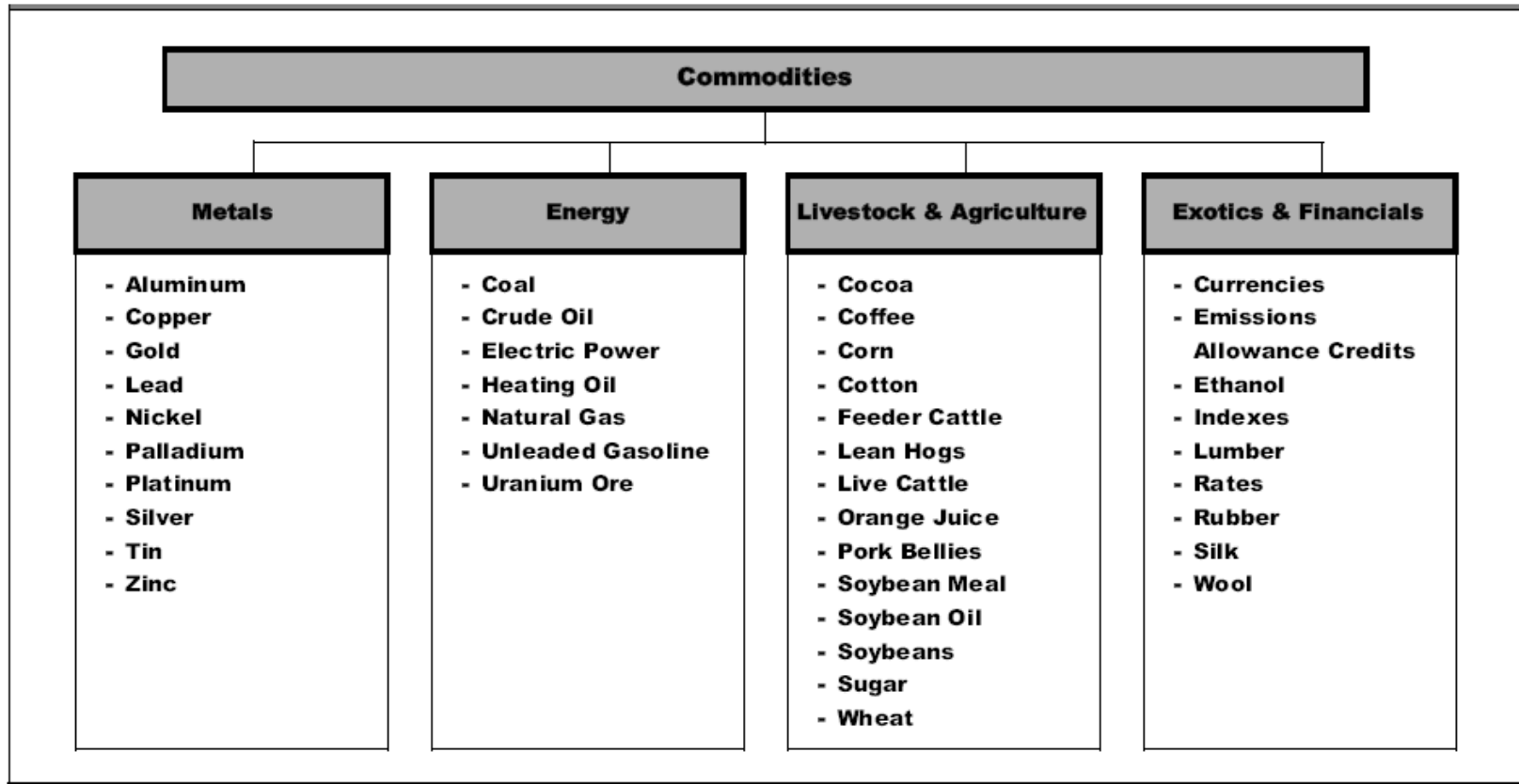

Commodities

The 10 Defining Characteristics

- Commodities are raw materials, hard assets, and tangible products
 - As a general rule, all commodities are defined by three characteristics
 - Standardization
 - One can take a unit of a commodity and replace it with another unit of the same commodity
 - Tradability
 - The existence of a robust market place consisting of many buyers and sellers
 - And the unique futures market
 - Deliverability
 - Physical exchange of a commodity between the sellers and buyers
-

Commodity classes



Commodities classes

- Commodities are classified in one of six commodities classes
 - Metals
 - Energy fuels
 - Agriculturals
 - Livestock
 - Exotics
 - Financials
-

Precious and industrial metals

- Not all metals are the same, nor do they have the same or similar applications
 - Precious metals are defined primarily by their high resistance of corrosion and oxidation in contrast to industrial metals with their low resistance
 - Furthermore, most industrial metals are found in much larger quantities than are precious metals
 - Thus, the demand and price for precious metals are much higher than those for industrial metals
 - Precious metals
 - Gold, silver, platinum
 - Industrial metals
 - Aluminium, copper, lead, nickel, palladium, tin, zinc
-

Energy fuels

- Today most sources for energy are derived from fossil fuels
 - Coal
 - Crude oil
 - Electric power
 - Heating oil
 - Natural gas
 - Unleaded gasoline
 - Uranium ore
-

Agriculturals

- This commodity sector is divided into two groups
 - Grains and oilseeds
 - Commodities more essential for human live
 - Corn, soybeans, soybean oil, soybean meal, wheat
 - Soft
 - Discretionary-use agricultural commodities
 - Commodities that are not essential for human life but improve it
 - Cocoa, coffee, cotton, orange juice, sugar
-

Livestock

- Also referred as meats is composed of four major commodities
 - Two related to cattle and two related to hogs
 - The demand for livestock commodities is highly correlated with economic prosperity
 - When country prosper, the standard of living for their people increase and this typically means more demand for meat products
-

Exotics and Financials

- The exotic commodities the commodities that do not have the same demand as other commodities
 - Also, most of the exotic commodities do not trade on many of the top global exchanges
 - Ethanol, lumber, rubber, wool
 - Financial commodities are an intangible commodities and only the commodities that can not be deliver physically to purchaser
 - Emission allowance credits, currencies, indexes, rates
-

Commodities Throughout history

- History reveals that the most devastating battles have been fought over crude oil, gold, uranium, and other precious metals resources
 - In 1524 Francisco Pizarro explored South America and discover vast amount of gold It led to wipe out the whole Inca civilization that stood between them and gold
 - A few century later this continuous quest for commodities also resulted in South Africa Boer Wars at the end of the 19th century which pitted the British army forced local fighters in the battle over South Africa's precious metals and minerals
 - The 20th century can be called the hydrocarbon age
 - The Persian Gulf War of 1991, which at its essence was an effort to stabilize global oil market after the Iraqi invasion in oil-rich Kuwait
-

Commodities

- A commodity trend is often caused by imbalance between supply and demand and lead to periodically repetitious 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 led to undercapitalization in these industries and if 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 have an 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, oil companies and other related industries.
 - The beginning of the 2000 showed how this behavior was shortsighted.
 - In 2003 there was several weeks long strike in Venezuela. Venezuela was importer supplier of oil for the 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.
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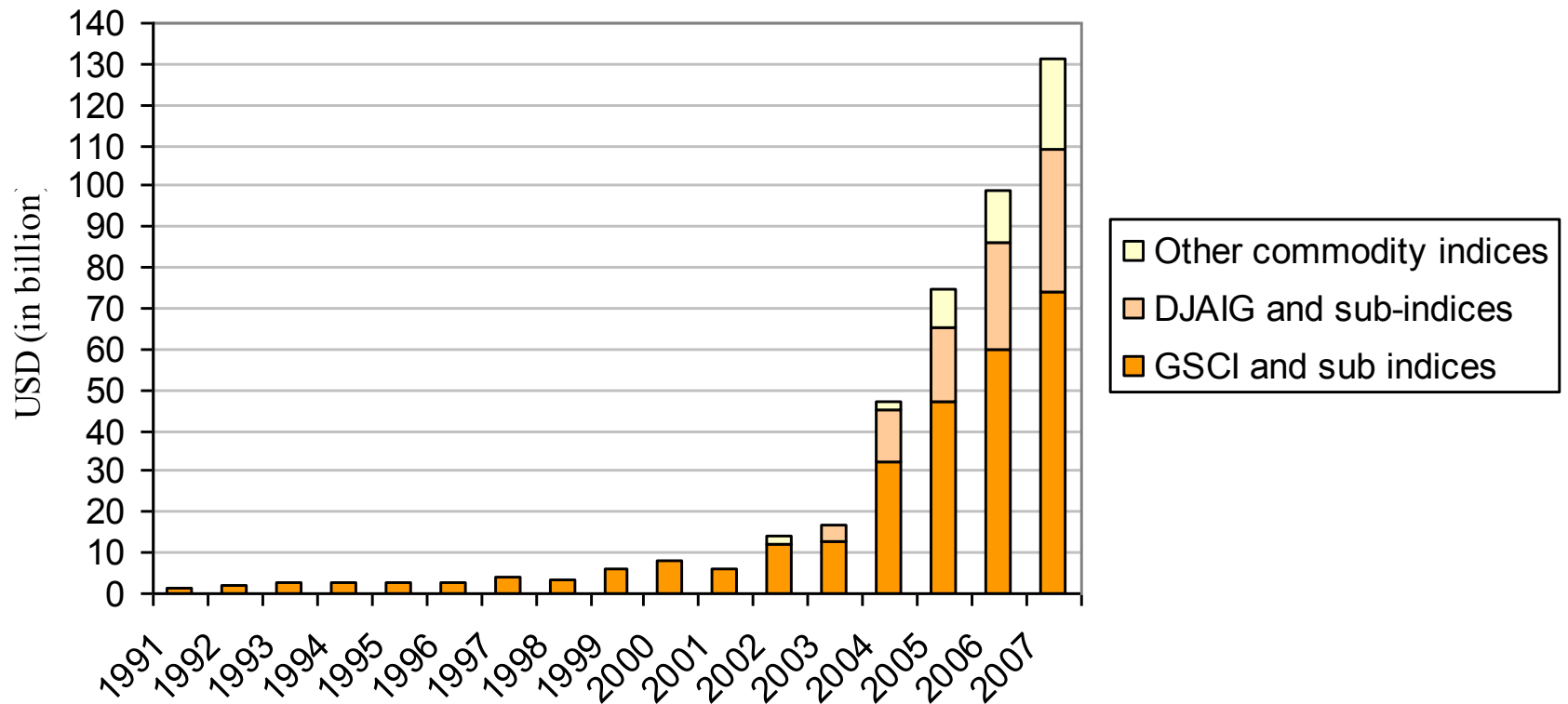
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- The 1990's was period of declining commodities market.
 - The commodities were very cheaper to compare with consumer price index or price of stocks or bonds.
 - This long term declining commodity market caused strong reduction of financial capacity in a commodity sectors and thus imbalance between demand and supply. Then if the demand is rising, the supply is extremely low and it will take several years that they will be aligned.
 - If Asia economy will continue in growth 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.
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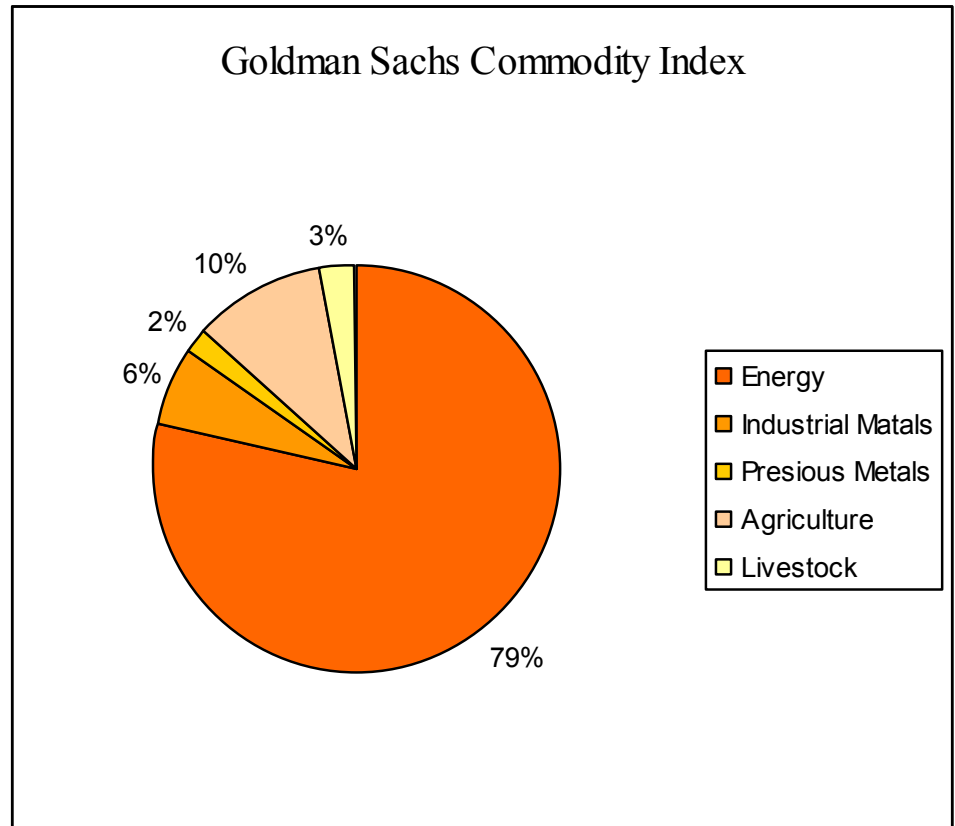
Commodities

Development of investment in commodities



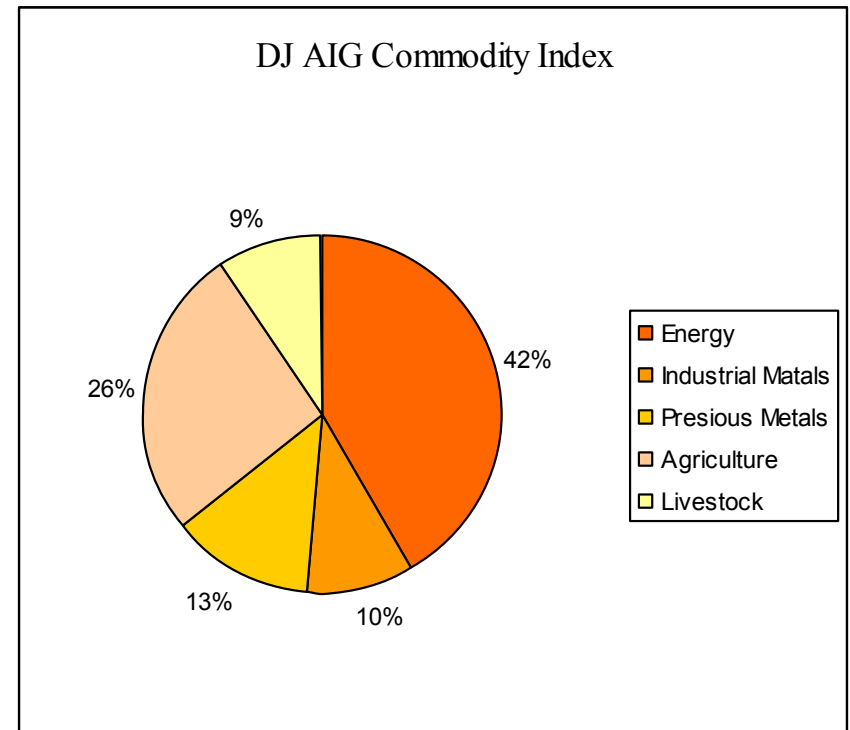
GSCI Excess Return Index

- **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.



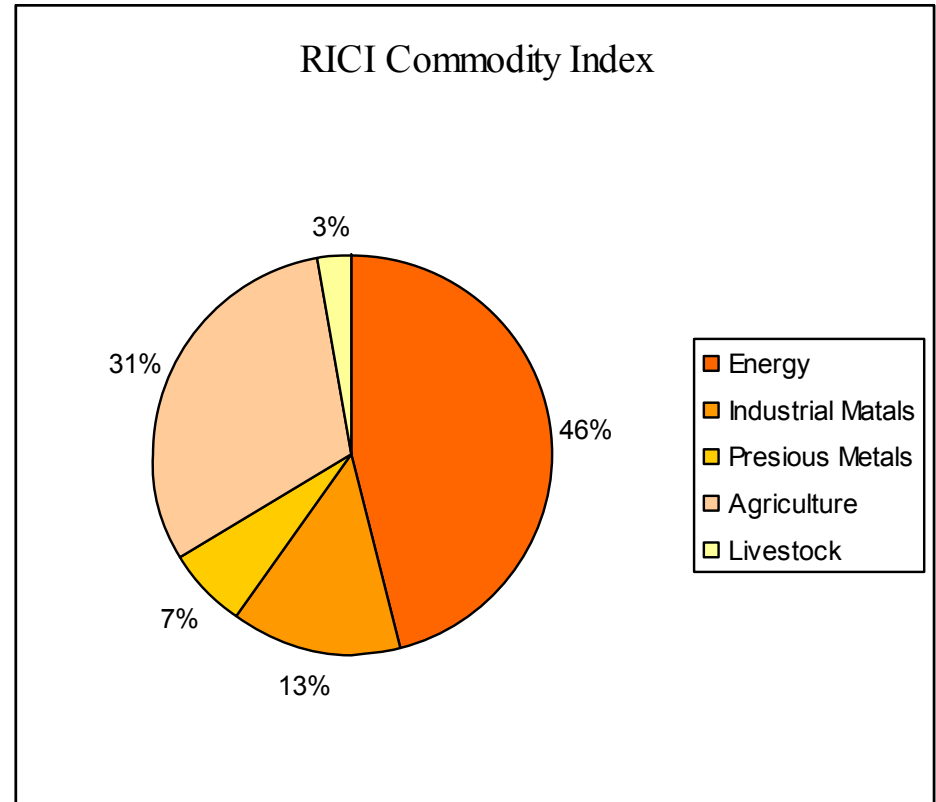
Dow Jones AIG Commodity Index

- **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 life. 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 a 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 last future contracts do not cover costs to purchase new contracts.

Current volume of the main commodities

■ Oil

- 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 field in Alaska – North Slope)
 - Oil peak in German Ocean (North Sea) in 1999
 - Oil peak in Saudi Arabia – the largest oilfield in the world, it is expected in several years but it is possible that this field is also behind its peak.
-

Current volume of the main commodities

- All oil that is still in oil fields is related with
 - Rising costs for prospection of new fields
 - Rising costs for delivery oil in the market
 - The U.S. does not build new refinery since 1976
 - Number of U.S. oil 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 only 1.201.
-

Current volume of the main commodities

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

Kinds of oil

- Oil Brent
 - 15 kinds of oil produces from the German Ocean
 - In Brent oil price is trading with oil from Europe, Africa, the Middle East that is used for consumption in west countries
 - West Texas Intermediate
 - Trading price of North-American oil
 - Dubai
 - Price of the Middle East Oil traded in Asia-pacific area
 - OPEC basket
 - Arab Light – Saudi Arabia
 - Bonny Light – Nigeria
 - Fateh – Arabia Emirates
 - Isthmus – Mexico – nonmember of OPEC
 - Minas – Indonesia
 - Saharan Blend - Algeria
 - Tia Juana Light - Venezuela
-

Price of oil

- Price of oil is represented by
 - WTI/Light Crude Oil traded in NYMEX – NY Commodity Exchange and
 - Brent Oil – traded in International Petroleum Exchange in London
 - The most of oil is traded by direct transaction between subjects not in commodity exchanges but
 - Price of directly traded oil is derivated from price of oil in stock exchange
 - 65 % of all direct prices is determined by Brent Oil price
-

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 producing for several years and there is extracted all low-lying gas.
 - Although new fields were founded there is a same problem as with oil fields. Gas is more deeper 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.
-

Possibilities how take advantage of rising demand about commodities

- **I. Purchase securities of companies producing commodity or offering services for a commodity producer.**
 - Or securities **mutual funds that invested in commodity companies.**
 - Problems:
 - Spirit and psychology in stock market.
 - In the 1970's the price of oil was rise up but some of the oil 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 controlled by fear or uncertainty and do not analyze disproportion between supply and demand.
 - In 2002 and 2003 was predicted low price of oil 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 oil was in its maximum but stocks of oil 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, etc.
 - Generally, these rules have an negative impact in some companies but almost ever positive impact in price of commodity.
 - e.g. U.S. limited oil extraction in Alaska it will have negative impact in stocks of companies that doing business in Alaska but the price of oil rise up because of reduction of oil 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.
-

Possibilities how take advantage of rising demand about commodities

■ II. Investing in a country that mines a 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 the 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 there is much of commodity its price is declining, if in the world there is lack of commodity its price is rising.
 - There is several possibilities how buy commodities:
 - Individual account: investor open account in **future commission trader** that accept investor money, manage them, confirm investors trading and observe if investor has minimal sum of money in the account.
 - Or through a brokers that collected receive and offer instructions for futures contracts. The 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 commodity market 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/sha managed all money in the fund.

■ 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.
-

Political aspects investing in commodities

Short history about oil

- On the 6th October 1973 Syrian and Egyptian air-fighter attacked Israeli position in Suez Canal and Sinai peninsula.
 - Several days after attack 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 attack OPEC decided to use oil weapon, OPEC limited extraction of oil and laid on an embargo in import in the U.S.
 - The price of oil rose from 2 to 11.65 USD per barrel.
 - A lot of American was shocked because they have no idea that oil 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 oil

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

Short history about oil

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

Short history about oil

- In 2006 the price of oil was 70 USD per barrel.
- Nowadays is price of oil about 40 – 50 USD per barrel.
- In fact the production of oil 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 oil

■ OPEC

- There is concentrated about half of all world oil reserves.
 - Nowadays delivered about a third of world supply.
 - Saudi Arabia – only member of OPEC informs about oil reserves, according own statements:
 - Produces 8 – 9 million barrels per day
 - During 48 hours are able to growth production of oil 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 oil

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

Short history about oil

■ Russia

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

Short history about oil

- Caspian Sea (Azerbaijan)
 - Two important oil fields.
 - Tengiz (1979)
 - Kashagan (1999)
 - In Kashagan there is about 40 billion barrels oil 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
