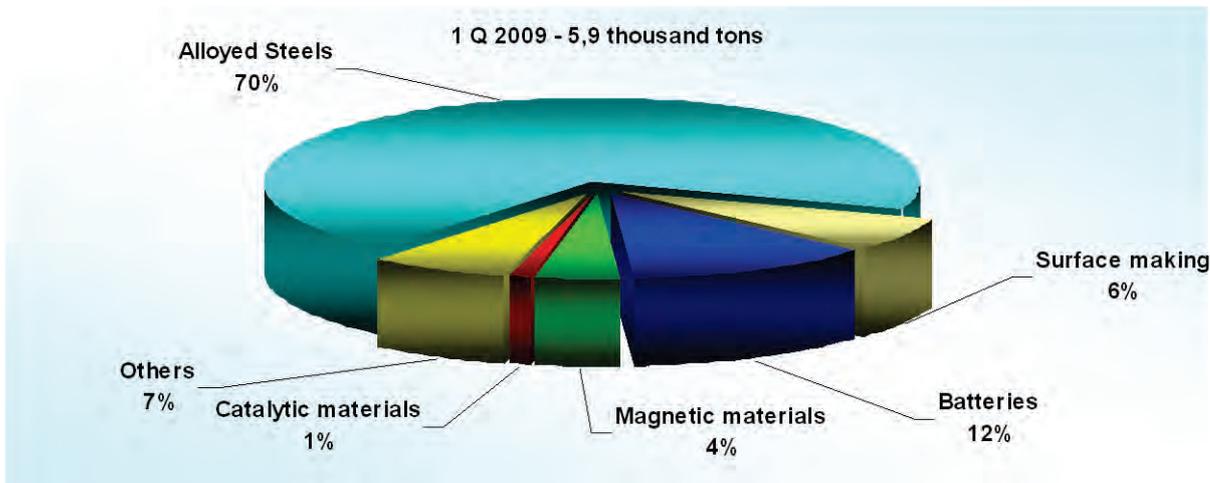
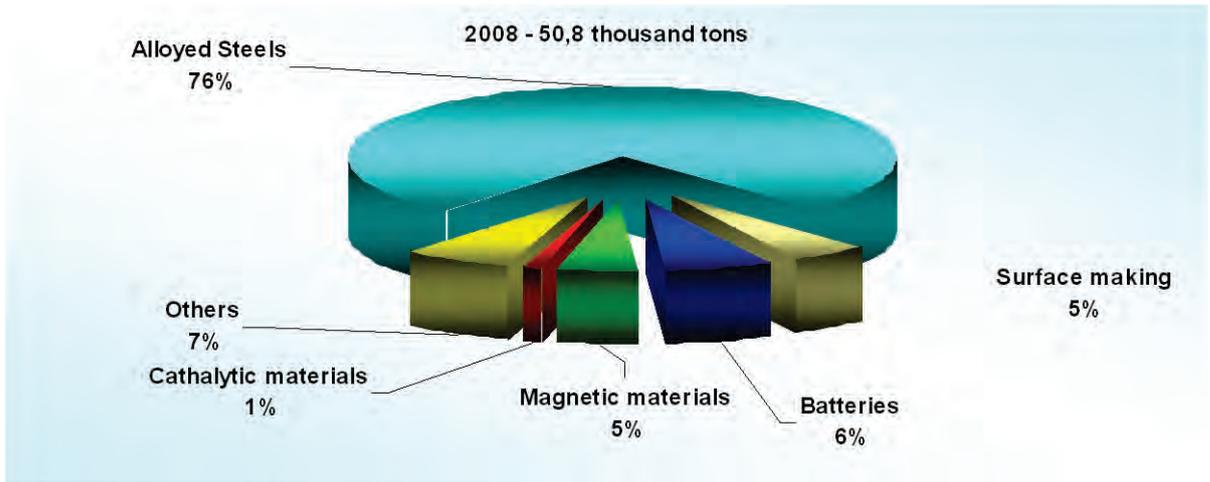
Source: INSG

Japan

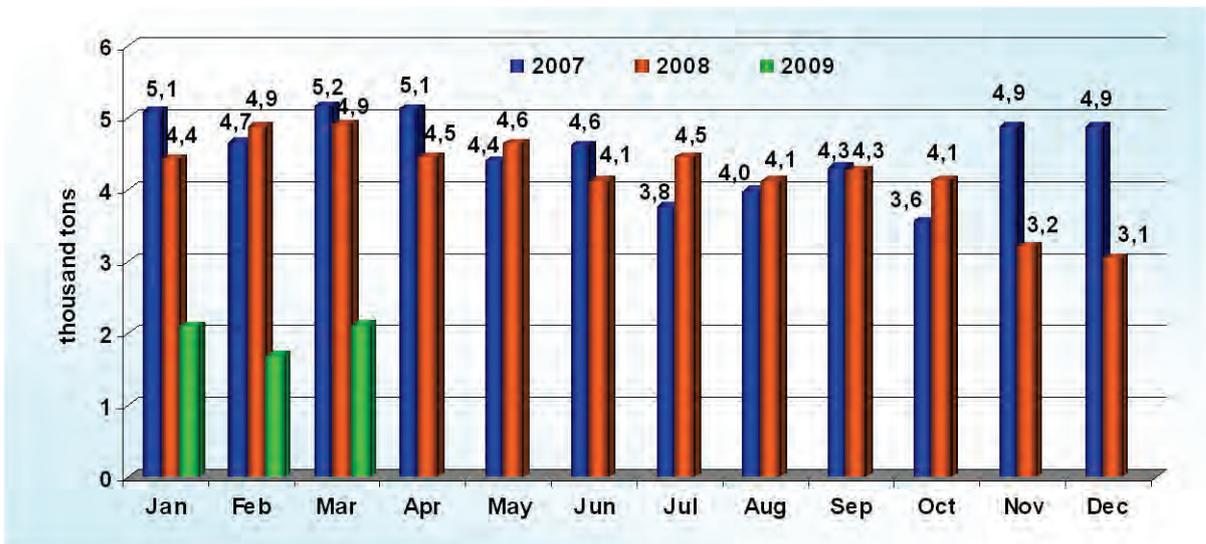
In 2008, Japan reduced its nickel production by 4% as compared to 2007. Since in Japan, nickel is produced from imported ore, maintaining high production level becomes challenging.

Ferronickel producers in Japan have also been reducing their production. Oheyama plant owned by Nippon Yakin Kogyo Company has 5 furnaces, but beginning with the IV-th quarter of 2008 only three of them have been operating. The capacity of the plant is 12 thousand tons of nickel in ferronickel annually.

Nickel consumption structure in Japan by production sectors, 2008, % (INSG)



Nickel consumption in Japan by months during 2007-2008., %



Nickel consumption in Japan in 2008 amounted to 50,75 thousand tons., which is by 6.9% lower than in 2007. After automobile manufacture in Japan began to decline in November 2008, nickel consumption in most sectors of the economy declined as well. From January through October 2008 nickel consumption in Japan amounted to 4 thousand tons. per month and in November it dropped to 3 thousand tons. per month. In 2008 Japan consumed 37,4 thousand tons. of nickel for the production of special steels, 2,259 thousand tons. for coating, 3,122 thousand tons. for batteries manufacture, 2,377 thousand tons for production of magnetic

material, 0.417 thousand tons. for production of catalysts and 3,179 thousand tons. for other purposes.

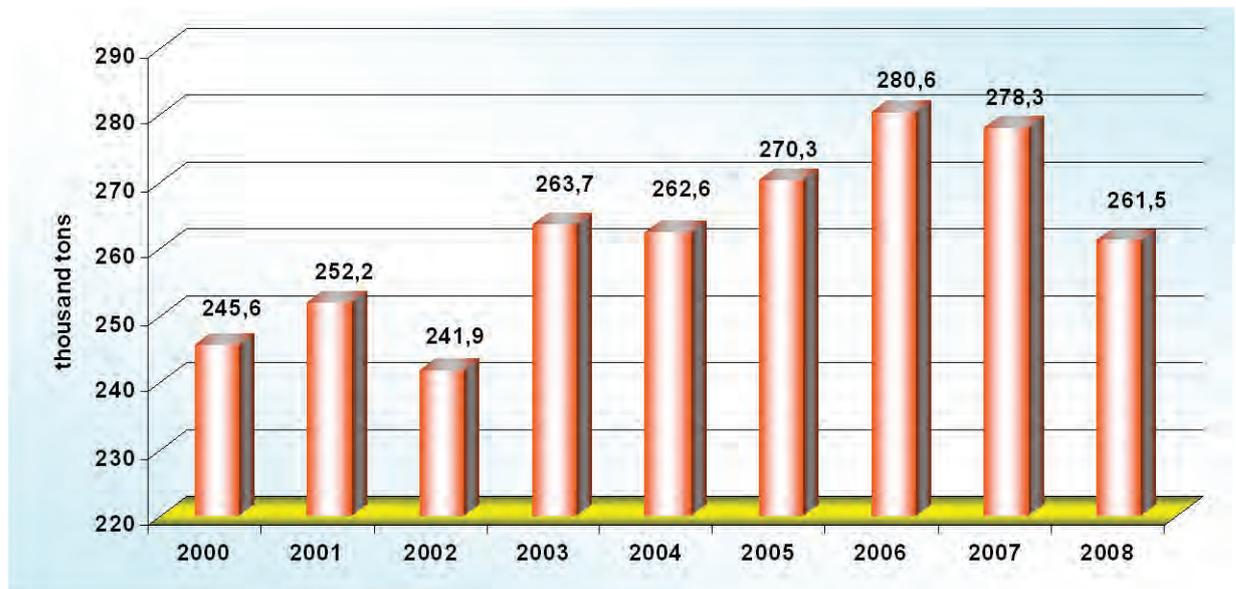
In the I quarter of 2009, nickel consumption in Japan demonstrated a considerable decline, as compared to the I quarter of 2008. Nickel consumption dropped 2.5 times. The volume of nickel used for the production of special grades of steels declined as well. However, the share of nickel used for manufacturing of batteries has grown.

Russia

Russia is one of the major producers of nickel in the world. The share of Russia in the global nickel production is about 20%. However, nickel consumption in Russia is low. A large portion of Russian nickel output is exported.

Peak nickel production in Russia was registered in 2006 and then it began to decline. In 2008, nickel production in Russia fell by 6% compared to 2007.

Nickel production in Russia during 2000-2008



Source: Rosstat

14. THERMODYNAMIC APPROACH TO SUSTAINABLE DEVELOPMENT ISSUE

14.1. Indices of Sustainable Development. Thermodynamic Approach to Sustainable Development Issue

The development of the world economies in general and APEC economies specifically is referred in terms of physics to irreversible processes. The field of thermodynamics, specifically the thermodynamics of non-equilibrium irreversible processes, is the field, which due to its nature and mathematical tools is most suitable for description of economies. Each economy has a large number of independent parameters, which characterize its status at a given moment as well as the huge number of external forces and factors, which have impact on it. For each economy at a given moment t there is a corresponding function F :

$$F(t) = F(P_1, P_2, \dots, P_n),$$

where P – parameters (social, economic, political), which characterize the system status at a given moment; each parameter P is also complex function of time and several other independent variables $X_1(t), \dots, X_N(t)$:

$$P = P(t, X_1, \dots, X_N).$$

In this case the general system of APEC economies consists of a number of such functions $F(t)$ and the primary task is to determine parameters $P(t)$ as well as to determine their interrelations and degree of influence on the whole system. However, if we calculate with controlled accuracy the current status of the system we still encounter the issue of definition of what sustainable development is, and here the thermodynamics shall help us.

On the basis of mining sector experts poll the following parameters were distinguished which influence the sustained development of mining sector of APEC economies

Parameters which influence the sustainable development of mining sector

No	Parameter	Additions, comments
1	R – parameter showing natural resources, their accessibility, reserves	For example, there can be plenty natural resources in the economy but located in hard-to-reach areas or the areas without developed infrastructure.
2	Out – production parameter	The larger the volume of mining sector products the larger the value of parameter
3	T – parameter showing price level for mining sector products	This parameter was designated as T similarly to temperature. The higher the prices the higher the ‘temperature’ of the market which can be ‘heated’ or ‘overheated’
4	O – price level for energy resources, oil	A very important parameter because mining industry is largely dependent on cost of ocean freight related to the cost of fuel oil, diesel oil. Non-ferrous industry is largely dependent on price of electric power which is directly connected to the cost of energy resources.
5	W – parameter of protectionism, trade barriers	On the one hand, the world aims at openness and becomes more open. On the other hand, the number of anti-dumping cases is gradually increasing, also increases the number of economies limitations for foreign suppliers especially at such tough time as

		now.
6	L – labor resources	Parameter characterizes the availability of personnel in economy as well as the level of education, competence and skills required for work in mining sector.
7	Q – social parameter, mining sector employees standard of life, compensations	A very important parameter. Higher value of this parameter will point to the stability of parameter L – labor resources in the economy
8	E – parameter of environmental pollution	Mining industry impacts the nature and environmental conditions in many large cities. But this parameter can not always be the most important for the economy government. For example, at present when a number of industries are on the brink of collapse this parameter will be moved aside.
9	F – financial parameter	Investments in economies, availability of loans for real economy. When the value of this parameter is low the mining sector in any economy is doomed.
10	D – parameter of indebtness, foreign debt status	Characterizes economy and corporate debt environment. parameter is directly related to financial parameter F, as well as indirectly influences parameters C and S.
11	SF – governmental regulation (taxes, central funding)	Governmental policy within mining industry, tax benefits, special governmental programs of mining sector development.
12	P – political factor (public authority stability, legislative base of industry support)	In economy with unstable state authority the economy is also unstable.
13	N – factor of regional stability	Everything can be OK within individual economy but there can be military conflict near its borders, parameter shows the peace-loving nature of neighboring economies
14	Info – parameter of industry informational transparency	This parameter is never mentioned, however nearly everything depends on it. At present the global problems are solved virtually by guesswork, as until now the information system of monitoring of economies within the mining sector is not created which should collect and interpret relevant information. Common knowledge data which are either available or are received rather late usually come from one source and are not checked. There is not itemization sufficient for making conclusions as everything on the level of expert opinion.
15	Re – parameter of recycling;	Parameter is closely connected both with R and with environmental E. A very important indicator but it is taken into account mainly by developed economies rather than emerging ones.
16	C – parameter of internal consumption of mining sector products;	This parameter is directly connected with the social parameter but in this case for all population of a economy. The higher level of consumption of mining sector products (end products) the higher the standard of life, quantity and quality of

		consumed services in economy.
17	In – parameter of up-to-date innovation equipment;	Both cost of production and ecological component depend on this parameter.
18	Fr – parameter of freight availability;	The fuel prices can be low but there can be lack of ships causing high freight cost. Since 2000 there was open talk about lack of ships and its influence on mining sector.
19	I – parameter of infrastructure (ports, roads);	How much items can be exported or vice versa import raw materials for production purposes? How profitable is the development of new deposits etc. if the infrastructure is not developed or underdeveloped.

Further the experts evaluated each parameter according to 1 to 10 scale which makes the upper and lower value limits. For mining sector of each APEC economy was obtained the set of parameters for 2000, 2005 through 2009.

14.2. Sustainable Development Criterion

Now to the root of the matter. How can we on the basis of parameters obtained by the experts and being well aware of the fact that they are subjective nevertheless try to assess the sustainable development of mining sector of APEC economies?

What can be considered as criterion of sustainable development? Can we use numerical data, which will enable us to make conclusion that the current status of economy differs from previous one or what will be tomorrow in terms of sustainable development? If we exclude environmental issues and future generations we will come to the conclusion that the system, which treats the unlimited growth as progress, is the sustainable development system. However the very principle of sustainable development as principle which measures the stability of well-being of present and future generations in environmentally safe world requires different approach.

We shall use thermodynamic approach in order to solve this problem. According to the principles of thermodynamics one of the most important system parameters is entropy. In our system it is convenient to examine entropy in terms of probabilistic Boltzmann entropy: $S = k \ln W_c$, where W_c – is the quantity of probabilistic statuses of mining sector of specific economy, k – Boltzmann coefficient (in problems related to calculation of only probabilistic entropy is often taken as equal to 1). For APEC economies as unified system: $S = \ln W_a$, where W_a – is a number of probabilistic statuses of mining sector of APEC economies.

High prices for mining sector products, high demand, available loans increase the number of possible statuses of the system. And vice versa, with bad ecology, high oil prices and huge sovereign debt burden the number of possible statuses of the economy is less. We have come to solution of combinatorial problem:

For mining sector of specific economy:

$$W_c = T * R * P * Fr * Q * L * Re * F * N * I * SF * E * Info * SF * C * In * Out * Fr * W / (D * O),$$

Here we come across the discrepancy in calculation of the number of possible statuses of specific system on a 'single economy' scale and of the whole system on 'all APEC economies' scale. For big system the more protective measures to protect the internal markets the less number of possible statuses and, vice versa, for single economy the protective measures for growth of W_c – is good on condition that other economies do not use such measures. Therefore,

passing through the stage of making the equation for W_c and W_p , we shall get the following determination of probability for W_a :

For mining sector of APEC economies:

$$W_a = T * R * P * Fr * Q * L * Re * F * N * I * SF * E * Info * SF * C * In * Out * Fr / (W * D * O),$$

which leads us to the conclusion that entropy for individual economy or shall we call it 'index of sustainable development':

$$S_c = \ln W_c$$

For APEC economies the index of sustainable development:

$$S_a = \ln W_a$$

And now we came directly to the issue: what is to be considered as sustainable development? We shall base our conclusion on the following principle: sustainable development is the development, which does not contradict to the nature.

According to the second rule of thermodynamics during irreversible processes entropy either increases or is equal to zero: $S(t_2) > S(t_1)$, where $t_1 < t_2$, t – time.

Then, in terms of temporal development of economies, entropy or index of sustainable development:

$$S(t_2) > S(t_1), \text{ where } t_1 < t_2, t - \text{time.}$$

Therefore we should get the process where indices of sustainable development:

$$\begin{aligned} 0 < \Delta S_a &= S_a(t_2) - S_a(t_1), \\ 0 < \Delta S_c &= \sum S_c(t_2) - \sum S_c(t_1), \end{aligned}$$

where time $t_2 > t_1$.

At the same time ΔS_c indices summing -up should be done in accordance with the rule, which takes into account the fact that each economy has its weight in world economy. It is necessary to add weight parameter: GDP parameter, then:

$$\sum S_c(t) = S = G_1 * S_1 + G_2 * S_2 + \dots + G_N * S_N, \text{ where}$$

$G_1..G_N$ – GDP parameter;

1,2 ..N – number which corresponds to specific APEC economy.

Of physical significance in our model is the parameter of entropy change, which is very important if we take into account the fact that at the first stage parameters are subjective as the experts determine them. The subjectivity level can be reduced when the present status is compared with previous or future one. Therefore when we determine the entropy of the whole system it is more convenient to set value of '5' to all parameters for 2009 whereas parameters for the previous or subsequent years shall be assigned the values which correspond to the numerical indicators of the period under examination comparing to 2009 (level of production, remuneration of labor, prices and other parameters can be calculated). Thus the suggested model makes it possible to determine in numerical terms the difference between current and previous status as well as simulate some processes, when, for example, protective measures which caused short-term positive effect on mining sector of specific economy makes impact on the whole system and then on the very economy which introduced the said measures.

Under sustainable development of mining sector of APEC economies the irreversible process is understood under which environmental safety is observed and interest of neighboring economies is taken into account

In the strategy of sustainable development the interests of APEC economies community should prevail over interests of individual economies.

14.3. Calculation of Sustainable Development Rating of APEC Economies' Mining Sector *

Australia, Brunei, Viet Nam, Hong Kong, China, Indonesia, Canada, China, Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Russia, Singapore, USA, Thailand, Chinese Taipei, Philippines, Chile and Japan.

Having calculated the index of sustainable development for each system on the basis of Rusmet expert estimates, and having examined the average prices of oil, metals as well as the above parameters we shall have something like rating of Sustainable development in 2009 and 2008 (without taking into account the weight of economies in global GDP):

2009

Economy	Sc
Canada	26.4258792
USA	26.0785295
Japan	25.2265893
Australia	24.3828053
Korea	24.2945502
China	23.9611752
Chinese Taipei	21.8584338
Chile	21.7122512
Mexico	21.282653
Russia	20.5850515
Singapore	20.0697715
Peru	19.8919043
Hong Kong, China	19.6279388
New Zealand	19.5997679
Malaysia	19.5680832
Viet Nam	19.2145055
Thailand	18.9756136
Indonesia	16.2877661
Philippines	16.016249
Brunei Darussalam	13.5721643
Papua New Guinea	9.23851125

2008

Economy	Sc
Canada	26.6051035
USA	26.1407979
Japan	25.4090129
Korea	25.1010261
Australia	24.7600995
China	22.664493
Chinese Taipei	22.3566083
Russia	22.1154462

* This evaluation is a research outcome of the project team, it's for references only

Chile	21.9999333
Mexico	21.6836638
Singapore	20.7404458
Peru	20,4841453
New Zealand	20.0948452
Malaysia	20.0833632
Hong Kong, China	20.0258523
Thailand	19,344711
Viet Nam	19.196487
Indonesia	17.2246761
Philippines	16.8473819
Brunei Darussalam	14.3830945
Papua New Guinea	10.6203513

As we pointed out above of physical significance is the time variation of entropy. If we examine the results of the global financial crisis we reach the disappointing conclusion: due to high prices of oil, prices of mining sector products as well as introduction of protective measures by economies in order to protect the internal market, due to general crash of economies we are at the stage of UNSTABLE (UNSUSTAINABLE) DEVELOPMENT or, to be more correct – stable downfall:

**Indices of sustainable development $\sum Sc(t)$,
taking into account contribution of economies of APEC economies in global GDP**

Economy	2000	2008	2009
USA	612.68907	540.853108	539.5647758
China	162.50344	258.375221	281.3521197
Japan	194.225276	161.855412	160.693374
Russia	59.0086733	72.9809725	61.75515449
Canada	56.2023293	50.2836456	51.44325901
Mexico	54.0090527	48.5714069	49.10333706
Korea	43.8034675	46.4368983	46.29326548
Australia	30.3386003	28.7217154	29.13257576
Chinese Taipei	24.086034	23.9215708	24.09017984
Indonesia	20.5735601	22.5643257	21.97708279
Thailand	14.262936	15.4757688	15.63590559
Malaysia	10.2016934	11.2466834	11.28687039
Hong Kong, China	8.36076732	9.01163353	9.09754962
Chile	7.6697109	7.91997599	8.050902761
Philippines	7.2208425	7.74979566	7.588498755
Singapore	6.59877838	7.25915605	7.235152634
Peru	6.32327824	7.16945087	7.171031506
Viet Nam	4.96860348	6.71877045	6.92682923
New Zealand	3.60438694	3.41612368	3.431919358
Brunei Darussalam	0.14446153	1.43830945	1.397932923
Papua New Guinea	0.21002176	0.21240703	0.190313332
$\sum Sc(t) = S =$ $G1*S1+G2*S2+...GN*SN$	1327	1332	1343

Table of values of $\sum Sc(t)$ for 2000 through 2009

2000	2005	2006	2007	2008	2009
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1315	1305	1304	1323	1332	1343
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At the same time for entropy of the whole system S_a of mining sector of APEC economies we get the following values:

2000	2005	2006	2007	2008	2009
18.7	19.02	19.04	18.81	18.11	17.70

We can see that the years 1999-2000 were critical, when after the lowest point the increase of oil prices started, and then the years 2006-2007 when mining sector of APEC economies adapted to ever growing prices. But it was the period when the global community should have paid close attention to price race – after 2006 the prices on no account must be increased.

15. SOME CONCLUSIONS

15.1. Recommendations for APEC Economies on Support of Mining Sector Sustainable Development

Depending on further behavior of oil prices three options of entropy of system **Sa** in 2009 are possible:

Sa	2009
17.70	oil prices at \$60 level, metal prices are gradually increasing
16.7	steep growth of oil prices, increase in protective measures and anti-dumping cases investigations
18.7	oil prices at \$40 level, but governments provide the rapid growth of investments in economies, restructuring (freeze) of national and corporate debts;

The year of 2009 is a critical moment for sustainable development of mining sector. The economies governments should take coordinated steps to prevent the drop of industry to 90s level in terms of sustainable development.

In 2009-2010 the main steps should be aimed at the improvement of the following parameters:

W – parameter of protectionism	Trade barriers should be non-existent or be minimal. Introduction of new barriers is unacceptable.
Info – parameter of industry informational transparency;	A very important parameter, which until now was practically overlooked. It is necessary to create shared information system of mining sector of APEC economies which shall provide in inline mode the industry indicators: statistics, economonitoring, status of sustainable development, ‘traffic-light’ system, i.e. simulation of results of governmental decisions on market regulation
C – parameter of internal consumption of mining sector products; I – parameter of infrastructure (ports, roads)	Governmental investments in infrastructure shall promote the increase of internal demand

15.2. Further Sustainable Development Model Evolution of APEC Economies’ Mining Sector

1. Establishing of uniform standards and creation of procedure of determination of P(t) parameters. Until now parameters were determined by expert assessment.
2. Determination of weight (contribution) of each parameter in sustainable development, determination of interrelations;
3. Determination of stability of mining sector of APEC economies in relation to other economies;

4. Development and use of theory of sustainable development in mining sector of APEC economies similar to Theory of thermodynamic stability: statuses corresponding to thermodynamic equilibrium or balanced economies which correspond to minimum entropy production in line nonequilibrium thermodynamics are automatically stable.
5. Simulation of influence of oil prices increase on sustainable development;
6. Making calculations for each mining sector segment: ferrous and non-ferrous metallurgy, coal industry, ore production, etc.
7. Impact of standard of life of general public on sustainable development of mining sector of APEC economies.

16. REFERENCES

1. Metal Bulletin, www.metalbulletin.com
2. WSA, World Steel Association, www.worldsteel.org
3. Tex Report, <http://www.texreport.co.jp>
4. SBB, Steel Business Briefing, www.steelbb.com
5. AME, AME Mineral Economics, <http://www.ame.com.au>
6. ABARE, Australian Bureau of Agriculture and Resource Economics, www.abare.gov.au
7. SECEX, <http://www2.desenvolvimento.gov.br>
8. BP Statistical Review of World Energy,
http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2008/STAGING/local_assets/2009_downloads/statistical_review_of_world_energy_full_report_2009.pdf
9. UNCSD, United Nations Commission on Sustainable Development,
www.un.org/esa/dsd/index.shtml
10. CRU, www.steelweek.com
11. Chinese Taipei Directorate General of Customs, <http://eweb.customs.gov.tw/>
12. WBMS, World Bureau of Metal Statistics, www.world-bureau.com
13. Economist Intelligence Unit, www.eiu.com
14. U.S. Geological Survey, www.usgs.gov
15. IAI, International Aluminium Institute, www.world-aluminium.org
16. ILZSG, International Lead and Zink Study Group, www.ilzsg.org
17. International Nickel Study Group, www.insg.org
18. Antiake, China Metals Information Network, <http://www.antaike.com>
19. ICSG, International Copper Study Group, www.icsg.org
20. Metal Pages, <http://www.metal-pages.com/>
21. Platts Metals Week, www.platts.com
22. Ryan's Notes, www.ryansnotes.com/
23. Industrial Minerals Weekly, <http://www.indmin.com/>
24. Mysteel, www.mysteel.com
25. GFMS, www.gfms.co.uk
26. SteelOrbis, www.steelorbis.com
27. Weekly Fax
28. Asian Metals, www.asianmetal.com
29. Japan Metal Bulletin, www.japanmetalbulletin.com
30. Ukrainian Metals, <http://www.business.dp.ua/rusmet/mur.htm>
31. Metal - Courier , www.metalcourier.ru
32. International Monetary Fund, www.imf.org
33. Rosstat, www.rosstat.ru
34. Rudprom, www.rudprom.ru
35. Interfax, www.interfax.ru
36. Leading Practice Sustainable Development Program www.industry.gov.au/sdmining
37. The Sustainability of Mining in Australia: Key Production Trends and Their Environmental Implications for the Future, Research Report, Mudd, G.M. 2007, Department of Civil Engineering, Monash University and Mineral Policy Institute

Annex A. CONFERENCE SUSTAINABLE DEVELOPMENT OF MINING SECTOR IN APEC CONCLUSIONS

The APEC MTF Conference on Sustainable Development of Mining Sector in APEC was held in Singapore on July, 23-24, 2009.

Forty five participants from eighteen APEC Economies, and the World Bank attended the MTF Conference.

The Conference represented an opportunity for APEC economies to allow experts to network and exchange views on sustainable development in the mining sector.

The following economies made presentations or/and comments on the status of sustainable development activities in their economies: Australia, Canada, Chile, People's Republic of China, Indonesia, Japan, Malaysia, Mexico, Papua New Guinea, Peru, the Philippines, Republic of Korea, the Russian Federation, Chinese Taipei, Thailand, the United States of America and Viet Nam. Presentations were also made by the APEC Secretariat Program Director on Sustainable Development, the World Bank and AIM. A number of key themes emerged:

- that the APEC Mining Task Force is the appropriate Forum to pursue opportunities for sustainable development in APEC Mining Sector given the importance of Mining to APEC Economies;
- the need for the implementation of sound corporate social responsibility;
- the need to address shortages of water and human resources;
- the need for adequate mine reclamation.

A consensus was reached that in spite of the current economic downturn companies, and all stakeholders, cannot afford to postpone sustainable development activities as they are integral to the financial performance of companies.

Regarding corporate social responsibility, a representative of the HRDWG made a presentation on its CSR mining workshop, scheduled for November 2009 in the Philippines. The objectives of the workshop, including educating stakeholders and increasing the awareness of best practices will be beneficial to the future work of the MTF.

APEC economies agreed that the conference made substantial progress in advancing an understanding of the application of sustainable development in the APEC mining sector.

The Conference discussed the project: "Sustainable Development of Mining Sector in APEC", which drew on responses from experts in APEC member economies to emphasize the role of APEC economies in Global mining and metallurgy; provide short and long term forecasts for mining sector; offer a new model describing an equilibrium state approach to the measurement of sustainable development processes and show the high importance of mining in APEC sustainable development processes.

The Conference noted that the project is a foundation for further work on sustainable development in the mining sector in APEC, and the Conference recommended that the draft project report should be submitted to the MTF for its response, in advance of a decision by the MTF on whether to submit a final report from APEC to the UNCSD Process.