



Development of prices of oil in financial markets in the past ten years

Aneta Zöldová

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Masaryk University

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Introduction

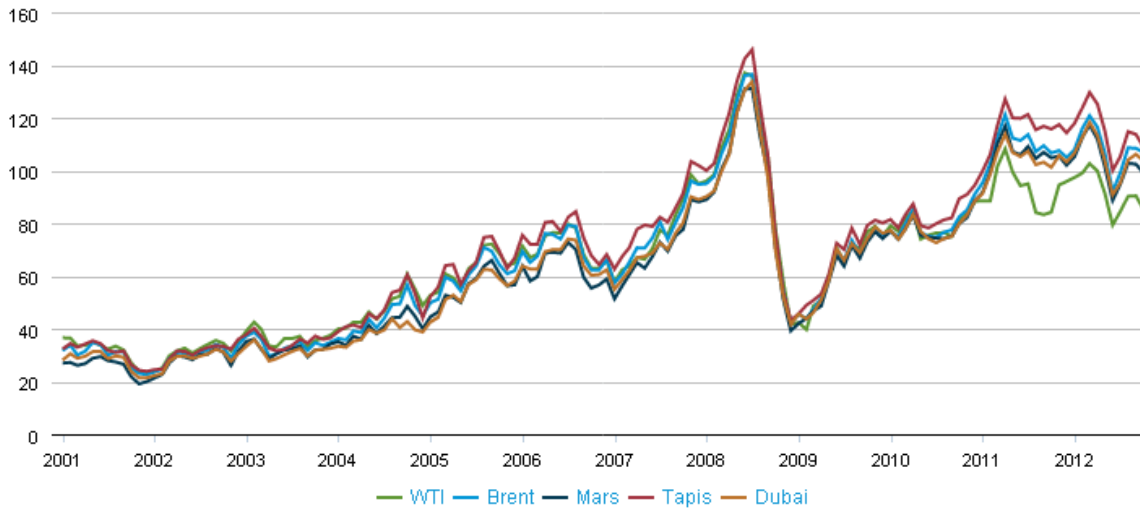
Crude oil (also called petroleum) is one of the most traded commodities in the financial market. In past ten years the prices of oil have been quite volatile and fluctuated significantly. This was mainly due to the rising global demand and political instability in some fundamental oil producing countries. Prices of crude oil are significant because they affect the production of key materials and products like fuel, pharmaceuticals, pesticides or plastics, which are then traded regionally and by that influence operations of businesses and social welfare. There are different types of petroleum depending on where it is traded, like WTI on New York Mercantile Exchange (NYMEX) or Brent on Intercontinental Exchange (ICE). The Energy Information Administration (EIA) uses information about all types of oil imported into the United States like acquisition price and weighted average cost to calculate the “world oil price”. But the oil prices still tend to move together due to arbitrage (see figure 1).

Figure 1

World oil prices move together due to arbitrage

World crude oil prices

dollars per barrel (real 2010 dollars, monthly average)



Sources: Bloomberg, Thomson Reuters. Published by: U.S. Energy Information Administration.
Updated: Monthly | Last Updated: 9/28/2012

Many types of crude oil are produced around the world. Variations in quality and location result in price differentials, but because oil markets are integrated globally, prices tend to move together.

Prices of crude oil react to laws supply and demand just like other commodities, even though it may sometimes be a little irregular due to other factors that influence it, such as OPEC supply, geopolitical events or governmental regulations. In other words, even though there might be an oversupply of crude oil, it does not necessarily lead to a decrease in price. Before 1970s prices of oil were regulated by Texas Railroad Commission (TRC) by production or price controls. TRC set a low price average and tried to keep the prices of petroleum as low as they could even though there were strong after-war pressures pushing the price up (blue line on figure 2). It was later replaced by OPEC, which supported prices that were higher than historical norms. OPEC (Organization of Petroleum Exporting Countries) was founded in 1960 in order to control price of crude oil by limitation of production. The founding representatives were Iran, Iraq, Kuwait, Saudi Arabia and Venezuela, and later were joined by other six countries (Qatar, Libya, Indonesia, United Arab Emirates, Algeria and Nigeria). There are also non-OPEC oil producing countries which cover mainly North America, regions of former Soviet Union and the North Sea region. In

contrast to OPEC, these countries make their independent decisions about petroleum production and usually produce the near full capacity as price takers.

Figure 2

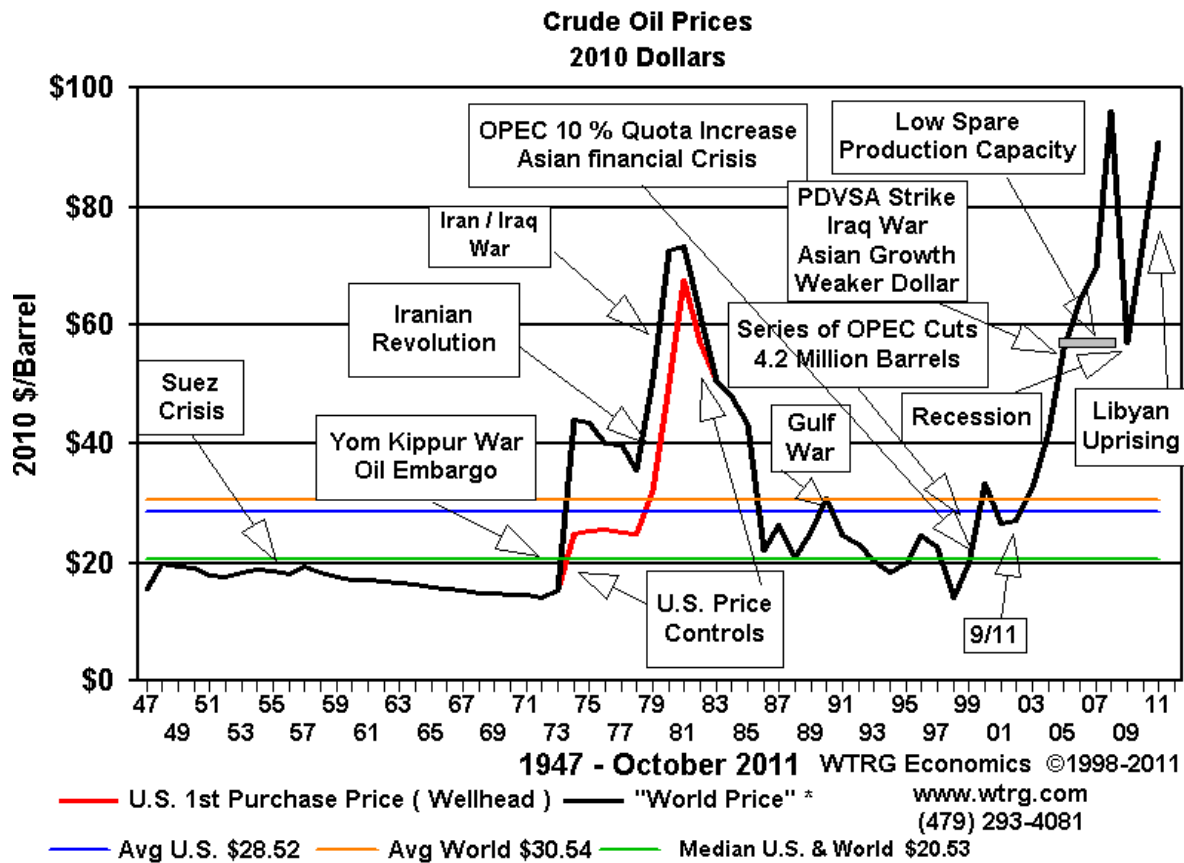
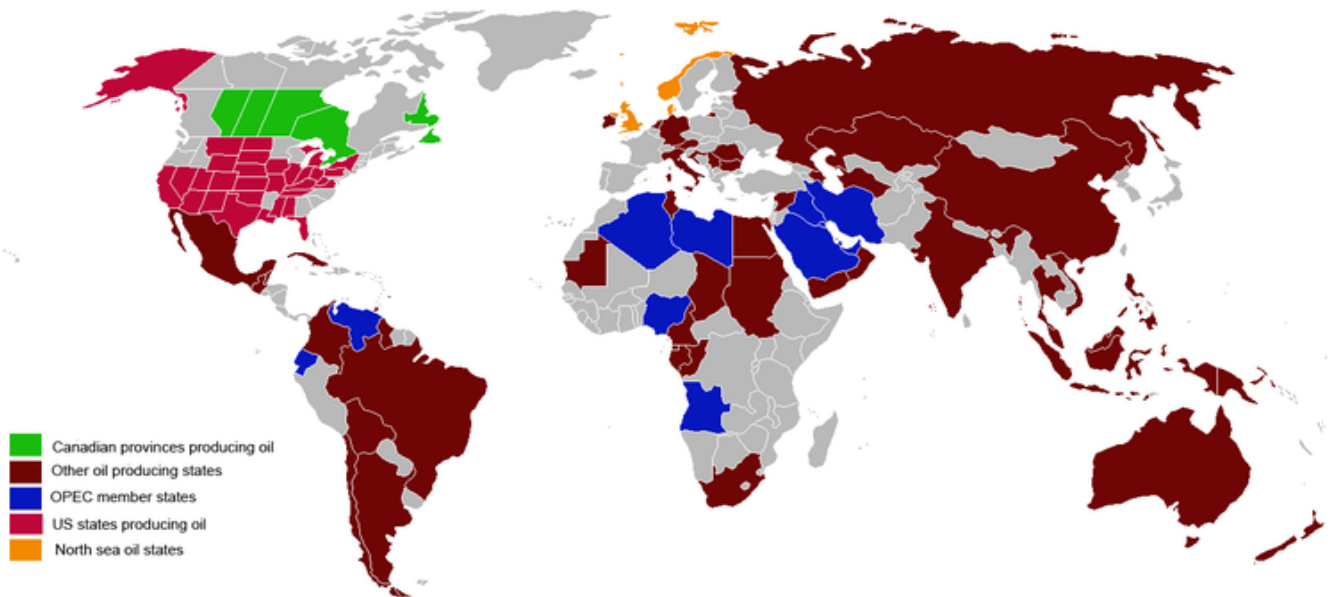


Figure 3 Oil Producing Countries



Factors affecting prices of oil

There are several factors influencing the price of oil in the market. Firstly, there are political threats. This is the biggest influence on the petroleum market, because 98 percent of reserves are in hands of governments. In case of political conflict, a country may decide not to export oil, which is a problem, especially if the country is a large producer. The conflicts might even lead to a war between the countries or internal conflict of civil war inside the country. These situations lead to the threat of oil shortage, which escalates the price high as for example in the case of Iraq war or Libyan civil war. Most of the oil reserves are located in regions that have been historically known as problematic and were at one point in time in the center of upheavals. Investors in the financial market always have to evaluate the possibility of supply disruption and the ability of other suppliers to take their place. Threat of shortage can be also created by natural disaster, which can stop oil production by destroying oil rigs or complicate the transportation of oil. The example of this issue can be the 2005 hurricanes or it can be also represented by severe winters and power outages that delay supply of oil. But this type of difficulty is quite short term and can be solved quite quickly.

Second factor is the insufficient investment into refineries. United States are an example of this problem, they did not invest regularly into refineries and their improvement and now they do not have the same production as countries with new refineries. Third factor is directly linked to the previous one. Developing economies and emerging markets like Asia and South America demand more and more oil for their growing economies (see figure 4). But with less production and higher demand there is an increasing threat of shortage. Most of the countries believe that Saudi Arabia (the largest exporter of oil in the world) will help them as the supplier of last resort, but as reports show, they might not have as much reserves as they once claimed (see figure 5). Their biggest oil field is depleted and the oil coming out contaminated with salt water. With more new oil rigs, the production of oil remains the same. It is supporting the speculations that Saudi Arabia is slowly running out of oil. Also the royal family of Saudi Arabia had to increase spending to keep their citizens away from uprisings. In order to keep the level of spending, they have to sell their oil at least at the price of \$75 per barrel, and with their influence over the price of petroleum they will want to keep the prices high.

Figure 4

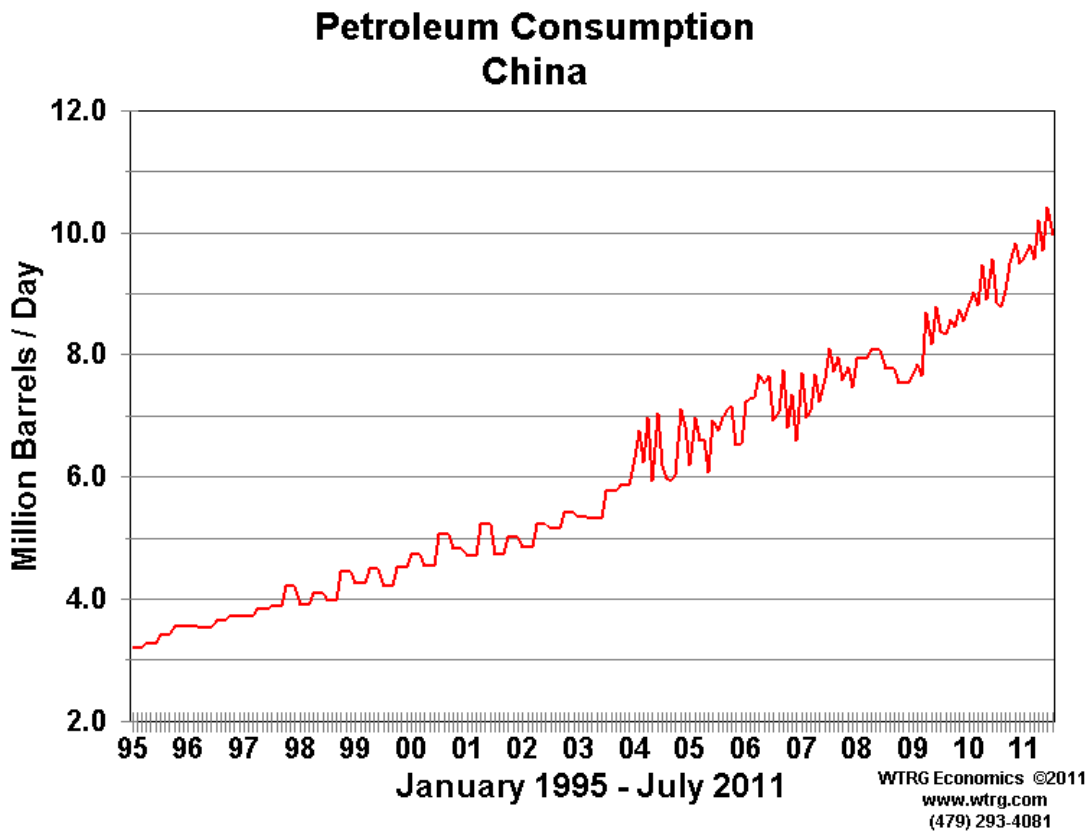
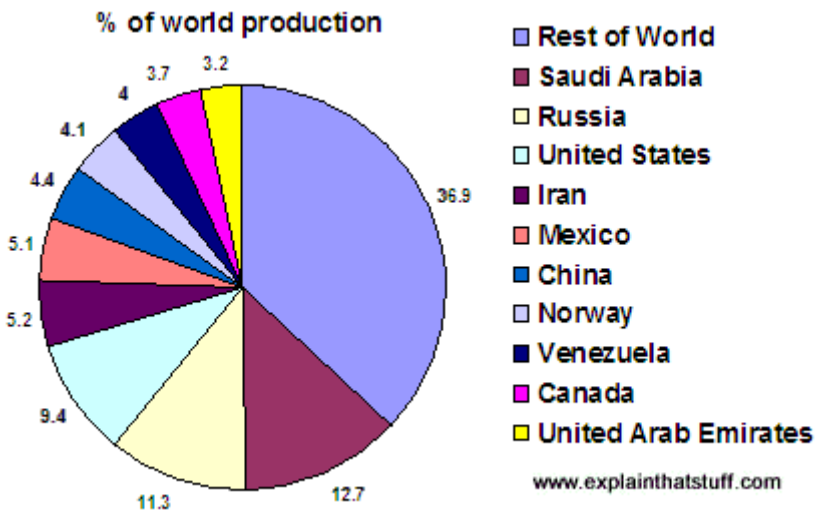


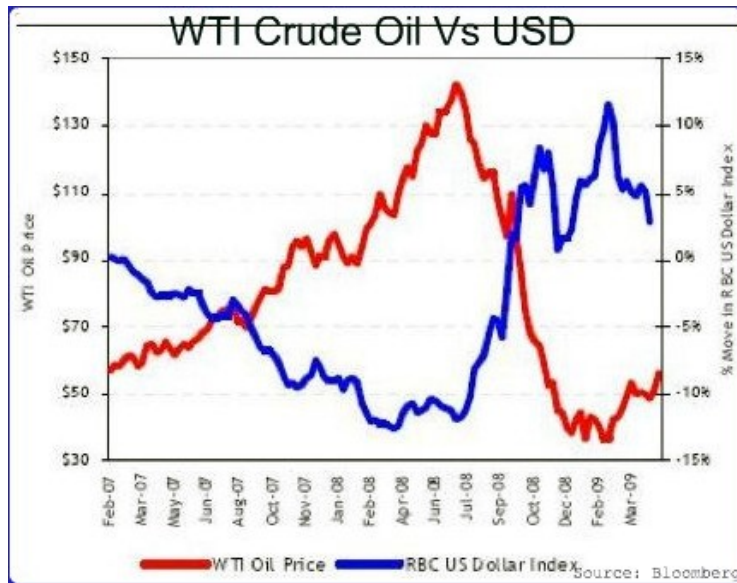
Figure 5



Another factor influencing prices of oil is OPEC and its internal pressures. OPEC has an active role in influencing prices of oil and does it by adjusting production quotas for its members. OPEC countries produce about 40 percent of world's petroleum and that represents about 60 percent of the oil traded internationally. Also their spare capacity is the indicator of how they want to influence the market and its tightness. Different OPEC members have different approaches to price setting. Countries with smaller oil reserves want to push the prices as high as they can in a short time to make as much money they can on their limited resources. Prices of petroleum are also affected by globalization and changes in trends. Due to globalization and free trade, goods travel further which leads to higher fuel consumption. There is also a trend of plastic replacing steel in the market and of course plastic is produced from petroleum.

Strength of the U.S. dollar is one of the most important factors, because oil is priced and traded in this currency (also called petrodollars). Fluctuations in the price of dollar influence to some extent the price of oil (they move together if everything else is being held equal) and they are inversely correlated (see figure 6). In 2011 and 2012 one of the main influences over price of oil was the possible collapse of euro. The recession has already had a great impact on petroleum, but with slowing global economy probably the demand will be generated mostly by emerging markets and will drive the price of oil down.

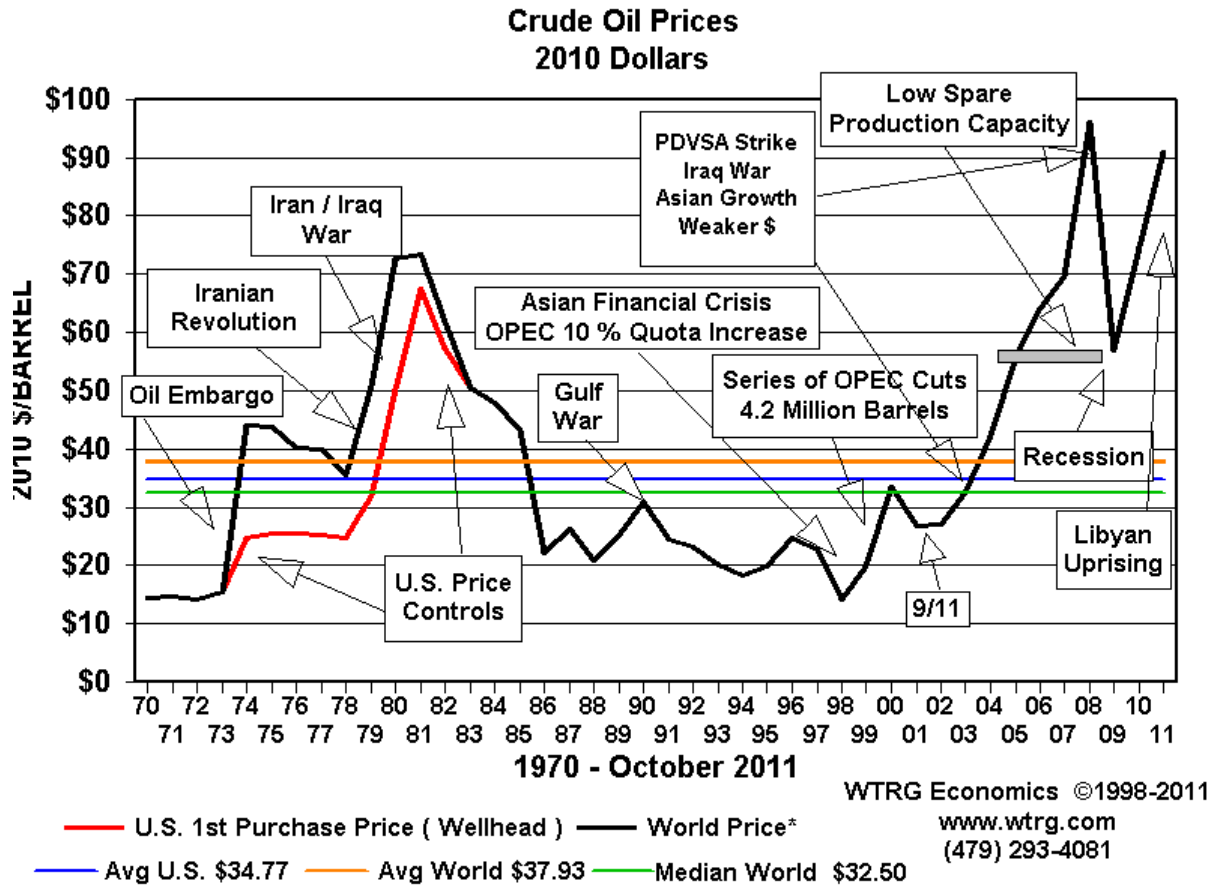
Figure 6



History of oil prices 1970 – 2002

The first major increase in prices of crude oil was in 1973 during the Yom Kippur War. At this time, the significant impact that supply shortages have on prices of petroleum was evident, because in six months prices increased by 400 percent (from \$3 to \$12). It started with the attack of Syria and Egypt on Israel, and every country that supported Israel was set under oil embargo by Arabic oil producers. Due to this event some of the controlling rights over production went back to the United States from OPEC. Second major increase in prices occurred in late 70s because of the conflict between Iran and Iraq. The Iranian revolution and subsequent invasion by Iraq lead to highest post-WWII prices (from \$14 to \$35). After that prices returned back to normal, and later after the Gulf War, prices even went into a steady decline. During the 90s, the economy was booming in Asian Pacific which was one of the main influences on the increasing petroleum consumption. With the decreasing price of oil, OPEC decided to adjust its production quotas in order to push them back up, but the process was slowed down by the 9/11 terrorist attacks. By March 2002 the prices started rising due to the combined reductions in production of oil of OPEC as well as non-OPEC countries.

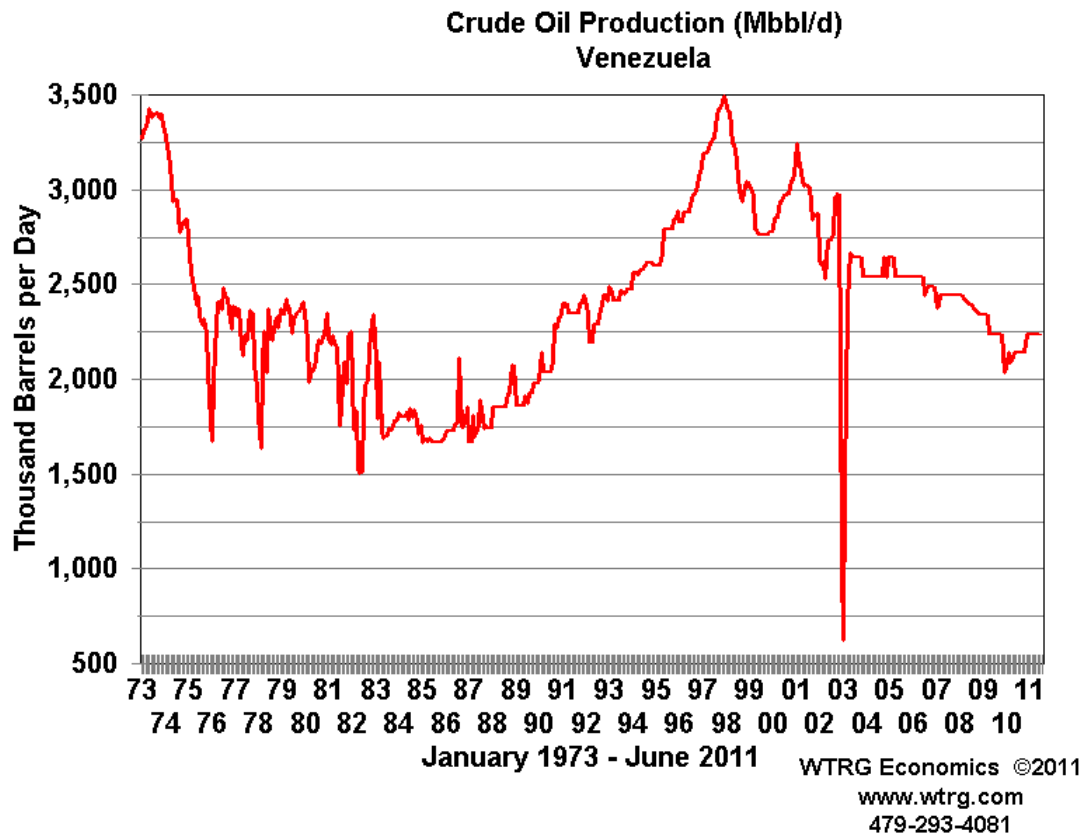
Figure 7



Oil price developments in 2002 – 2012

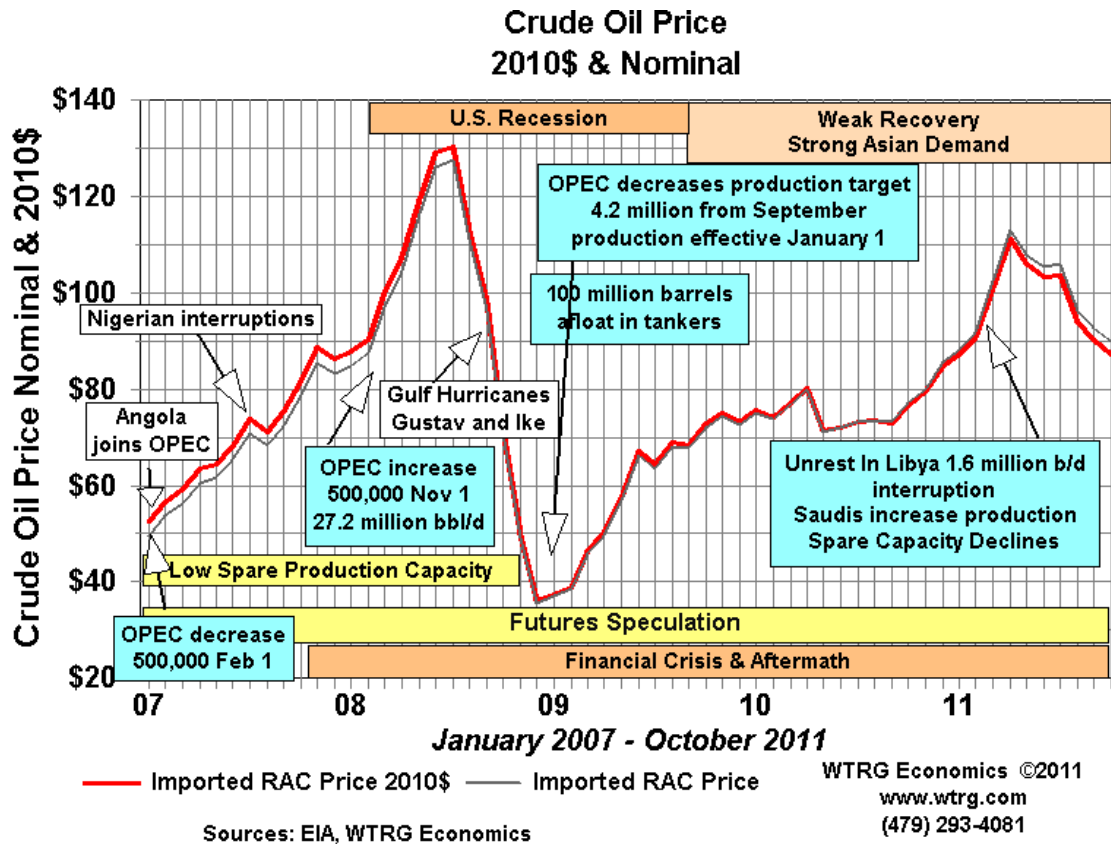
By the end of 2002 all the countries increased their production to previous levels except Venezuela. The strikes at PDVSA, which is a Venezuelan state owned oil company, with the intent to pressure the president Hugo Chavez to call early elections, cause the production to plummet. After that they were not able to restore the previous production levels (see figure 8). This had a significant impact on the prices of petroleum since Venezuela is one of the largest oil producing countries. In early 2003 there was still quite low inventory of oil after the quota reduction in previous years. The Asian Pacific countries that were recovering after the Asian crisis in the 90s were again rapidly increasing their demand for oil. This situation combined with the high demand of U.S. which was also at this time improving its economy; there was a growing shortage of oil.

Figure 8



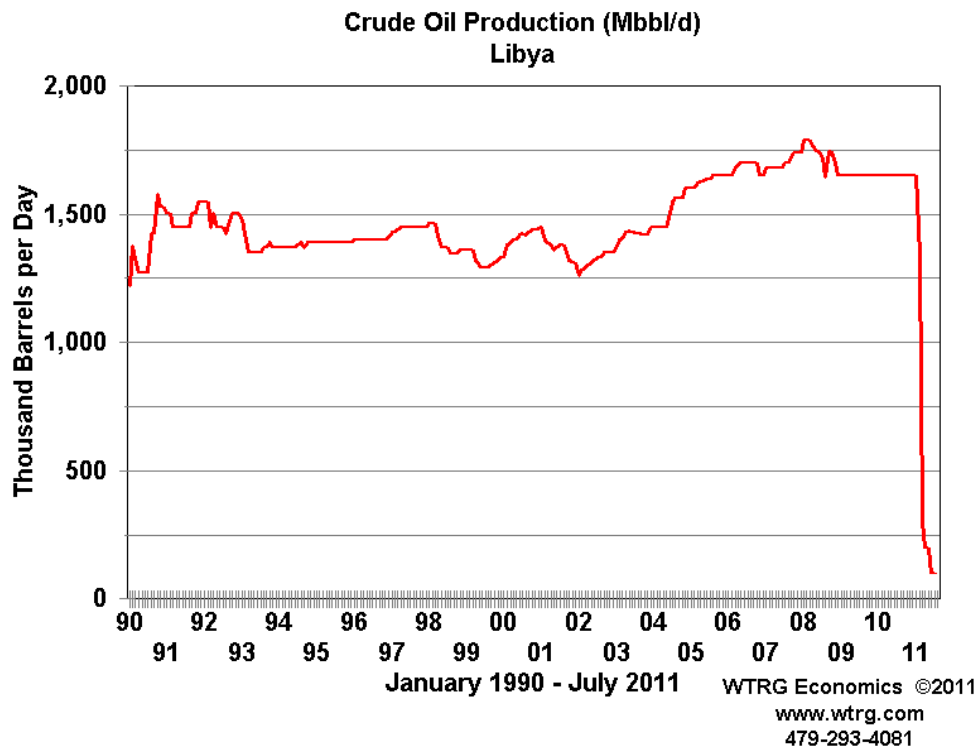
The problem became serious when military actions started to take place in Iraq. The prices began to rise rapidly. Combination of low inventories, weak dollar, growing Asian market followed by natural disasters in 2005 (hurricanes Katrina, Rita and Ivan) and conversion to a different type of gasoline additive in the United States (from MTBE to ethanol) caused a slope that was unprecedented. In the beginning of the recession in 2008 the prices were still rising. Speculations on crude oil futures were very strong and the trading at NYMEX on July 3, 2008 reached a new maximum price – \$145.29. But because of the falling demand caused by the recession and stronger dollar, the price gradually fell to below \$40 a barrel. In beginning of 2009 the prices slightly rose due to the tensions in Gaza strip and then stabilized around \$70.

Figure 9



In the beginning of 2011 prices began to soar again due to uprisings in Middle East and Northern Africa, especially Libya. The unrests again threatened the supply of petroleum from the main oil producing countries. The rebels threatened to destroy the pipelines or to occupy the ports where oil is transported (see figure 10). After the uprisings in the Middle East settled, the price of oil decreased from \$111 to \$75 per barrel in 6 months. After that the price was driven up in October 2011 by threats that Saudi Arabia, world’s biggest producer of oil, will have to cut its production. In May 2012 the prices decreased due to fiscal crisis in Europe and since then are slightly fluctuating around \$90. To November 28, 2012 the price of crude oil is \$86.29 per barrel. It is hard to predict the future prices of petroleum because they are largely dependent on future events. There are many techniques used by investors to give them at least some idea, but none of them are 100 percent reliable.

Figure 10



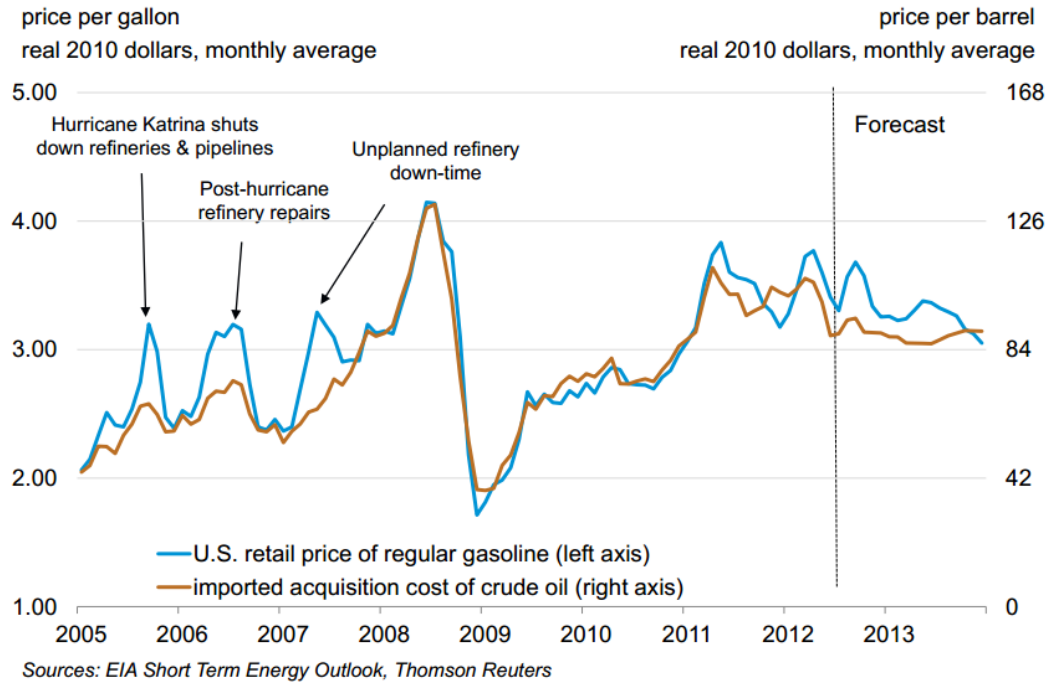
Conclusion

Prices of oil depend on many factors and the most important being political instability, changes in demand and strength of dollar. Many companies have to rethink their business strategy based on the price of crude oil. Some companies use it as a raw material to produce goods and others use it in a form of fuel for transportation. With the increase in the price of petroleum, costs of these companies increase and can drive them out of business. In 2008 when the prices were at their maximum companies selling fuel had great profits, but when they sequentially fell, many companies such as Chevron, Exxon Mobile or Shell had to cut their production to save money. Society also depends on prices of crude oil for the same reasons as businesses. They use fuels for travelling and buy products made of petroleum, and with the prices high their purchasing power is diminishing. Therefore, prices of crude oil affect the living standards of people. Moreover, oil sources are not infinite and the less there is of it in the world, the higher the price will be. It is important to try to find alternative types of fuel such as bitumen (solid, extra heavy oil with large

reserves in Venezuela and Canada). Otherwise high prices of oil will only have a negative impact on the economic growth and will slow down the recovery from recession.

Figure 11

Crude oil prices are the primary driver of petroleum product prices



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