MARKET'S RESEARCH & FORECATING

Market research takes place at all stages of reproduction - the production, distribution, circulation, consumption.

Moscow, MGIMO, 2011

- **The main objects of market's research..**
- **The evolution and fundamental features.**
- **What is forecasting. How it can be applied.**

WHAT CAN WE WATCH

- PRICE'S RAISING UP
- STABILITY
- PRICE'S FALLING DOWN
- STABILITY
- RAISING
- CYCLE WAVE

Subject 1

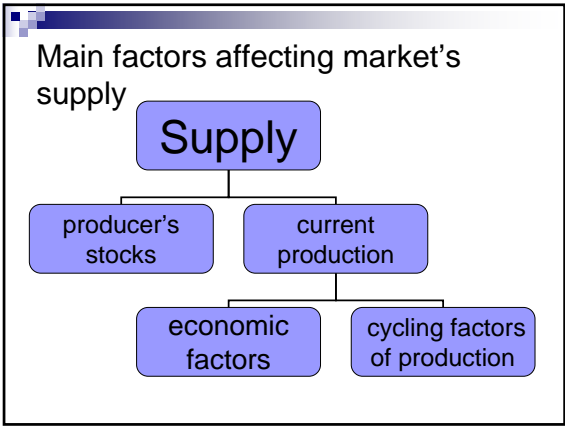### The main objects of market's research..

Market research takes place at all stages of reproduction - the production, distribution, circulation, consumption.
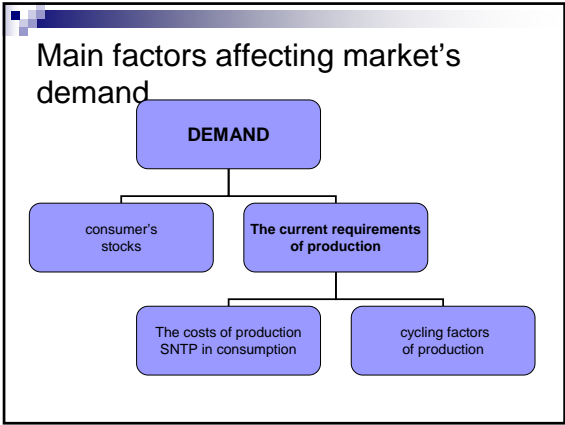
The research of markets situation helps to understand how

1) to organize the process of production, exchange and consumption

2) To make recommendations:

a) If it needs to use new technologies

b) If it needs to refuse from the production of such goods, which don't satisfied the world standard demand,

or

c) If it's necessary to refuse from a production of these goods which it would be better to buy from another countries.

THE WORLD MARKET AS AN OBJECT OF RESEARCH

- The world market has a very difficult hierarchy
- The world market is formed by influence of wide row of economic/ political and social factors
- Its structure is a big system with good-developed infrastructure
- The world market is a sensitive reflection of all events, happening in the world.

Main factors affecting market's supply

Supply

- producer's stocks
- current production
  - economic factors
  - cycling factors of production

Main factors affecting market's demand

DEMAND

- consumer's stocks
- **The current requirements of production**
  - The costs of production SNTP in consumption
  - cycling factors of production

In this way we can define the main objects of market's research:

- **The economic situation** "Economical conjuncture" – it may be economy of some countries, separately one economy, or some spheres of economy or some industries. The global object is the world economy which is consisted of different economies of all countries we have on the earth now.

- **Market's situation**. In global imagination we can present this object like a world market which consist of a huge different markets, so in this case we use a classification, helped us to research this objects.

Market research

Market research takes place at all stages of reproduction - the production, distribution, circulation, consumption.

Subject 2
The evolution and fundamental features

- **The evolution and fundamental features**
- **The research of market started its way in the second half of the 19th century**
- Many economist from different countries paid a big interest to the markets situations
- They were seeking for the right indicators reflected the state of an object in the past (some retrospective period) and in the current period
- The world market was developing very rapidly and the share of manufactured good was growing very fast

new world market features in the 20th century

- ☐ Instability
- ☐ unsteady (changeable)
- ☐ Different indicators have opposite ways at the same time.
- ☐ The indicators have different rates of growth.
- ☐ At the same time indicators can reflect the direct opposite of economic situation

conditions and laws governing the formation of economic situation

1. Scientific and technical progress and a change in the rates of its development;
2. The major cycle of economic situation;
3. Intermediate-term cycle of economic situation;
4. Structural crises and structural shifts in the economy;
5. State-monopolistic regulation of the economy;
6. Change in forms and methods of competition;
7. Gradual and steady exhaustion of natural resources;
8. Demographic changes and an increase in the population;
9. Fight between different groups of countries for the influence world markets situations.

Factors affecting economic situations

- **Factor is motive power**, which determines the nature of the changing situation, its direction and the rates of development (i.e. the form of the manifestation of economic laws).
- Classification
- Cyclic or non cyclic
- Factors belonging with different sides of market mechanism
- Factors of demand, physical commodity reserves in the producers of the means of production

Classification of economic factors

- Price forming factors.
- Factors of proposal, physical commodity reserves in the producers of commodities.
- Factors, belonging with the object of study.
- endogenous factors - are caused by laws governing the development of the separate object of study (physical commodity reserves on the market for the production of automobiles).
- Exogenous factors - are determined by interaction of the separate elements of object of study with the environment.
- Factors by the duration of the action: 1) Long-term (8-10 years). 2) Intermediate-term (3-8 years), 3)short term (several months - 1,5 years).

- Predictability 1) forecast - government control, the regulation of monopoly, cyclic factors.
- Unpredictable - weather, political conflicts, new layers.
- On the directivity of the action: 1) stimulating - increase in the planted areas, 2) restraining - comrade. - mat. reserves.
- Controllability: 1) Adjusted, only predicted, endogenous, 2) not controlled.
- Sphere of the origin: 1) Social, 2) political, 3) economic, 4) natural.

FACTORS

- **to environmental factors direct effects** are as follows: Consumers Products Company
- Suppliers firm's resources
- Laws and government agencies
- Trade unions and other civil society organizations
- competitors
- **Indirect factors**:
- The state of the economy
- Technological progress
- Socio-cultural factors
- Political factors
- International Events
- single events can not be the subject of the forecast. Predicted only the general properties and laws that reflect the stable causal relationship.

Classification of commodity markets

Methodology for market research suggests the need to classify them.

I. The structure of the economy

1. Markets such as countries with economies in

a) Subsistence farming

b) Markets commodity-exporting countries

c) Markets of the industrialized developing countries

d) Markets of countries of post – industrialized period

Markets Classification

**II. Classification by income level and nature of their distribution:**

- 1. Countries with low income (very low and mostly low income)
- 2. Countries with very low and very high-income
- 3. Countries with low, medium and high-income
- 4. Countries with a predominantly middle-income family
- 5. Countries with dominant export of row materials

MARKET'S CLASSIFICATION

III. Geographical coverage

- 1. Domestic market
- 2 Wholesale and retail market
- 3. National market
- 4. Regional market
- 5. International market
- 6. World market
- 7. Closed and free sectors

Market's scheme
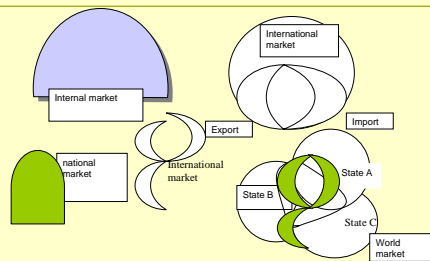
Market's classification

- IV. Geographical indication
- Markets of North America
- European markets
- Markets of Africa
- CIS markets
- Markets of countries with a transit economy
- Markets of Asia (middle east and far east, countries of south-east region); New industrial countries like China and India

by commodities

v. The commodity-industry feature

- **Machinery and Equipment Markets**
  - a) Different kinds of transport and trasport equipment
  - b) Electronic equipment
  - c) Electric power equipment
  - d) Equipment for plants, fabrics, factories, etc.
  - e) Office equipment
  - f) Mining equipment
  - g) Electric machines for population
  - h) Special technical equipment
  - i) Medicine equipment
  - j) Agriculture equipment
- **Markets of minerals rows and fuels**
  - a) Row metals and steel
  - b) Steel products
  - c) Colour metals
  - d) Colour metals products
  - e) Energy resources (oil, gas, coal, uranium concentrates)
  - f)
- **Markets of agricultural raw materials, food and forest products**
- **Services markets**

Classification of markets

VI. Sphere of social production

1. Markets for products of material production (raw materials, foodstuffs, machinery and equipment)
2. The commodity market intangible (intellectual) production (science and technology, technology, patents and licenses, know-how, works of art, books, movies, etc.)

VII. The nature of end-use

1. Capital goods markets
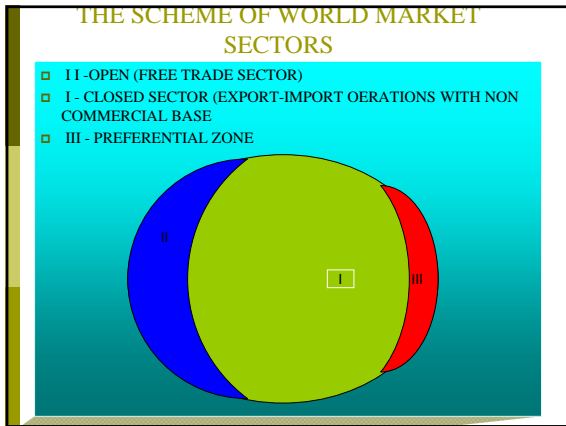2. Markets of consumer goods

VIII. Term use of goods

1. Durable Goods Markets
2. Markets-durable goods
3. Product markets disposable

IX. Organizational Structure

1. Different terms of trade
2. nature of the relationship between sellers
3. Nature of the relationship between buyers

World market is divided into two main sectors and a zone:

1.free sector
2.Private Sector
3. Preferential zone

THE SCHEME OF WORLD MARKET SECTORS

- I I -OPEN (FREE TRADE SECTOR)
- I - CLOSED SECTOR (EXPORT-IMPORT OERATIONS WITH NON COMMERCIAL BASE
- III - PREFERENTIAL ZONE

Subject 3

What is a forecasting

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statement

- *Forecast* - this is probabilistic judgment (scientifically substantiated) about the prospects, the possible states of one or other object or another or phenomenon in the future and alternative ways and the periods of their realization.
- *Prognostication* - this is the study with several stages, connected with the development of forecast.

Tasks of forecasting:

1. The first task is a definition of the possible economic targets, scientific and technological goals, which can be accepted by any firm or other types in enterprises and business organizations, which have operations in a foreign trade.
2. The second task is next: you must take in account and reveal all limitations which influenced the object or develop process. It's need to examine all science-technological trends with their consequences (sequels) in social and economic development.
3. The third task is: the analyzing of economic development's trends, social and political conditions, the conditions of environment.
4. The forth task is to reveal and to test all possible alternative ways of moving and reaching the perspective targets, this task is founded on the analysis about possible moving up and down of current events.
5. The fifth task is to mark: what labor, material and technological resources and also environmental resources can be needed for achieving the resolved targets.

METHODS OF PREDICTION

- The methods of prediction, used in economic situation studies, can be subdivided into the following forms (groups):
- - the extrapolation methods of prognostication,
- the methods of stimulation,
- the methods of expert estimations,
- the methods of normative prognosis.
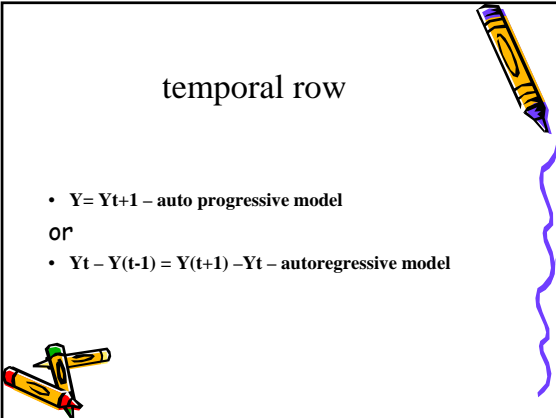

GROUPS OF PREDICTION METHODS

- ☐ The methods of an extrapolation.
- ☐ The methods of prognostic models' creation (These methods include economic and mathematic models, methods of cluster analysis, methods with using of computer's programs etc.).
- ☐ The methods of experts' estimations.
- ☐ The methods of normative models.

temporal row

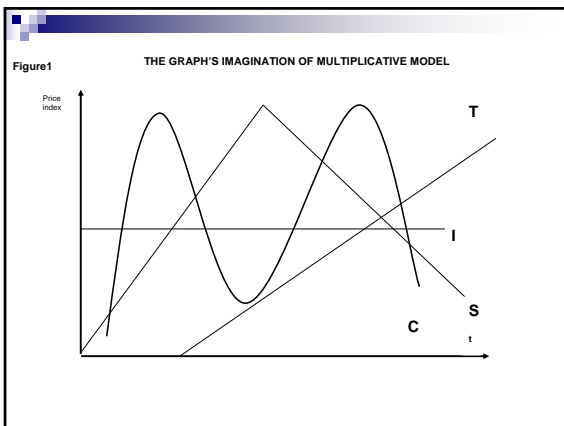- **Y= Yt+1 – auto progressive model**

or

- **Yt – Y(t-1) = Y(t+1) –Yt – autoregressive model**

Multiplicative model

- T (tendency)
  Cycle component (C)
  Season constituent part (S)
  Irregular fluctuations (I) or irrelevant factors
- MCS – market's currently situation
- MCS = T+C+S+I additive model
- MCS = T*C*S*I

Figure1   **THE GRAPH'S IMAGINATION OF MULTIPLICATIVE MODEL**

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The main stages of economic situation research

- ☐ The basic stages of the development of forecast can be reduced to the following:
- ☐ - the analysis of concrete economic situation;
- ☐ - the formulation of the problem of a forecast study;
- ☐ - the construction of theoretical model;
- ☐ - the evaluation of authenticity, accuracy, validity of forecast;
- ☐ - the production of recommendations for applying the forecast.

fundamentally different approaches

One important task of forecasting the socio-economic systems - predicting the thresholds of the development:
- identification of possible dates for major changes that mark a qualitative change in the processes under study,

for example, in predicting the socio-economic system of energy development such thresholds may be the emergence and spread of qualitatively new ways to generate energy (fusion power plants, fuel cells, etc.). Two ways of making predictions:

The first - to predict, starting today, gradually penetrates gradually from the existing basis of information in the future. What ways of development it will be in a future.

The second - to determine future goals and targets, and only gradually move them to the present.

In the first case - the search socio economic forecasting. In the second - the regulatory target

For what we use predictions

- Forecast gives initial information for developing of plans and programs. Relying on forecasts, firm can more effectively use the folding favorable for it possibilities, and in the case of the probability of the appearance of unfavorable circumstances have a time for developing the measures for averting of negative consequences or, vice versa on the transformation of these unfavorable circumstances into the advantageous for itself possibilities.
- Thus, the favorable forecast of market behavior opens prospect for the development of the possibilities of firm, increase in the volume of activity, output by the new markets, etc

The objects can be divided by the level of informative provision

- Objects, provided by the informative base (quantitative), the quantitative information is enough for retrospectives.
- Objects with not full provision, so this makes difficulties for reaching more clear prognostication.
- Objects, provided by only qualitative information of retrospective periods, the quantitative information is absent or is limited.
- Objects without any retrospective information, as a rule it concerns projecting or planning objects.

The organization of forecasting researches

- The tasks of prediction we can divide into two groups:
- The prediction of factors' behaviour in external environment;
- The prediction of the firm's indicators with getting the information.

COST OF FORECAST

$$TC = \frac{D_1 + S_1}{I} + S_2 + D_2 + R$$

- TC - total cost of the forecast
- Of D1- the cost of composition, writing, or modification of program ([computer], the expenditure of time). Quantity and the qualification of specialists, time spent on computer work..
- D2- expenditures for development and introduction of the program
- Of S1- of expenditure for the guarantee of protection of program
- S2 - expenditure for introduction and data reduction and their the processing
- by the I - number of possible uses of this program for this object or for other objects
- R - the cost of the forecast of this program for use in one time
- of the I - the number of different uses for the forecast.

Firm calculates the relationship of expenditures for the use of any program with the profit or the savings, which can be achieved as a result prognostication.

Organizations, made their own forecasting

- **International organizations: UN, FAO, UNCTAD, UNICEF, OECD and others;**
- **The organizations of state's economic groups: MWF, UN European Commission and other;**
- **- National government departments of prognostication;**
- **- Science-research corporations (REND Corporation in the USA and others);**
- **- Research and analysis centers of corporations, banks, insurer companies;**
- **- International private and government societies (Rome Club, different commissions).**

Type of forecasting methods

- The methods of normative prediction were in many respects connected with the development of the systems analysis methodology of complex problems.
- Point forecasts - these are the forecasts, which fix only one situation of the object of forecast on the scale of the possible situations for this object in the future.
- Interval predictions - forecasts, which with the specific probability establish a certain interval of possible situations of object in the scale of possibilities.

Type of forecasting

- **Internal forecast** - forecast, based on the internal factors. For example, for conducting of the advertising company of this goods and data about sales of goods of firm in the past.
- **General (multipurpose) forecast** - forecast, which covers simultaneously the solution of forecasting problems by several directions, by several economic indices, to the branches of the economy, to a number of the countries of region, peace, etc
- **Specialized forecast** - forecast, intended only for predicting the specific index (a particular indicator), for example, the forecast of demand for the specific goods (for a particular product).

Type of forecasting

- **External forecast** - forecast, with development of which as the basis of the determination of the forecast estimation, which characterizes the development of a certain object, are assumed the factors, external with respect to this object. For example, the forecast of sale goods of prolonged use is based on the inspection of the presence of these goods in population.

Type of forecasting

- In terms of forecasting the forecasts can be divided into global and national macroeconomic forecasts, industry forecasts, in-house and private micro-economic Forecasts.
- Global Macroeconomic Forecast - forecast, designed for the whole world economy or a particular region.
- National macroeconomic forecast - forecast developed for the national economy.
- Internal company forecast - the forecast performance of individual firms.
  In content, the object of forecasts are divided into several groups:
- a) Science and technology (the development of science as a system of knowledge, science as an organization, development of specific techniques, the critical situation in the scientific and technological development);

Type of forecasting

- b) biomedical forecasts;
- c) Socio-economic forecasts, sociological, demographic, social, legal, social and economic impact projections.)
- d) Economic forecasts (the dynamics of the economy and individual industries, structural change and inter-industry linkages, employment, income and consumption, investment, government spending, regional economic forecasts, financial and value aspects, external trade);
- f) Military-Political Prediction;
- e) environmental natural determinant projections.

depth forecasting

- A short-term prediction is created for 1-1.5years
- A medium short prediction is created for a period from 2 till 5 years
- A long-term prediction – for a period more than 5 years and till 15-20 years

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Subject 4.
Trends in world fuel trade

Total primary energy supply

Supply (commodity's mass ready for selling) = current production + seller's stocks

TPES (total primary energy supply) = indigenous production + imports - exports - international marine bunkers ± stock changes

the environment

- Growth in world population and economic prosperity leading to sustained energy demand.
- Energy consumers showing resilience to oil prices, even in developing countries.
- Increasing concerns about security of supply driving market behaviour.
- States and NOCs playing an important role in access to resources.
- Increased consciousness and scientific evidence on climate change – matter of time before industry and policy makers respond.
- Unconventional energy gaining importance on the basis of security of supply agenda.
- Industry reputation adversely impacted by high prices and profits and concerns about reinvestment levels.

Economic factors

- Technology progress in prospecting and extraction
- Phase of business cycle
- State regulation (direct or indirect)
- Inflation processes
- Monopoly regulation (production, price and marketing policy)
- Transportation conditions

global demand issues

- Global demand for major projects in E&P in 2006 by the top 20 players to be approx $140bn

- Global demand is likely to remain strong for the next 5 – 10 years

- New developments are pushing the technical boundaries

- Every operator is looking at ways to try and secure the suppliers' "A teams"

- NOC's are exerting more influence in the marketplace and growing their share of service companies business

1973 and 2007 fuel shares of TPES*

*Excludes electricity trade.
**Other includes geothermal, solar, wind, heat, etc.

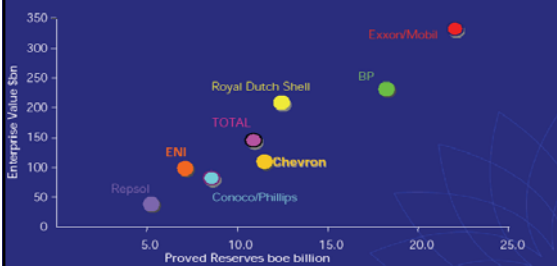| Energy Overview	
Proven Oil Reserves (January 1, 2011)	44 million barrels
Oil Production (2009)	132,656 barrels per day, of which 5,329 barrels per day were crude oil.
Oil Consumption (2009)	4.4 million barrels per day
Crude Oil Distillation Capacity (2010E)	4.6 million barrels per day
Proven Natural Gas Reserves (January 1, 2011)	738 billion cubic feet
Natural Gas Production (2009)	181 billion cubic feet
Natural Gas Consumption (2009)	3,536 billion cubic feet
Recoverable Coal Reserves (2009E)	380 million short tons
Coal Production (2009)	None
Coal Consumption (2009)	182 million short tons
Electricity Installed Capacity (2008)	281 gigawatts
Electricity Generation (2009)	982 billion kilowatt hours
Electricity Consumption (2008)	964 billion kilowatt hours
Total Energy Consumption (2008)	22.3 quadrillion Btus*, of which Oil (45%), Coal (22%), Natural Gas (18%), Nuclear (11%), Hydroelectricity (3%), Other Renewables (1%)
Total Per Capita Energy Consumption (2008)	175 million Btus
Energy Intensity (2008)	5,579 Btu per $2005-PPP**

Main factors affecting oil supply

- Supply volumes of OPEC countries
- Oil policy of other big exporting oil countries (Mexico, Russia, Norway, etc)
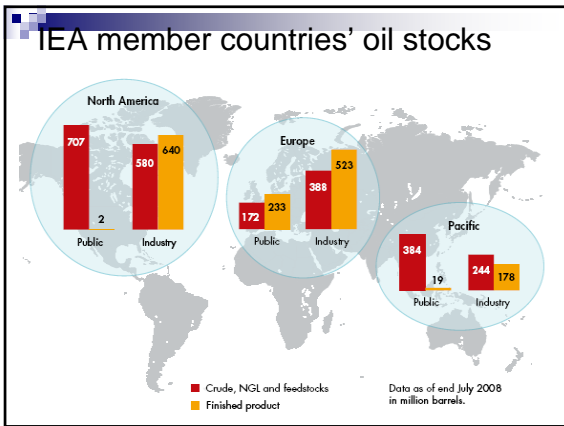- Strategic petroleum reserves in USA

The world's largest companies

Market Cap ($bn)		Company
371	1	Exxon Mobil
362	2	General Electric
281	3	Microsoft
238	4	Citigroup
233	5	BP
211	6	Bank of America
211	7	Royal Dutch/Shell
196	8	Wal-Mart Stores
196	9	Toyota
196	10	Gazprom
196	11	HSBC
190	12	Proctor & Gamble
189	13	Pfizer
183	14	Johnson & Johnson
175	15	Saudi Basic Industries

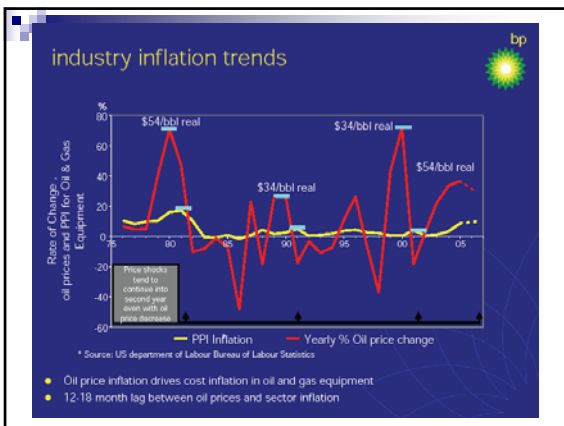Source: Financial Times 31 March 2006

Sector structural change since 1997

Information supplied by Database and company annual results

IEA member countries' oil stocks

industry inflation trends

BP E&P strategy – building profit centers

Gas market features

- High cost and long time of realization of export projects
- Natural gas is difficult to transport over long distances
- Export demands huge investments in construction or modernization gas-mains (gas-pipes), distribution networks etc.
- Now risks for pipeline investments crossing multiple frontiers are growing

1973 and 2007 regional shares of natural gas production
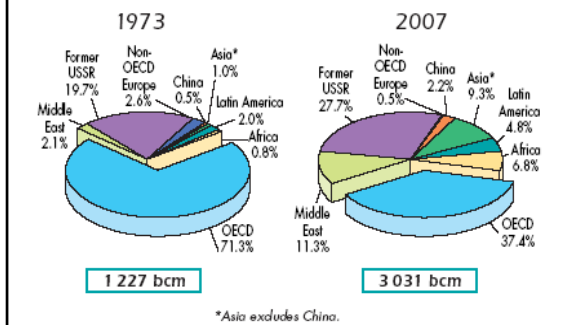
Producers of natural gas, 2010

Producers	mcm	% of world total
World	3 031 401	100.0
Russia	650 993	21.5
United States	546 140	18.0
Canada	183 395	6.0
Islamic Rep. of Iran	106 693	3.5
Norway	90 839	3.0
Algeria	89 970	3.0
Netherlands	76 334	2.5
United Kingdom	76 004	2.5
Indonesia	69 691	2.3
People's Rep. of China	67 746	2.2

Demand factors on fuel markets

Demand

- Consumer stock
- Current requirements
  - Level and structure of consumption
    - Economic conditions
- Strategic reserves replenishment
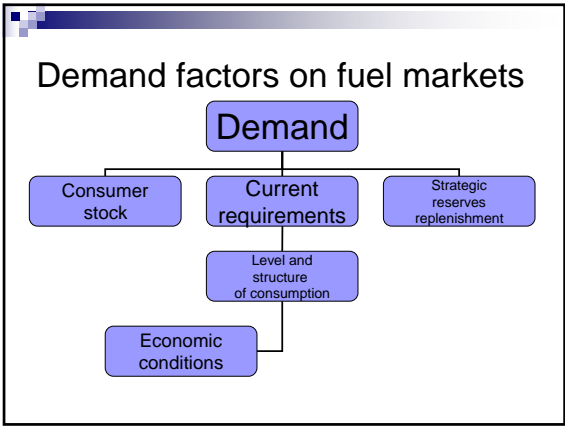
Economic conditions

- Technology progress in consuming industries
- Phase of business cycle
- State regulation (taxes, subsidies, foreign trade policy)
- Company's financial solvency (capital market, profit level, inflation, depreciation policy)
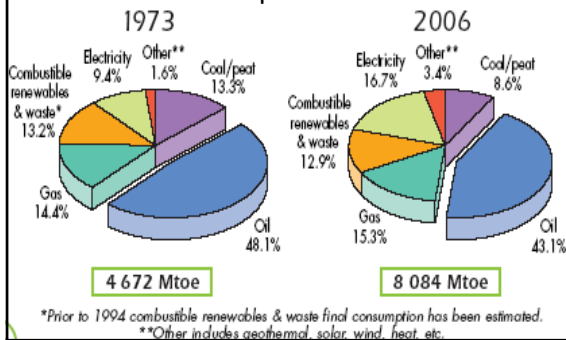
Main factors affecting oil demand

- Dynamics of world economy
- Rise in demand in new consuming centers (especially China)
- Commercial reserves in OECD countries
- Climate in oil consuming countries
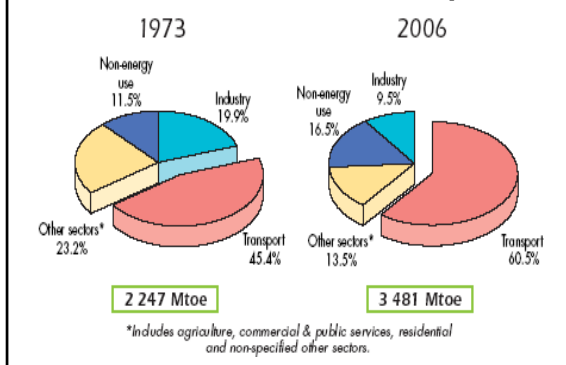- Natural gas consumption and prices

Consumption

Primary consumption – in the form of primary refining, enrichment and processing to give fuel consumer properties

Final consumption of the most fuels – in the processed form: petroleum and petroleum chemical products

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1973 and 2006 fuel shares of total final consumption

1973

Combustible renewables & waste* 13.2%
Electricity 9.4%
Other** 1.6%
Coal/peat 13.3%
Gas 14.4%
Oil 48.1%

4 672 Mtoe

2006

Combustible renewables & waste 12.9%
Electricity 16.7%
Other** 3.4%
Coal/peat 8.6%
Gas 15.3%
Oil 43.1%

8 084 Mtoe

*Prior to 1994 combustible renewables & waste final consumption has been estimated.
**Other includes geothermal, solar, wind, heat, etc.

Shares of world oil consumption

1973

Non-energy use 11.5%
Industry 19.9%
Other sectors* 23.2%
Transport 45.4%

2 247 Mtoe

2006

Non-energy use 16.5%
Industry 9.5%
Other sectors* 13.5%
Transport 60.5%

3 481 Mtoe

*Includes agriculture, commercial & public services, residential and non-specified other sectors.

Producers	Mt	% of world total
World	**3 816**	**100.0**
United States	840	22.0
People's Rep. of China	298	7.8
Russia	217	5.7
Japan	196	5.1
India	146	3.8
Korea	122	3.2
Germany	121	3.2
Canada	101	2.6
Italy	99	2.6
Saudi Arabia	99	2.6

SHARES OF REFINERY PRODUCTION BY PRODUCT
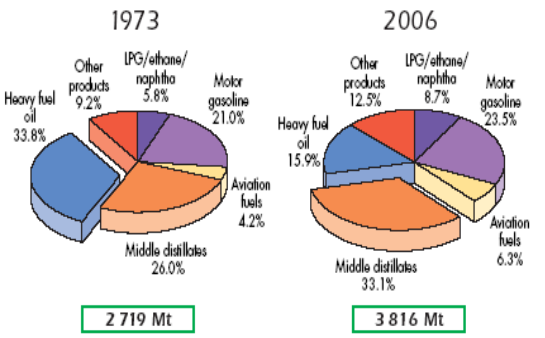
Trends in international trade in fuels

- Overall decrease of fuels' share in international trade
- Fossil fuels take the leading place in raw materials trade
- Diversification of trade structure
- High rate of consuming countries' reliance on imports of fossil fuels
- High export supplies' concentration ratio in rather small range of developing countries
- Trade depends on TNC investment activities

Exporters and importers of crude oil, 2006

Exporters	Mt	Importers	Mt
World	**2 203**	**World**	**2 285**
Saudi Arabia	358	United States	587
Russia	248	Japan	203
Islamic Rep. of Iran	130	People's Rep. of China	145
Nigeria	119	Korea	120
Norway	109	India	111
UAE	106	**Germany**	110
Mexico	99	Italy	94
Canada	93	France	82
Venezuela	89	Spain	61
Kuwait	88	United Kingdom	59

Main oil trade patterns

- regular contracts – up to 1 year
- single deals
- barter agreements
- agreements for oil-processing in importing countries with following realization of oil products
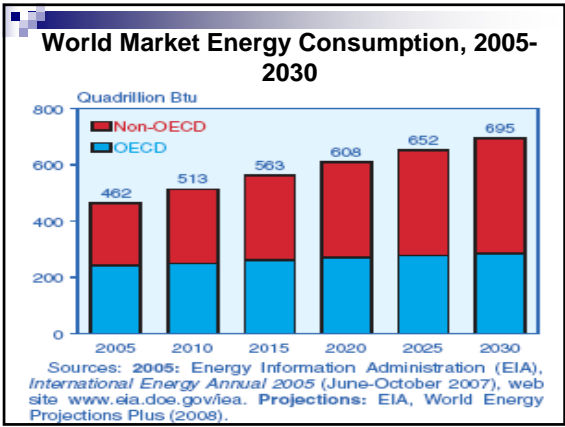- stock-exchange deals

Exporters and importers of petroleum products

Exporters, 2010	Mt	Importers, 2010	Mt
World	**998**	**World**	**925**
Russia	88	United States	110
Netherlands	83	Netherlands	72
United States	65	Singapore	57
Singapore	62	Japan	47
Saudi Arabia	58	China	44
Korea	38	France	38
Venezuela	35	**Germany**	37
Kuwait	34	Spain	28
India	32	United Kingdom	27
United Kingdom	29	Korea	21

Exporters and importers of natural gas, 2007			
Exporters	Mcm	Importers	Mcm
World	**900 188**	**World**	**899 083**
Russia	191 892	United States	130 300
Canada	106 988	Japan	95 627
Norway	85 136	**Germany**	88 355
Algeria	62 676	Italy	73 950
Netherlands	55 666	Ukraine	50 087
Turkmenistan	51 064	France	42 902
Qatar	38 329	Turkey	35 832
Indonesia	33 554	Spain	34 474
Malaysia	32 039	Korea	33 385
United States	22 905	United Kingdom	30 837

Subject 5.
Forecast of fuel market development

Main future trends

- Energy use grows more slowly to 2030 than projected before
- Dominance of fossil fuels – oil, gas and coal
- A rising share of emerging economies in global energy consumption
- An increase in the consuming countries' reliance on imports of oil and gas
- An inexorable rise in global carbon gas emissions

World Market Energy Consumption, 2005-2030

Quadrillion Btu

- Non-OECD
- OECD

Year	Total
2005	462
2010	513
2015	563
2020	608
2025	652
2030	695

Sources: **2005:** Energy Information Administration (EIA), *International Energy Annual 2005* (June-October 2007), web site www.eia.doe.gov/iea. **Projections:** EIA, World Energy Projections Plus (2008).

World Oil Prices, 1980-2030

Nominal Dollars per Barrel

History | Projections

High Price Case

Reference Case

1980   1995   2007   2015   2030

Thank you for your attention