Commodities

6th November 2008

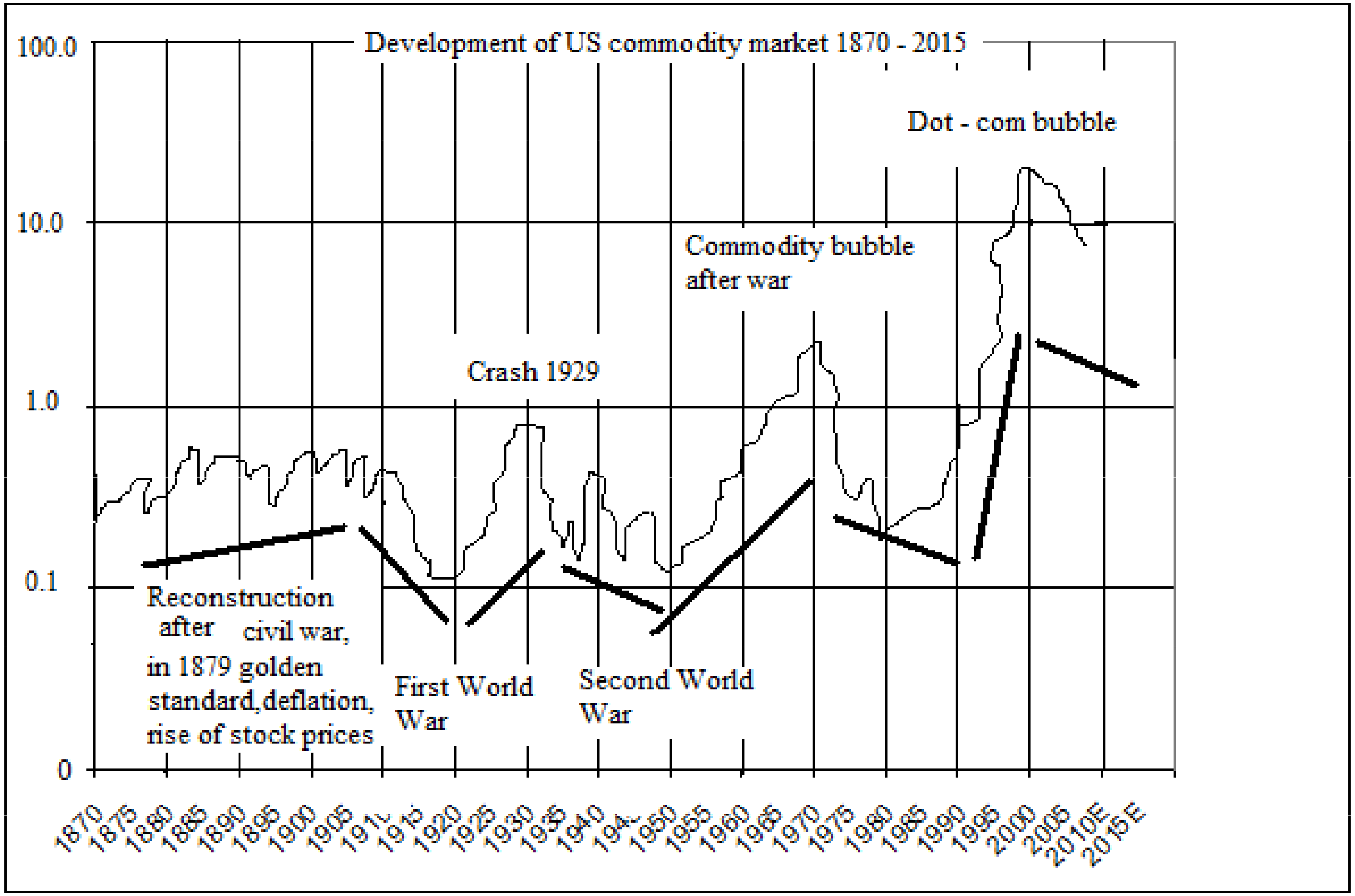
Commodities

- Generally we can say that every financial or capital market trend was established by massive investment in particular branch than was after period of significant growth of revenues replaced by investors dodge to other investing occasion and establishing of another investment trend.
- Similar situation is also in commodities. After declining of investment in commodities in the 1990's and focusing investors on dot-com companies it led to creation of dot-com bubble.
- After bursting of this bubble at the beginning of the 2000's there was establishing the commodity trend that is going on that time. In the modern history of investing there is significant bull market in commodities every 20 – 30 years

Commodities

- In 20th century there were three long-term growing commodity market trends:
  - 1906-1923
  - 1933-1953
  - 1986-1892
- Average duration of commodity trend is 17 years.

Commodities



Commodities

- Commodity trend was often caused by imbalance between supply and demand and led to periodically repeated rise and decline in commodity prices.
- Why are commodities moving in these long cycles? The answer can be very easy.
  - During period of bear market in commodities there is limited investment in industries related with commodities this situation leads to undercapitalization in these industries and when the situation changed it is impossible to adapt in new conditions in short time period.
  - For several years there is imbalance between supply and demand. The element that caused changing between demand and supply is coming for a lot of branches and in has not necessary only economic origin.

As the example can be used price of oil in the 1990's.

- In the 1998 the world was defeated by Asia crisis and there was very fast decline in oil demand.
- It subsequently led to declining in financing in refineries or oil companies.
- The begging of the 2000 showed how this behavior was shortsighted.
  - In 2003 there was several week long strike in Venezuela. Usually nobody cares about strike in some Latin America country if Venezuela was not importer supplier of oil for USA. This situation showed how current world is depended on one commodity. The gap in oil production caused decline in world supply of this commodity and then exploding in its price.

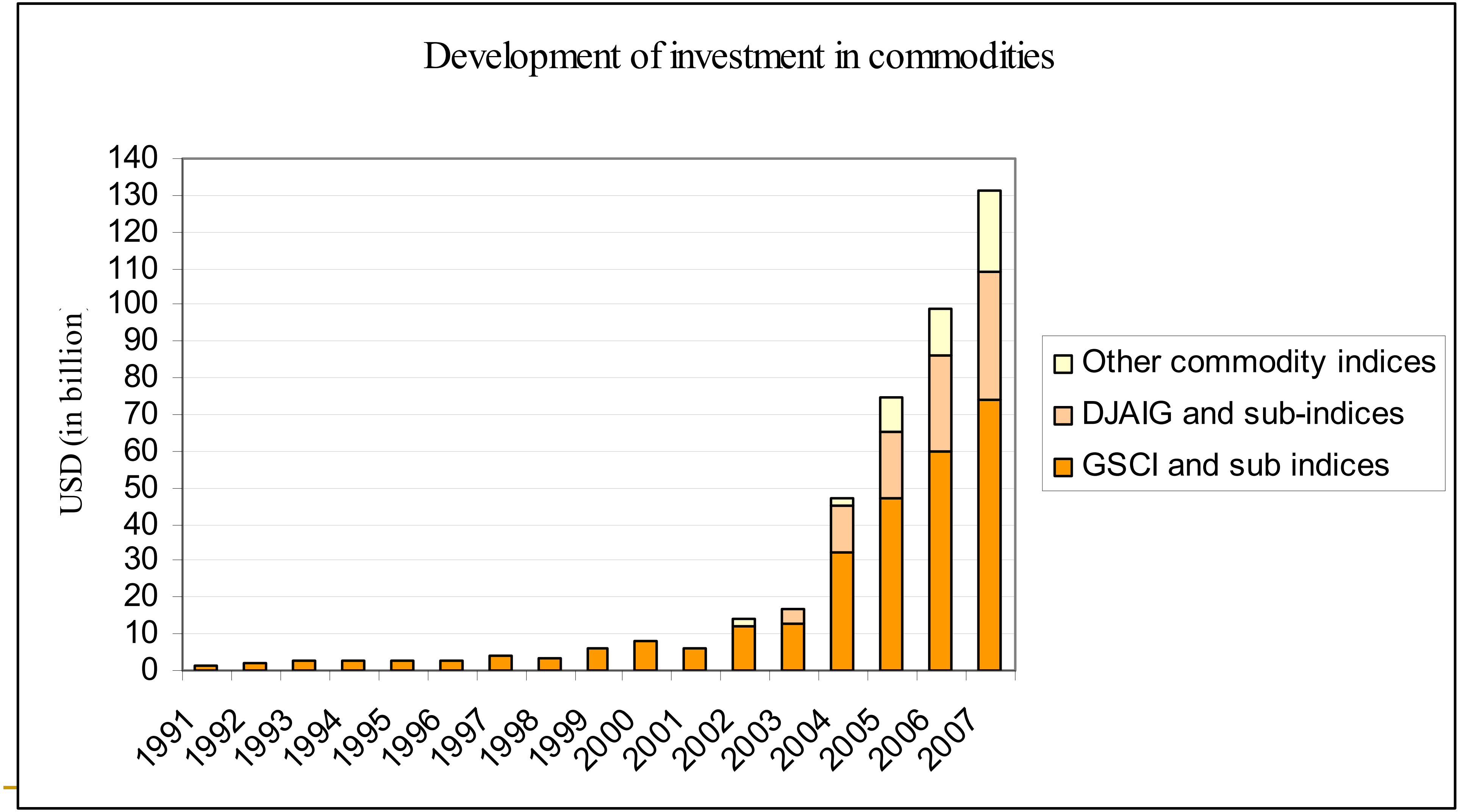
Commodities

- But that day bull market in commodities is a bit different that all before them. Historical booms were caused by limited supply but our current boom is powered by huge demand especially from emerging market countries e.g. China.
- Now we can say that bull market in commodity began and probably will be also continued. What are the main reasons for this suggestion.
  - The 1990's was period of declining commodities market. The commodities were very cheaper to compare with consumer price index or price of stocks or bonds. This long term declining commodity market caused fast reduction of capacity and thus imbalance between demand and supply. Now demand is rising but the supply is extremely low and it takes several years that they will be aligned. If Asia economy will continue in grows the world demand about commodity will grow as well. Especially China transform from main exporter to main importer because of its consumptions of iron ore, copper, oil, soya etc.
  - According to historical data the price of commodities are negatively depend on price of stocks, bonds or other financial assets. If stocks reach they top the commodities are in they bottom and vice versa. It means that only with some commodity investment you get the correct portfolio diversification.
  - Commodities as a property assets have no credit risk.
  - Commodities can rise although the economy has opposite trend.

Commodities

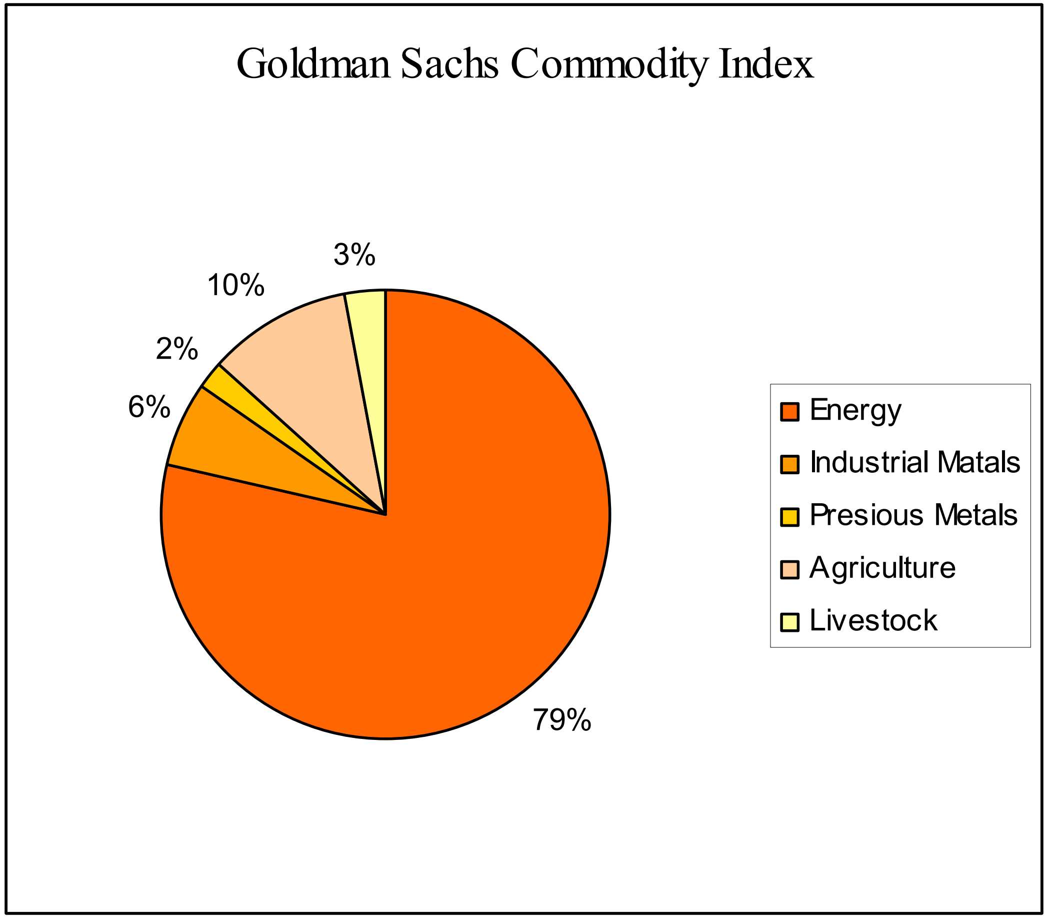
- If we describe commodity tendencies or trends we usually use some index. It means that no commodity market can be described without this term. Indices have also information function and are possible to deduct some supreme tendencies or future development in particular market segment.

Commodities



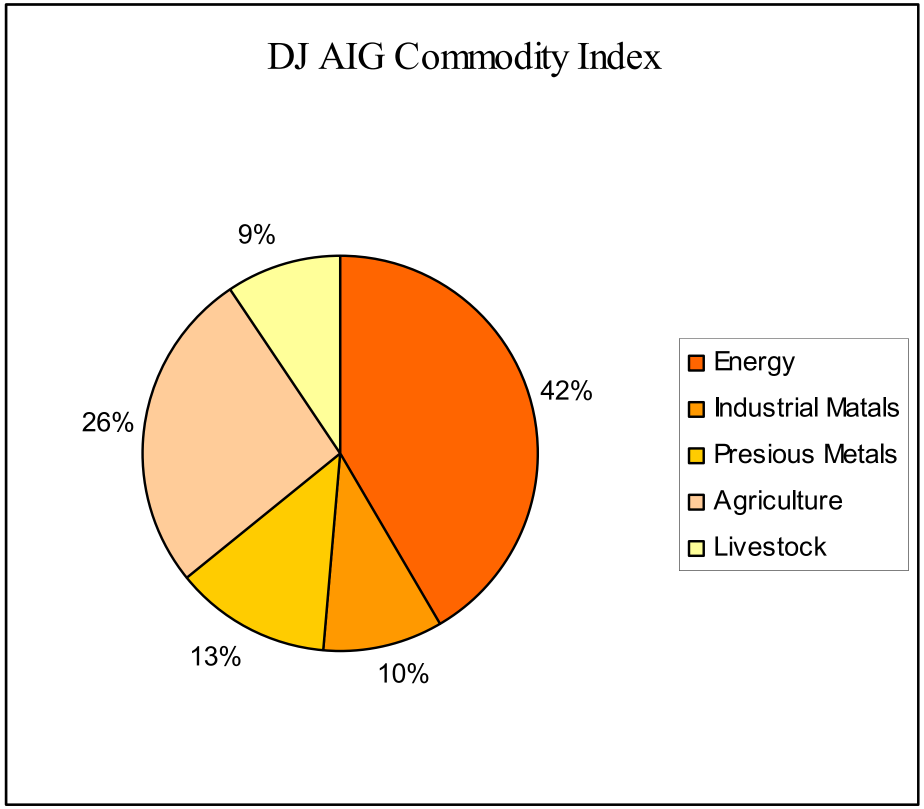
GSCI Excess Return Index

- **GSCI Excess Return Index**
- Goldman Sachs Commodity Index represents development of 24 the most important commodities
- There are several kinds of oil and gas, agricultural products and metals.
- The weight of particular commodity depends on 5 years average of world production.
- It is also reason why oil or gas has more then 70 percentage of the index value.



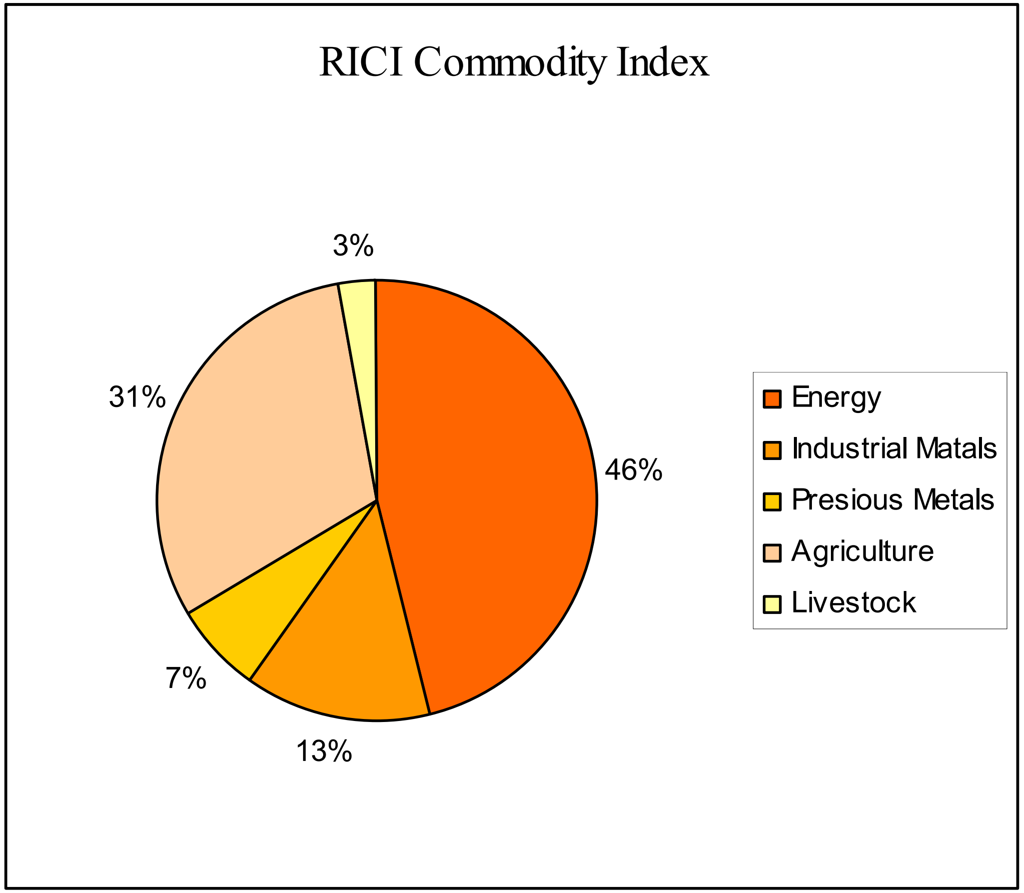
Dow Jones AIG Commodity Index

- **Dow Jones AIG Commodity Index**
- This rollover index consists of 19 physical commodities trade on U.S. Exchange with the exception of aluminum, nickel, zinc which is traded on the London Metal Exchange.
- To assume of diversification no group of commodities may constitute more than 15 percentages or less than 2 percentages in the index.
- The weight of commodities is depended on the importance in the world economy.
- This is influenced by actual production as well as volume of trade.



RICI Rogers International Commodity Index

- **RICI Rogers International Commodity Index**
- This index was constructed to be able to reflect costs of everyday live. In this index there are included agriculture production, oil and energy.



Commodities

- Because commodities are not possible electronically deliver in contrast to stocks, bonds etc. but only physically they are traded in the form of future contract.
- Futures contracts have defined day of maturity but commodity index is time unlimited and continue in its development. It is necessary to rollover future contract permanently.
- Goldman Sachs Investment company rollover by following way – at the end of every month there are changed all futures contracts that are before their maturity and bought new contracts with longer time of duration.
- During this procedure new future contract do not cost as the old one. Usually there are quoted upon (contango) or under (backwardation) level.
- In contango trap situation means that the money from future contracts do not cover costs to purchase same number of new contracts.

Current volume of the main commodities

- Petroleum
  - There has not been discovered any significant oilfield for 35 years.
  - The most important oilfields called “giants” or “elephants” are 50 – 70 years old.
    - Oil peak in U.S. – at the beginning of the 1970’s (including large oil filed in Alaska – North Slope)
    - Oil peak in German Ocean in 1999
    - Oil peak in Saudi Arabia – the largest oilfield in the world, in several years but it is possible that this filed is also behind its peak.

Current volume of the main commodities

- All petroleum that is in oil fields is related with
  - Rising costs for prospection of new fields
  - Delivery petroleum in the market
- The U.S. does not build new refinery since 1976
- Number of U.S. petroleum refineries declined about 50 % since 1982 (from 321 to 149)
- At the end of 1981 in the U.S. were 4.530 drill platform that were looking for oil and gas, in 2004 there were 1.201.

Current volume of the main commodities

- In reality there is no confidence how much petroleum is in particulate countries. Petroleum countries have never agreed with independent audit of petroleum reserves.
- Organization of Petroleum Exporting Countries (OPEC) grants quotas about how much oil can be produce according to
  - size of oil reserves and
  - it eggs OECD members to overestimate this oil reserves.
- Members of OECD are following:
  - Algiers, Angola, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, Venezuela.

Current volume of the main commodities

- Gas
  - The production of gas in the North America is not able to fill a demand about gas.
  - Although there is a lot of gas there are problems with extraction of them.
  - Current gas fields are serving for several years and there is extracted all low-lying gas.
  - Although new fields were founded there is a same problem as with petroleum fields. Gas is more deeply and it is difficult and expensive to extract it.
  - In Canada or Alaska there is not still built necessary pipe lines to ensure quick transport gas in the market.
  - Local limitation in some areas that are related with environmental protection that allow produce of gas only at most 3,5 months per year.

Current volume of the main commodities

- Metals
  - New underground mine has not been opened for 20 years.
- Sugar
  - Sugar becomes energy row material because can be worked in ethanol.
  - More than 60 % of world production of ethanol comes from sugar.
  - Ethanol is used by means of transport with special engines or can be added in gasoline called gasohol.
  - Brazil – the largest world producer of sugar uses a half of its sugar production for drive of cars.

Entrance in commodities

- If you want to know answer in question how will develop price of particular row material. The starting point is a analysis of supply and demand.
- Supply
  - Main factors that must be examined
    - What is a world production
      - How many tunes of row material is in pocket or deposit
      - Are pockets of row material in areas that can be suffered by natural disaster or civil disorders
      - How rich in row material is particular packet.
      - What are current reserve of particular row materials.
      - How many is mines with particular row materials.
      - What is the productivity of these mines.
      - What will be a potential demand in next 10 years.

Entrance in commodities

- What are resources of new supply?
  - Expansion of current resources?
  - When it happened?
  - How much will it cost?
  - How much row materials will be mined after expansion?
  - When supplementary supply gets on the market?
- Is there new potential supply?
  - What is size this new supply?
  - How expensive is to built new mines and start mining.
  - How long this new resource will not available?
  - How new supply gets on the market?

Entrance in commodities

- According answers in these questions we get idea about how many row material will be on the market in next 10 years.
- In this analysis there are not taken into account unexpected events like fires, strikes, natural disasters, etc.

Entrance in commodities

- Analysis of demand
  - It is necessary to find out how many particular row material will be needed in next 10 years.
    - What is the main purpose of particular commodity.
    - Which from current usage of commodity will be up-to-date in the future.
    - What are substitutes of current commodity if commodity price will rise up
    - Which new technological findings, that were not known before, can use this commodity?

Possibilities how take advantage of rising demand about commodities

- I. Purchase securities of companies producing commodity or offer services for commodity producer.
  - Or mutual funds that invested in commodity companies.
  - Problems:
    - Spirit and psychology in stock market.
      - In the 1970's the price of petroleum was rise up but some of the petroleum stocks stagnated, It is evident that company conditions can be good, price of commodity produced by company are rising up but stocks of this company stagnate. The reason is that stock market is often ruled by emotions. Investor are ruled by fear or uncertainty and do not analyze disproportion between supply and demand.
      - In 2002 and 2003 was predicted low price of petroleum by financial analysis. They prediction was base on wrong presumption that after every significant movement is expected return in price to historical average (very often works in stock price). But they do not overlooked facts:
        - Demand in North America and Asia was higher than supply
        - Unrest in Venezuela
        - War in Iraq
        - Terrorist anxiety in Saudi Arabia
      - Price of petroleum was in its maximum but stocks of petroleum companies stagnated.

Possibilities how take advantage of rising demand about commodities

- Government conditions
  - Government sets terms and condition in the area of environmental protection, waged, export and import rules, atc.
    - Generally, these rules have an negative impact in some companies but almost ever positive impact in price of commodity.
    - e.g. U.S. limited petroleum extraction in Alaska it will have negative impact in stocks of companies that doing business in Alaska but the price of petroleum rise up because of reduction of petroleum supply.

Possibilities how take advantage of rising demand about commodities

- Unexpected events
  - In 2004 high price of steel and rising demand about steel. The company U.S. Steel gets better economic results than 1 year ago but stocks of this company were lower than stocks of their competitors.
  - One of the reason was companies branches in Slovakia and Serbia that announced decline in income about 38 percentages.
  - The reason of this situation in Slovakia was its entrance in European Union and Slovakia was not able to comply tax holiday that promises American company years before.
  - If price of steel rise up investors expected rise up of steel companies stocks but they have no idea about situation in Slovakia.

Possibilities how take advantage of rising demand about commodities

- II. Investing in country that mines commodity
  - Canada and Australia are the main countries where are commodities mined. Currency exchange rates are higher in countries that export than in countries that import commodities.
  - In the 1970’s 1 Canadian dollar – 1,06 USD
  - In the decline of commodity market its price decline: 1 Canadian dollar – 0,6 USD.
  - But also there is a problem it is not sufficient to find commodity rich country but there is important role of outside factors.
    - Cooper
      - Since 2002 China is the largest world consumer of copper (lapped the U.S.)
      - Chile is the world largest producer of copper.
      - Decline in economic development in China impacts in economic situation in Chile.

Possibilities how take advantage of rising demand about commodities

- III. Purchase commodity
  - The simplest way how to invest in commodities is to purchase commodities.
  - Easy rule: if in the world is much of commodity its price is declining, if in the world is lack of commodity its price is rising.
  - There is several possibilities how buy commodities:
    - Individual account: investor open account in **future commission merchant** that accept investor money, manage them, confirm investors trading and observe if investor has minimal sum of money in the account.
      - Or through introduction brokers that collected receive and offers instructions for futures contracts. Introduction brokers do not manage investor’s money or trades but offer trading services.

Possibilities how take advantage of rising demand about commodities

- Managed account
  - Personal account managed by account manager. Purchases and sells in managed account are based on manager decisions.
- Commodity trader advisor
  - Individual or company that advice in trading with securities, e.g. with position take (long, short), when close position, etc.
- Trading with futures options
  - Trading in commodities by futures options.
  - Chicago Mercantile Exchange examined exercitation of options in years 1997-1999 and founded out that 75 % of all futures contracts were at worthless in maturity. In this situation earns seller of option that gets option premium.

Possibilities how take advantage of rising demand about commodities

- Commodity pool
  - It is a company with limited liability where are centralized financial resources of investors interested in commodity investment.
  - This fund of money is traded in commodity markets and profit is shared by commodity pool participants according to initial deposit.
  - In this form of investment is very important who is pool manager. He compounds funds and hire traders.
- Mutual fund
  - These funds are in commodity investment uncommon and very often they do not invest only in commodities.
    - Commodity Real Return Strategy Funds – using derivative tools its underlying is DJ AIG Commodity Index

Possibilities how take advantage of rising demand about commodities

- Index investment
  - Investment in index funds is in 2/3 more successful than investment in managed funds.
  - The value of investment is fluctuate according to fluctuation of the commodity basket.

Short history about petroleum

- On the 6th October 1973 Syrian and Egyptian air-fighter attracted in Israeli position in Suez Canal and Sinai peninsula.
- Several days after attract Israel sent message that are at the point of damage.
- American president Nixon sent delivery of weapon by air and Israel was able to guard Sinai.
- 10 days after attract OPEC decided to use petroleum weapon, OPEC limited extraction of petroleum and laid on an embargo in import in the U.S.
- The price of petrol rose up about 40 %
- The price of petroleum rose from 2 to 11.65 USD per barrel.
- A lot of American was shocked because they have no idea that petroleum is imported in US and especially from Arabic countries.
- The impact of this limitation was significant in Europe or Japan as well.

Short history about petroleum

- But this OPEC limitation was not the main factor of this massive growth in petroleum price.
- At the beginning of the 1970’s the petroleum supply started to fall behind demand. American oilfields started fall down there was no technological capacity how to get petroleum from deeper sources and demand about petroleum was still rising up.

Short history about petroleum

- To limited inflation rate Nixon imposed limitation in petroleum price. It had two effects:
  - It discouraged investor to investing in petroleum extraction or looking for new petroleum sources
  - It courage Americans to higher petroleum consumption.
- The embargo that was apply in December was abandon in Martz because OPEC wanted also profit from this massive petroleum price growth.

Short history about petroleum

- In 2006 the price of petroleum was 70 USD per barrel.
- Nowadays is price of petroleum about 60 – 70 USD per barrel.
- In fact the production of petroleum is declining for years.
- In the last 35 years was founded only one giant oilfield in Caspian sea in 1999.
- In 2006 was founded significant oilfield in Mexican gulf with reserve 3-15 billion barrels. But in the world is consumed about 85 million barrels per day. It means that it is reserve for 7 months.

In 2007

supply 85,5 million barrels per day

demand 84,5 million barrels per day

Short history about petroleum

- OPEC
  - There is concentrated about half of all world petroleum reserves.
  - Nowadays delivered about a third of world supply.
  - Saudi Arabia – only member of OPEC informs about petroleum reserves, according own statements:
    - Produces 8 – 9 million barrels per day
    - During 48 hours are able to growth production of petroleum about 2 million barrels and extraction this number of barrels for 2 years.
    - Till 2015 new oilfield with production 2-3 million barrel per day till 2050.
    - Till now Saudi Arabia extracted 89 billion barrels (Saudi Arabia announced in 1988 that has reserves of 260 billion barrels).

Short history about petroleum

- Situation in Saudi Arabia:
  - The extraction of petroleum is concentrated in 5 royal oilfields that were discovered in 1940-1965 and 1951-2000. There is 90 % of all Saudi petroleum. This filed are before its oil peak, last petroleum is get thanks to water that was pumped in oil-well. Easy access to petroleum will be finished.
  - Ghawar – the largest Saudi oilfield is extracted from 90 %.
  - The last estimation about Saudi petroleum reserves are from the 1975.
  - Extraction in new Saudi oil fields will be expensive – because of sands, lower pressure, etc.

Short history about petroleum

- Russia
  - In Russia there is concentrated about 6 % of all world petroleum resources.
  - Russia provide about 10 % of world consumptions.
  - According to estimation it is possible that Russia has reserves about 60 billion barrels of petroleum and gas sources it energic responds to 280 billion barrels of petroleum.
  - In 2007 Russia extracted more petroleum than Saudi Arabia.

Short history about petroleum

- Caspian Sea (Azerbaijan)
  - Two important petroleum fields.
    - Tengiz (1979)
    - Kashagan (1999)
  - In Kashagan there is about 40 billion barrels petroleum but only 6-9 is possible to extract.
  - There is a problem with technology and building of oil well.
  - In Kashagan will not start extraction till 2010 and to costs of first wave of project will be about 20 billion dollars.

Thank you for your attention