Do not ask what you can do for the oil industry but what can oil indutry do for you

Alida Paunić

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University of Madison,USA

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Abstract

Strong more than doubled crude oil price rise from 2002 to 2007 brought significant profits to oil companies worldwide. Rising revenues, profits and increasing shareholders wealth are consequence of this favorable situation. Being non renewable resource, unequally distributed, responsible for many crises, wars, environmental pollutions, weapon trading, GDP fall, rising unemployment, interest rates and reaching its peak production point in the world of increasing gasoline demand, higher environmentally standards, global worming, natural catastrophes, constrained refining capacity forces us to ask: is the rising wealth to small number of shareholders only we should expect?

Paper examines oil companies and their contribution to promote social developments, clean energy, behave as good tax subject , closely work with government and various institutions to advance humanitarian environmentally friendly world.

JEL code: Q 40, Q 30

Keywords: energy, oil, non renewable

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1. INTRODUCTION

The last century already proclaimed by many to be century of oil has flourished with oil exploitation, production, developments of numerous oil products that are used in everyday life and without our existence is slowly but surely become fully addicted to. We have seen for the last 100 years growing oil influence, first smaller than bigger crises which some of them turned into real war that had for its root struggle for dominance on market, oil greed or happened due to the environmental and transport accidents.

What many of us, mostly part of older generation, remember is „old antiquitated" dream about beautiful 21 century filled with clean energy, numerous flying machines that are environmentally friendly, world without hunger, illness, fear or shortly new better future for all. Instead, we are bombed with pictures of hungry people, war in Iraq, growing concern about uncured diseases, problems of terror and violence fueled with good marketing on TV, lack of understanding and lost balance in which the most powerful ones control and administer justice of those who are without knowledge or guilt found to be minority in the N.W. "Order".

It was a widely known fact that oil prices can influence the macro economies by increasing prices, interest rates and slowing growth and GDP, but some economists argued based on very loose relation between the main macro variables in USA and oil price in the mid 90-ies that this dependence is a matter of past. A measure such as obligatory oil stocks, government reserves, fuel switching regimes and introduction of renewable could discouraged the strong negative oil influence on every day American life but with the policy of not progressing in oil substitution this relation is not becoming any weaker or insignificant in that particular country.

With the dawn of new century new war in oil rich Iraq started, crude oil prices together with its products seems to blossom making the oil companies richer than ever, progressively increasing their profits and making them and stock holders the one who mostly benefited situation.

On the other hand armed with numbers that are presented by UN as the millennium goal in which we have learned that still 44% of population in Sub Sahara region are living below 1$ a day, 47% of children living in Southern Asia are underweight, 69% of children are not enrolled in primary education in Least Development Countries, still large gender inequality in poor regions as well as in some developed countries, uncured 59% of women in Sub Sahara that are living with HIV, smaller regions of land covered by forest, large amounts of CO_2 averaged on the world level at 25 168 millions

of metric tons or simply 4 metric ton per capita makes us wonder are we really heading toward better world?

The main idea of this paper is to examine the oil sector influence on the micro and macro surroundings and argue that some planned wide range activities that were not undertaken by those in power together with oil companies locked us all in further poverty, climate changes disasters and problems such as hunger that in today's world with current knowledge of production should be matter of past and left to "old bad" 20 ieth century.

2. HOW OIL SHAPES OUR WORLD

Oil destiny shaped by human's mismanagement and its own curse as being non renewable makes of remains from million years before dinosaur's animals and plants wealth to be hastily spend by humans in the almost 200 years and subject of many wars and disputes. This particular nature of oil as non renewable resource points us to be extra cautious in order to spend this resource wisely avoiding addiction. This character feature was not resolved even by some huge economies that couldn't resist the sirens call and considered different tactics in order to get a larger part of black gold. Let's examine how it shapes the world, can it be properly substituted and how those who benefited out of earthly treasure contributed to society of men in this world.

When talking about what is left of oil today in the terms of quantities it is important to stress current disagreement between experts about numbers of proven and possible oil reserves but all of them agree that it is a word around 1 208 thousand million barrels unequally distributed wealth. The majority of it is placed in the Middle East region 62%, Africa and Central and South America has each 9%, Russia and North America each 6%, while the Europe and Central Asia settled with only 2% of world oil reserves.

Besides this, researches can't agree which country has reached its discovery, production or depletion peak and when. So, it is believed that depletion midpoint for Iran is 2009, Iraq 2021 Kuwait 2018, United Arab Emirates 2026, Kazakhstan 2036 and for Russia was 1992.

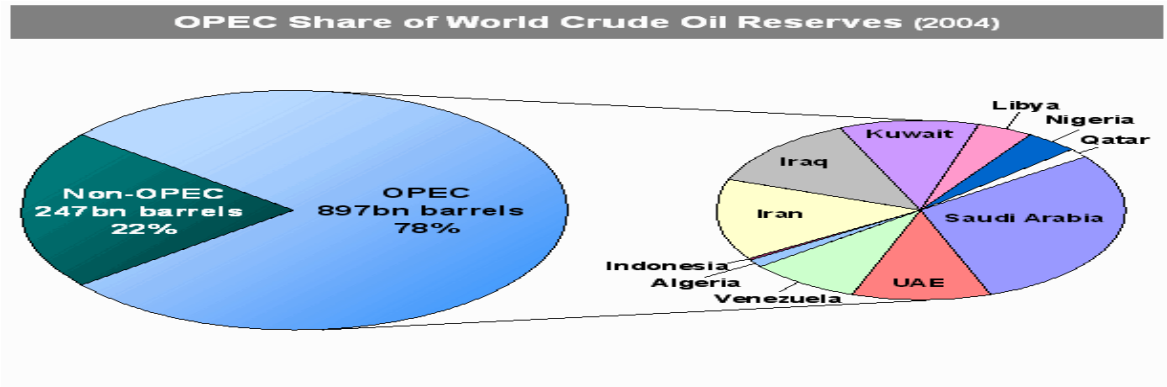
These two strong reasons: inequality and addiction made this business of oil constantly followed by numerous conflicts and different scenarios of possible events that are naturally or artificially produced even in today's modern 21 century. Let's just recall pictures from today's Iraq torn to pieces due to "democracy" imposed with military action and bitter inner conflicts; Arab- Israel constant intolerance, potential threat of terrorist attacks on the Middle East and in the countries of the former Soviet Block

(Armenia, Chechnya, Azerbaijan, Aphasia, etc). Oil facilities are found to be in the spotlight of terrorist activities that are attacking oil fields, pipelines, storage facilities. Especially vulnerable places not just for local disagreement and potential crises are narrow ocean straits where one incident could shake global oil market and prices: Strait of Hormuz (13-16,5 mil bbl/d), Strait of Malacca (10-11,5 mil bbl/d), Bab el Mandab (3,2-3,3 mil bbl/d), Bosporus (2-3 mil bbl/d), Suez (1,3 mil bbl/d) and Panama(0,5 mil bbl/d).

Further potential treats to oil supply are inner conflicts in countries rich with oil reserves but lacking the some other important attributes that could bring welfare to society: rich families are ones that keep the majority of wealth while population still fight with unemployment; living female figure far behind; not providing schooling and health equally to everyone; buying military equipments instead of irrigation and agriculture developments; lack of investments and developments in the clean technology (like solar/wind) that could further drive higher prices down and make living more comfortable for them and neighboring Africa.

Although oil intensity is lowered since mid 70- is it impacts greatly every day living of modern society and making power of OPEC more recognizable. Influence of this organization is very distinct while its decisions about oil production rise or fall influence prices greatly and it is easily achieved if we know that 12 countries possess 897 bn barrels of oil or 78% shares of the world reserves. *(Graph1*)

Graph 1:OPEC and Oil Reserves



Source: OPEC

Today's problems of modern oil industry are lack of investments in building new or modernized existing refinery capacities, increasing demand for better quality, environmentally more expectable products and very low difference between the demand and supply levels.

In addition to these problems oil industry get herself involved with the military and weapon trade. Very high levels of Pearson's coefficient of correlation between the import of oil with weapons

export.(0.74) is observed of which half of the total weapon export is contributed to USA, after which follows UK, France Germany and Russia. The biggest importers are OPEC countries (Saudi Arabia and Kuwait) and developing countries. Than is understandable that having a Nash balance in the complex surrounding of Persian bay which has 60$trillion wealth or ¾ world reserves, with the costs of extraction 5$ barrel, with five countries having nuclear weapon, and 18 nationalities of the 9/11 kidnapers is not an easy task.

Theses problems and obstacles are recognized after 1974 OPEC's embargo to USA and Netherland when western countries tried different ways to make themselves less vulnerable to potential future oil crises. On the demand side they took measures which included saving, decreasing oil intensity, bigger investment in research and technologies, tax system reform and supporting the stable energy prices.
On the supply side energy promotion of different energy sources and directions of supply are organized like starting up organizations such as: World Energy Council with the aim of energy promotion and equal right accession to all; The Interstate Oil and Gas transport to Europe with its purpose to assess current network of gas and oil pipelines in Europe, possibilities of development of the new directions, increasing level of energy infrastructure, knowledge transfer, coordination, promotion and investment activities of the strategic projects; Energy Charter was at the beginning thought to be flow of technology from western countries to East mainly Russia and reverse energy flow from Russia to western Europe. With the time it increased its mission to the five important reform tasks: security, business transparency, private property rights, building new capacities and coordination with the strategies from the other sectors.

All these activities that includes governments, tax authorities, different ministries, numerous organizations and companies with broad range of different tasks underlines the important of oil as energy that is further elaborated in the *Table 1* which shows that oil in the near future is going to play the most important role although with decreasing growth.

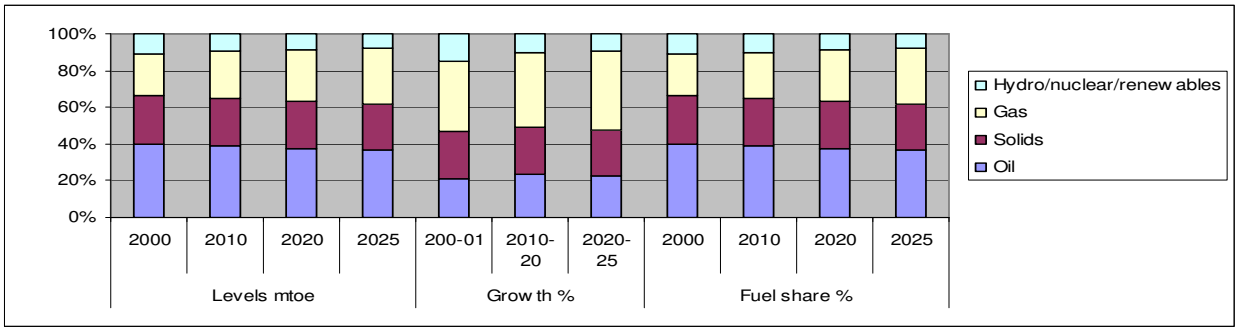
Table 1: Levels of energy /growth /fuel share

	Levels mtoe				Growth %			Fuel share %			
	2000	**2010**	**2020**	**2025**	**200-01**	**2010-20**	**2020-25**	**2000**	**2010**	**2020**	**2025**
Oil	3614	4225	5059	5492	1,6	1,8	1,7	40,1	38,7	37,6	36,9
Solids	2341	2818	3435	3750	1,9	2	1,8	26	25,8	25,5	25,2
Gas	2101	2800	3808	4453	2,9	3,1	3,2	23,3	25,7	28,3	29,9
Hydro/nuclear/ renewable	953	1065	1153	1195	1,1	0,8	0,7	10,6	9,8	8,6	8
Total	**9.009**	**10.908**	**13.455**	**14.890**	**1,875**	**1,925**	**1,85**	**100**	**100**	**100**	**100**

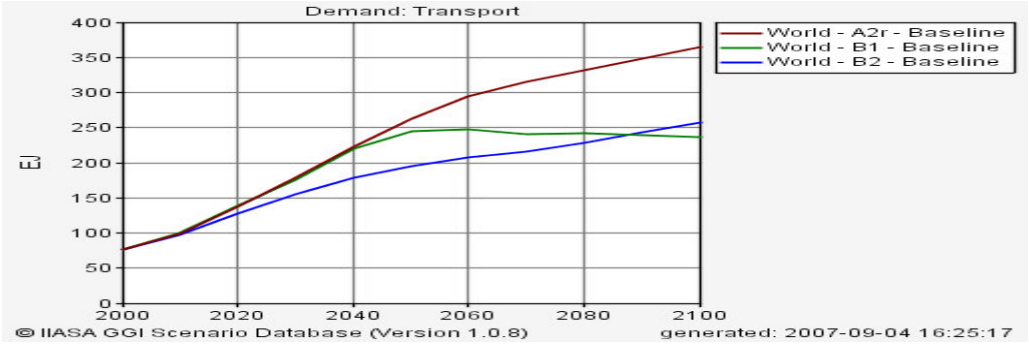
Source:OPEC

It is to be seen whether governments and industry are going to resolve the lack of energy in this and next century by investing in renewable considering the growing demand in the developing countries primarily China and India.

Graph 2:Level/Growth/Fuel share



Source:OPEC



2.1 Oil production

There has not been significant shortage in supply over the last couple of years. On contrary, strong growth followed from 77 m b/d in 2002 to 84 m b/d in 2006. OPEC has risen in the last four years its production by 10% for more than 3,7 m b/d to 34,3 m b/d and did not use its cartel power. However, the largest production is made in the non OPEC countries (43,4%) of total, with OPEC 's producing 41,7 % of total and leaving the FSU the rest or 14,8% of total.

Among the biggest producers is still Saudi Arabia, narrowly followed by Russia. Having half of their production followed by Iran, Venezuela, UEA, Nigeria Kuwait, Iraq, Libya and Kazakhstan.

Strong surge in demand coming from China and India open the question of spare capacity[1] and problems in production. According to IEA OPEC's spare capacity is only 1,78 m b/d what makes the last few years spare capacity level lowest in the 35 year history series.

Table 2 shows crude supply and demand from 2002 showing how the gap between these two variables is closer each day what further points to necessity of clear vision of world energy strategy and explains partly potential high nervousness of oil prices.

Table 2:Crude Oil Demand and Supply

mil. barrels per day	**2002**	**2003**	**2004**	**2005**	**2006**
OECD Demand	48,00	48,60	49,40	49,60	49,90
Non OECD Supply	30,00	30,80	33,00	33,90	34,80
Total DEMAND	**78,00**	**79,40**	**82,40**	**83,50**	**84,70**
OECD Supply	21,90	21,60	21,30	20,30	20,20
Non OECD Supply	24,50	25,50	27,10	27,90	29,10
Profits in production	1,80	1,80	1,80	1,80	1,80
OPEC	28,80	30,60	32,90	33,90	34,3
Total SUPPLY	**77,00**	**79,50**	**83,10**	**83,90**	**81,60**
Change in Stock's	-0,90	0,30	0,50	0,50	

Source: British Petroleum

What kind of problems can be expected on the side of supply?
Numerous exceptional supply constraints affected large number of producing countries: Iraq faces human suffering daily and lowered its production for the 30% down on pre war levels. Iran's nuclear

[1] *Capacity-the maximum amount of production that could be brought online within a period of 30 days and sustained for at least 90 days*

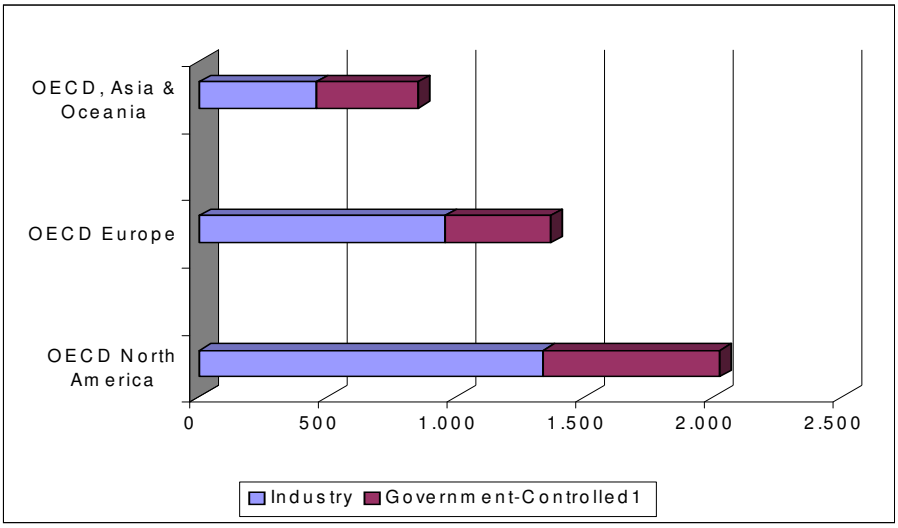
enrichment is every now and then picked up as subject and embargo to this state can shake the world oil market easily.

In addition to this weather conditions could be a large obstacle to supply following the NOAA[2] forecast for USA to expect 8-10 hurricane's a year. Knowing that Hurricane Katrina demolished a 10% of the USA refining capacity this makes a justified doubt of potential problems.

These fears induced hardening the stockpiles which further raises costs and prices. Oil inventories in the USA *(Graph 3)* amounted 54 days of forward consumption. These rising levels of inventories further exceserbates oil price and this is the first time that history of reverse relation between the oil stocks and prices have been broken.

Part of guilt about oil price uncertainties can be traced down to increasing number of speculative contracts which largely have not been fully comprehended or researched. Besides non trade investors amounting 30% of the contracts in West Texas Intermediate there are large number of investors who are not included like proprietary trading activities of the investment bank, flow of funds related to commodity indices, trading through exchange traded funds.

Graph 3:Industry and Government stocks worldwide

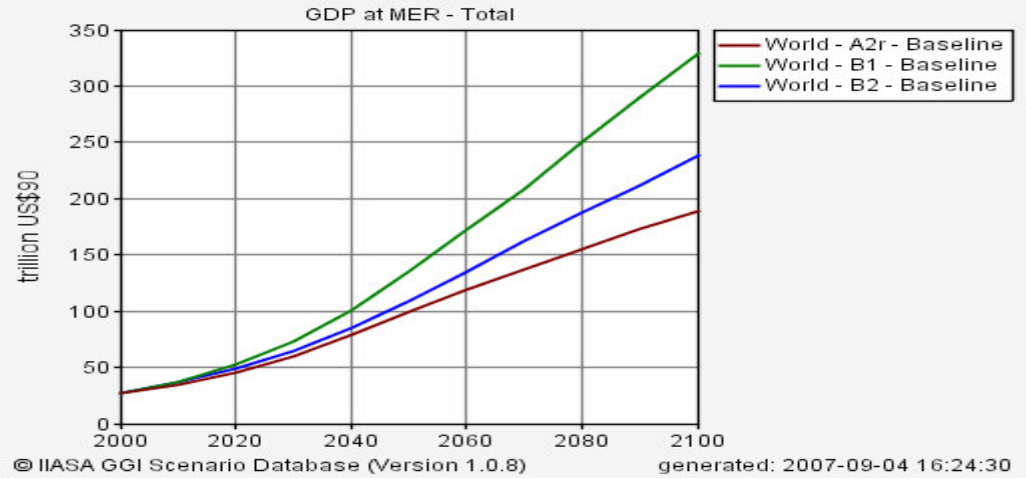


Source:IEA

Shortage of refinery capacity has become more visible when comprehending the fact that over that last ten years crude has risen over 19% while capacity only 11%. USA increased its gasoline consumption by 45% after mid 70-ies without building a new refinery. Utilization rate at about 85% in OECD proves a little bit more space for improvement but small number of complex refineries points us to further caution.

[2] NOAA The National Oceanic and Atmospheric Administration

Graph 4: GDP growth 200020100



These problems encouraged the exploration in ultra deep water, as well in the Artic region and in the oil sands. But further scary fact estimated by IEA is that there is a need for necessary investment of 3 trillion dollars to be made in the next 25 years in order for suppliers to meet demand after 2030.

2.2. Oil consumption

Global oil demand was 84,7 m b/ d what presents 1,4 % increase when comparing to the year before and 4% increase comparing two years before (2004). If put in comparison with the rise in world GDP of 5% this single number seams low. The reason for that can be traced to the fact that high oil prices discourage consumption to one point, while speeding the efforts to be more energy efficient and decreased oil intensity so richest countries don't change upwards much their consumption habits lately .

Developed world (aside USA) is trying to find a ways to decrease oil addiction through alternatives leaving probable future oil demand to depend upon situation in the emerging markets. If the GDP growth continue to burst as we have seen for some time and knowing the fact that in the USA there is 1 car for every 2,2 people while in China it is low at the level of 120 than future rise of 2-4 % in oil demand is to be expected. It is believed that one quarter of the future oil demand is to be allocated to China alone, while one eight to India. Besides Asia's giants Middle East countries especially Iran are booming being second gasoline importer (after USA) in the world market.

2.3 Oil, renewable resources and environment

High oil prices forced consumers and producers to consider another substitute or alternatives. The largest widespread oil use is in the transport sector that needs to consider alternative fuels and ways of energy usage. Unfortunately since today a little is done on that field. Car industry is still stronger than ever with new models coming each year improved with leather seats, better loudspeakers faster engines but what has really changed?

Majority of viachles still runs on gasoline and there is not any visible solution to be changed in the short term period. But with high oil price levels, stronger EU regulation in the field of environment, bio diesel introduction, Kyoto protocol we could slowly but surely see some changes. But question still holds: is it good and fast enough?

We are witnessing the time of global weather problems whether is it a word about hurricanes, floods, earthquakes, conflagrations etc. Global worming has serious consequences on our lives and we should be aware that IPCC/UN report about global worming is not happening to Pluto or Mars. In this report we can learn that water level is about to rise making some places at extreme risk like small Irelands or Bangladesh. While this country is one of the poorest on Earth with people who struggle to meat month ends without food, have no car problems while are not in possession of them we should ask ourselves should they pay the price of CO car emissions that they did not make and aren't we all responsible at least a bit? By building dam, sending money, making no excuses to transfer the leisure of our life's to be bared by someone who hungers daily.

When said leisure it is meant that 65% of the world oil production of 83 mbbl/d is spent by 700 million vehicles out of which 50% drive daily distance of no more than 30 km.

On the other hand alternatives should be wisely, quickly and most seriously taken into consideration.

The good start is to compare at the current crude price level competitive fuel prices. From the *table 3* and life we can notice than more and more gas stations and cars are available, bio fuel is incorporated in the EU policy with fixed dates but this is gong at the slower pace than should be due to the numerous reasons.

Table 3:Overall Average Fuel prices on Energy Equivalent Basis (2006)

Fuel	Price($) in equivalent gasoline
Gasoline	2,23
Natural gas LNG	1,99
Ethanol(E85)	2,81
Propane	2,74
Bio diesel (B20)	2,41
Bio diesel (B2-B5)	2,21
Bio diesel (B99-B100)	3,18

Source : DOE

Bio fuels became great publicity in the last decades due to small modifications of cars and existing filling station network. But it seams that pace of substitution that was made by EU directives firstly of setting the 20% of bio fuels need to be revisited to only 10% by the year 2020.
The second problem is that yes you can change the engine for "just" $200 but the rest of further engine operation largely stays by owner. Further constraints are seen on the production field and availability and morality of using the large quantities of land for driving, having people that starves.

Ethanol production is highly depended upon geographical location. In Brazil sugar canes gives results but 1 hectare of land is needed for getting a 50 t of sugar and 3,2 t of ethanol. Ethanol production is energy intensive while 1 liter of ethanol with an energy content of 21,4 MJ requires 17 MJ of energy and it is worth mentioning that quantity of ethanol produced causes the CO_2 emissions.[3]

Although bio diesel is possible to produce from the larger number of crops in the EU this production is limited to oilseed rape. Still potentially larger area of 1 ha where 2,8 t oilseed rape is produced gives us 1 t of bio diesel. Making an less farm potential of 0.13 liters of biodisel per m^2 comparing to 0,4 liters of ethanol/m^2 source of advantage is obtained by less energy production process which requires only 10,8 MJ per liter of bio diesel while ethanol needs 17 MJ per liter of ethanol.[4] While bio diesel production realizes no CO_2 emissions this is further great compensation over the lower farm potential.

Current bio diesel production is estimated to be 1.1.$ /liter what is compared to price of diesel production at the level of crude of 60$ bbl= 0.64 liter more for 0.5 $ liter. In order to be viable bio diesel production need to be subsidies by government. This facts brings us to conclude that no more than 15% of bio diesel will substitute oil in the near future and will be available only in developed countries.

Since vehicles are the most needed in the polluted cities electric cars, at first glance, seams to be perfect substitution. Power of the electric cars lays in accumulation. But unfortunately the storage is made of lead and can not make more than 35 Wh/kg of energy density what reduces operating radius of the car and power of engine diminishes driving speed (what is not bad many times).Although the cost of recharging an accumulator battery is five times cheaper than a fossil fuel it can take only 400-700 recharging cycles what further implies each year accumulator replacement at at least 1 400$ cost. Further and the most significant limitation of the electric vehicles is their maximum radius of 45 km that diesel fueled engine covers with 3 liters.

[3] *1 t sugar corn +6.9GJ energy= 0.34 t ethanol+ 0.32 fodder + 0.34 t CO_2*
[4] *Biodisel production process 1 t oilseed rape+5.4 GJ energy = 0.44 t biodiesel+0.04 t glycerol+ 0.52 t fodder*

Today's solar technology has no practical use due to higher cost. In household with 5 KW energy consumption solar system worth 25 000$ is required what is the cost of 100 year average household power consumption. Risk is bigger if we want to apply solar system in our cars facing with winter seasons with cloudy days that need additional driving force.

Producing electricity out of wind greatly depends of location with the maximum power output available at the wind speed of 13b m/s. The larger the surface area of the turbine and by connecting several wind generators the more power is available. The cost of having 30-50 kW is approximately 1 500 /kW with operating costs around 0.7 c/kWh. And with price of 8 c/kWh the wind power plant would pay off in 15 years. Risk is greater if the price falls under 7c and is highly dependent upon weather.

Although the first successful fuel cell dates to 1932 idea of having fuel cells which directly converts hydrogen into electric power is featured with many problems. The first and the most important one is that fuel cells can't operate reliably without using an unacceptable amount of platinum as catalyst.
Today's level of platinum is 130 t/year majorities in South Africa but for the production of 1 million cars amount of 35 t is needed. Hydrogen as a fuel of future has always been a topic that wakes an imagination. The very nature of producing technology is interesting when we know that it is a word about waste heat of a nuclear power plant, biomass, photo biological method using algae, or high temperature steam dissociation using waste heat of a nuclear power plant. Drawback of this method starts with energy of 33 kWh needed to produce 1 kg of hydrogen whose energy content is exactly the same as input 33 kWh. Further, low density and energy value as well as slower fuelling rate than in comparison with diesel requires massive tanks to transport. Each fuelling station would have to produce hydrogen what requires huge unprofitable investments.

Taking all these facts into consideration we can say than only bio diesel up to 10-15% and electrical vehicles has the chance to substitute oil in the short term. Each country is trying to go its way in finding the solution to potential energy crises: Brazil is having ethanol almost 90%, USA is considering removing taxes on importing ethanol from Brazil and worked on hydrogen and electrical cars, EU has long term strategy in promotion and implementing alternative fuels.(*Table 4*).The goal of the EU by 2020 is to promote and gradually implement gaseous fuels (LPG[5] +CNG) up to share of 10%, bio fuels up to 8% and hydrogen up to 5%.

[5] LPG = Liquefied petroleum gas

Table 4:EU goals in implementation of alternative fuels

Year	Bio fuels	LPG+CNG	Hydrogen	Total
2005	2%			2%
2010	6%	2%		8%
2015	7%	5%	2%	14%
2020	8%	10%	5%	23%

Source: www EU.

Growing trend of auto owners continues with the GDP growth in emerging markets bringing additional already harmful quantities of greenhouse gases into atmosphere. After first restrictions in EU in early 70 –is of carbon monoxide (CO), further regulative follows introducing the limitations in emissions of total hydrocarbons (HC), nitrogen oxide (NOx) and diesel engine C particles. With the time regulations become stricter requiring all gasoline engines to have catalyst converters (1992), limitations of emissions for both diesel and gasoline engines.[6] (*Table 5*)

A big breakthrough was achieved by lowering the fuel lead alkyls content after limiting sulfur compounds content and implementation of the catalyst system which converts harmful gases into harmless one. EU member states should have maximum sulfur content of 10 mg/kg in unleaded petrol and diesel fuel.[7]

Table 5:ECE regulations regarding maximum allowed vehicle exhaust emissions

Year	Euro standard	CO	HC	HC+NOx	NOx	PM
Passenger cars –gasoline engines						
1992	Euro I	2,72	-	0,97		
1996	Euro II	2,20	-	0,50		
2000	Euro III	2,30	0,200	-	0,15	
2005	Euro IV	1,00	0,100	-	0,08	
2008	Euro V	1,00	0,075	-	0,06	0,005

Source: www EU

Attempt organized by UN Convention on Climate Change known as Kyoto protocol to reduce the anthropogenic greenhouse effect (carbon dioxide, methane, nitrogen sub oxide, halogenated CFC and sulfur hexafluoride) by 5 % until 2008-2012 compared to 1990 level was excepted fully by EU who made herself committed to 8% reduction by the same period.

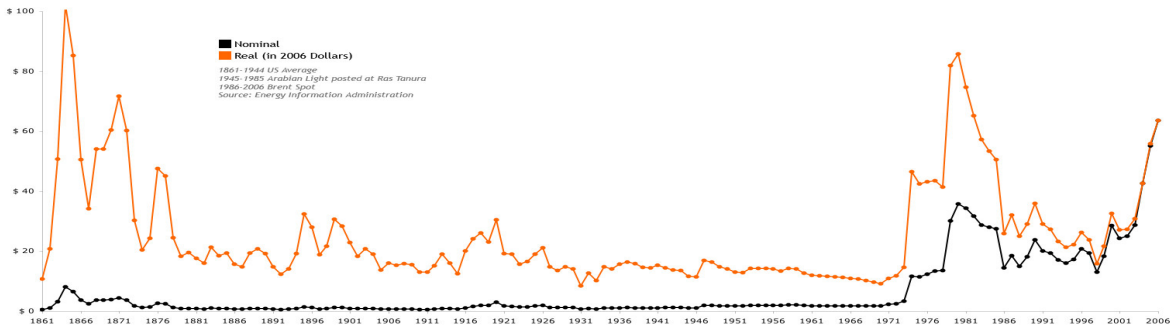
[6] Directive 70/220/EEC basic directive
Euro 1 requirements (EC93)Directive 91/441/EEC (for passenger vehicle only) 93/59/eec (passenger and light duty cargo vehicles)
Euro 2 requirements (EC96):Directive 94/12/EC or 96/69/EC
Euro ¾ requirements (2000/2005)Directive 98/69/EC supplemented by 2002/80/EC
Euro 5 requirements (2008) addaptation suggested (COM (2005)683)
[7] Directive 2003/17/EC

Having in mind that road transport contributes greatly to the global greenhouse gas emissions which are linked to fuel combustions EU Council Directive 93/116/EEC3 requires for cars sold in Europe to achieve an average CO_2 emission figure of 140 g/km by 2008.

2.4 Oil prices

Although oil prices has a volatile nature (*graph 5*) it exhibits mean reversion tendency, but how to exactly forecast future price movements depends upon many factors that include global, local demand and supply, refinery margins, building new capacities, oil stocks, elasticity's of demand and supply, accidents or terrorist attacks etc.

Graph 5: History values of crude oil prices in nominal and real(2006)terms



Numerous studies are trying to value crude reserves and crude prices beginning with Hotteling principle 1931 who proposed that the equilibrium return on an exhaustible natural resource will rise at the rate of interest. Further research (Kaldor) argues that inventory holding is profitable even during price backwardation due to a convenience yield that offsets the negative returns from storage. Latest method is widened with the geopolitical considerations, demand and side policy, future production costs which all explains periods of backwardation.

In this way future price equation equals followings:

$F_t = S_t * e^{(r-c)(T-t)}$

where

F=future oil price ; S=current price ; r=interest rate ; c=convenience yield;

If the level of stocks is high r-c>0 otherwise r-c < 0

Such reasoning brought us to formula where change in prices depends upon interest rate, refinery margin and deducted by percentage of convenience yield.

$P_t - P_{t-1} * (1+r+q -\%Cy) = - (c_y - \%c_y - P_{t-1}) + v$

When considering structure of future oil products prices we should have in mind necessity of avoidance certain level of stocks; to make possible for producer to sale his products in optimal time in that way maximizing profit and need to smooth production in order to avoid delays, lacks of inventory, or avoid lack of goods during bigger unannounced order.

Oil price rise is equal to required rate of return impaired for balanced net marginal percentage of additional convenience revenue. Besides these requirements it is necessary to add expectations about future LRMC[8] levels or prices of substitutes available for consumption.

C_y = P+ v- (Stocks-Aimed Stocks)

Stocks = Stock $_{t-1}$+ Production –Consumption

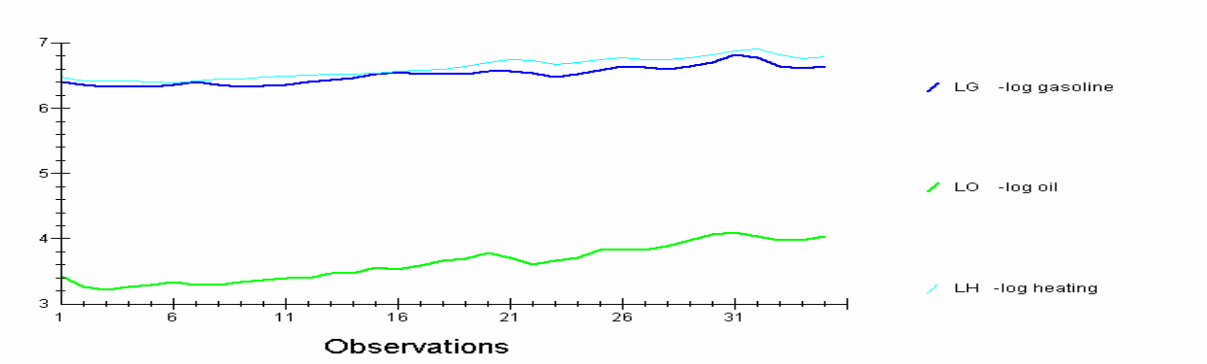
Aimed stocks = Balanced production

Production = $b_0+b_1*(P_t-LRMC)+v$

Consumption = $c_o-c_1*(P_t-P_{substitutes})+u$

Great crude oil price volatility besides its significant influence on the economies worldwide further drives oil product prices especially gasoline up. By influencing the price of products it is not irrelevant whether is it a word about anticipating crude oil price rise (after announcement made on OPEC summit) or unanticipating which slower incorporates its influence in the product prices due to the prior contract obligations, limited refinery capacities, slow systems etc. Further to note is that crude price rise is faster implemented in the gasoline price than the other way around situation (falling prices). From the *graph 6 /graph 7* we can easily recognize the trend of similar movements with the lag period of gas and heating prices with the prices of crude.

Graph 6:Log gasoline prices follows log crude prices



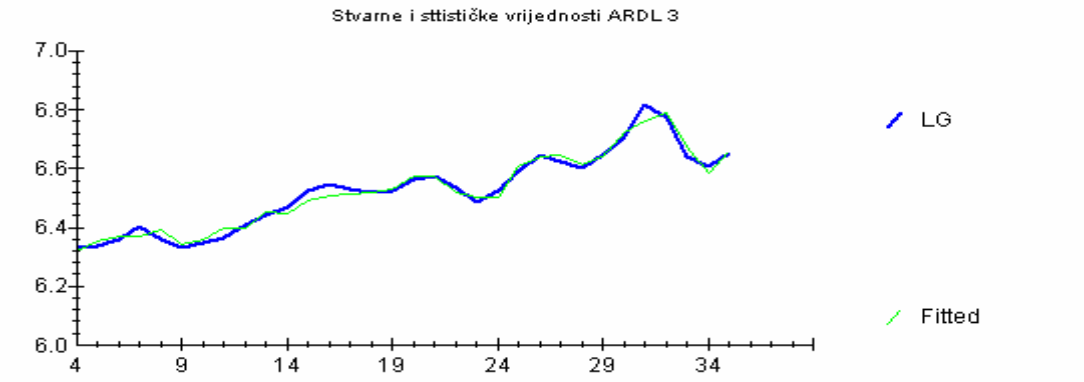
Source: author

Statistically this relation is best explained by ARDL relation in the form

[8] LRMC =Long run marginal costs

l gas=con +l oil +time+e
where
l gas= log value of gas; l oil=log value of crude; time= period taken e= error

Graph 7:ARDL (3,3) log gas/log oil



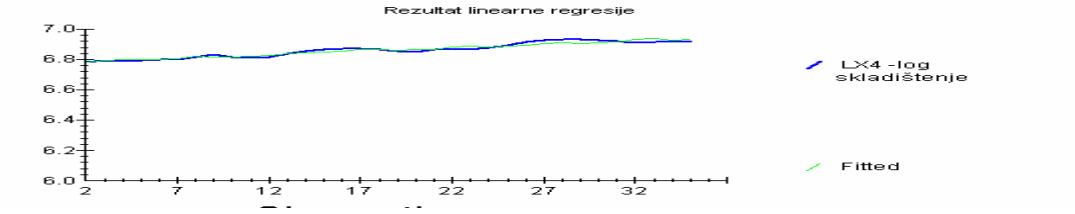
Source: author

There is two way link between gasoline price rise and the level of obligatory stocks in USA where greater demand for gasoline normally influence the rise in its prices but at the same time reduces level of stocks.How level of government stocks can further drives prices up is shown on the *graph 8* and is based on USA data :

LX4= CON +TIME+LX4(-1)+LX4(-2)+LX4(-3)+LX2+LX3
Log (government stocks FED) =Con+ Time+Log storage+Log(gas prices)+Log(crude pricese)

LX4= 2.4+0.0013 Time – 0.004134 Crude Prices + 0.032687 Log gas prices + 1.335 LOG Storage (-1)
- 0.72411 LOG Storage +0.0019 LOG Storage (-3)

Graph 8:Log storage / time, oil gasoline, storage lagged



Further help in prediction and calculation the crude price (products) prices are elasticity's (*table 6*) calculation.

Table 6:Elasticity's of oil supply/demand

	Elasticity of supply			
Change in prices if 1 mbd of oil is decreased		0,025	0,05	0,075
Elasticity of demand	-0,04	10,50	7,58	5,93
	-0,08	6,50	5,25	4,40
	-0,12	4,71	4,01	3,50

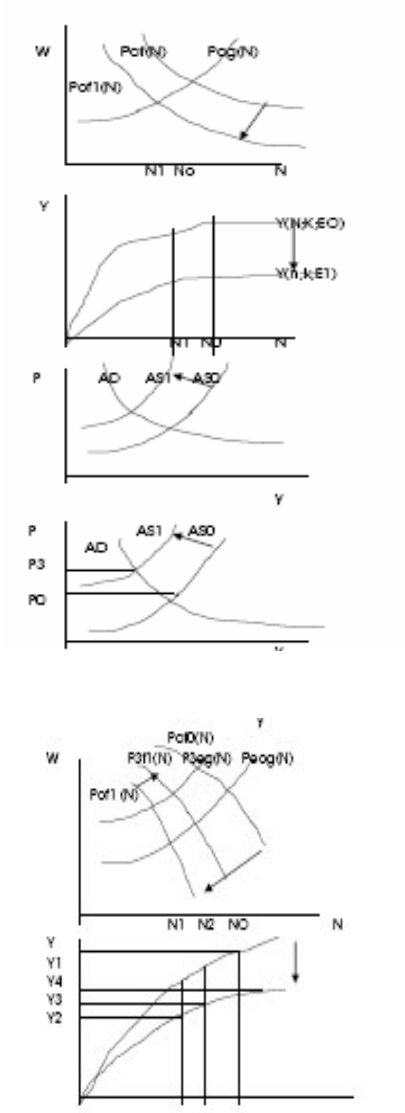
3. OIL AND MACRO ECONOMY

Economists around the globe especially in USA offered wide scope of different explanation how oil prices hike hurt economies. The most basic explanation is classical supply shock where oil prices reduces availability of an important input to production. The second explanation starts from the fact that rising oil prices results in income transfers from oil importing to oil exporting nations. The others argue that monetary authorities responds to rising oil prices with the contraction monetary policy that boosts interest rates. The last but not least consequence of the oil price rise is that growing prices leads to increased money demand as people try to direct their portfolio toward liquidity. If this desire is unsatisfied interests rates hikes. Rising interest rates is slowing down economic activity.

Classical supply shock starts with reasoning that higher oil prices induce scarcity of energy which is basic input to production. Smaller input to work means reduced output productivity and necessity for labor. Real wage growth is reduced while larger number of unemployed is present on the market. If consumers expects rise in oil prices to be temporary they smooth their consumption by saving less or try to borrow more. Their actions have for result higher interest rate, fall of demand for real cash balances and prices to rise. Higher oil prices reduce real GDP, increase interest and price levels. (*Graph 9*)

The second strong explanation starts with shift of income from oil importing to oil exporting countries. The rise in prices reduces purchasing power and consumer demand in oil importing countries. But, the increase in the consumer demand in the oil exporting countries has been less then the reduction in consumer demand in the oil importing nations. This further increases savings putting down interest rates which further stimulates investment partially offsetting lower consumer spending while partially restoring aggregate demand. On net aggregate demand is lower what further reduces prices. Economic theory suggests that real prices will continue falling until aggregate demand and GDP are restored to pre shock levels. If nominal prices are sticky down the process of adjustment will not take place and aggregate demand and GDP will not be restored unless unexpected inflation increases as much as GDP growth falls.

Graph 9 : Macroeconomic consequences of the oil price rise (IS/LM curve)(AD/AS curve)

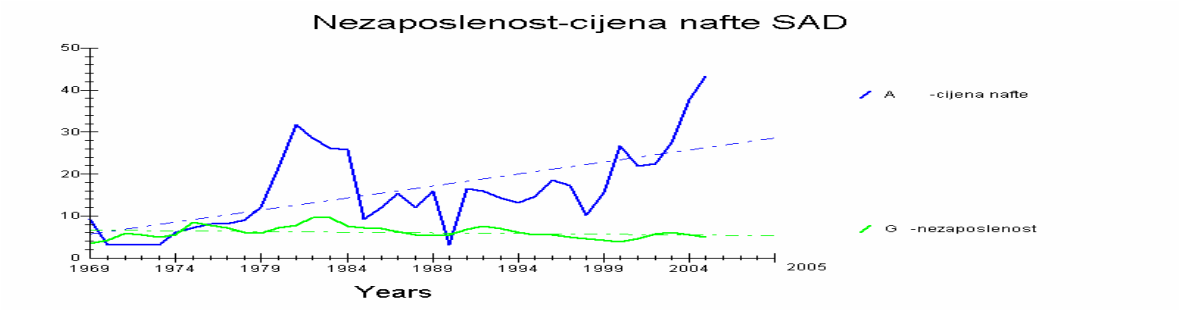


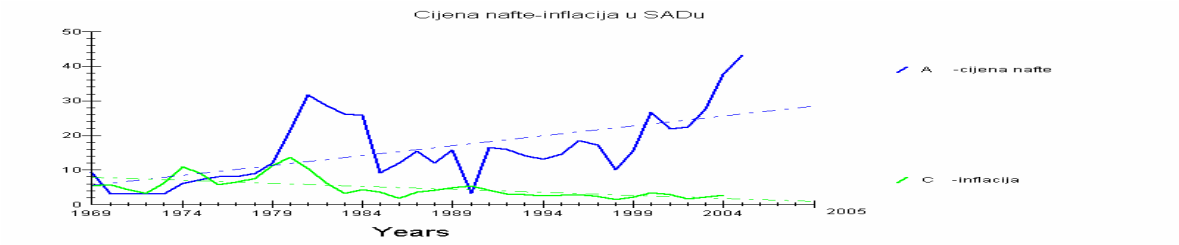
Source: Macroeconomics,Bronstain

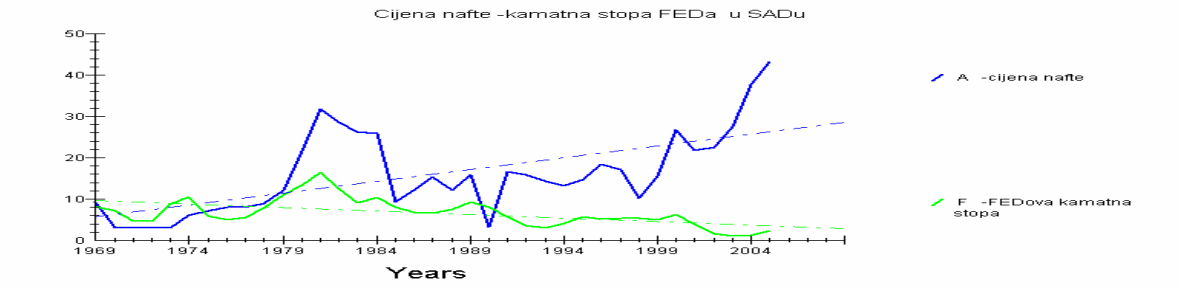
The role of monetary policy was one of the basic explanations how the oil prices affect economic activities than abandoned due to classical supply shock scholars, to the same rate at which be returned to during the 90-ies. It is known that restrictive monetary policy results in rising interest rates, reduces GDP growth and inflation, but this was not consistent with the history record. When monetary authorities hold the growth of nominal GDP constant the inflation rate will accelerate as real GDP growth slows. To the extent that the market is slow to adjust to monetary surprises a more accommodative monetary policy (by interest rate reduction) offsets losses in GDP while at the same time increasing inflationary pressure. A restrictive monetary policy of rising interest rates would temporarily intensify the losses in real GDP while it reduces inflationary pressure.

Graph 10 follows the crude price movements with main macroeconomic variables in the USA. It is clearly visible that oil hikes was strongly followed in the periods in mid 1970 by rise in unemployment, inflation and interest rates slowing economic growth. However, it is noticed weaker influence in the late 1990 last century due to numerous factors such as growing central banks credibility, smaller oil intensity, renewable. Period since 2001 brought us war in Iraq proving that relation between the oil and USA economy is still of great influence.

Graph 10: Oil prices and level of unemployment /inflation/ interest rates / in the USA







Source:author

Real influence of oil and certain economies is dependent upon oil dependencies, reserves, consumption and demand and extent to which it will hurt economy depends upon sum of these factors. Oil demand and supply elasticity's are then further broaden with following considerations.

If the oil is firmly embedded into technology and capital equipment and it is hard to change fuel oil firm can not vary energy/output ratio in the short run, we are faced with additional adjustment costs that further retard economy.

Further potential treat that could increase crises comes from sect oral imbalances. Individual firms understand how their output is changed under different price values, but don't know how competitors will react. The result could be over or underproduction of certain goods.

In the uncertain times a few people are willing to invest in the long term capital especially if the oil technology is strongly embedded. In addition to this, uncertainties about credit and future interest rates give rise to fear of new investments and further weaken economic activity.

4. OIL COMPANIES

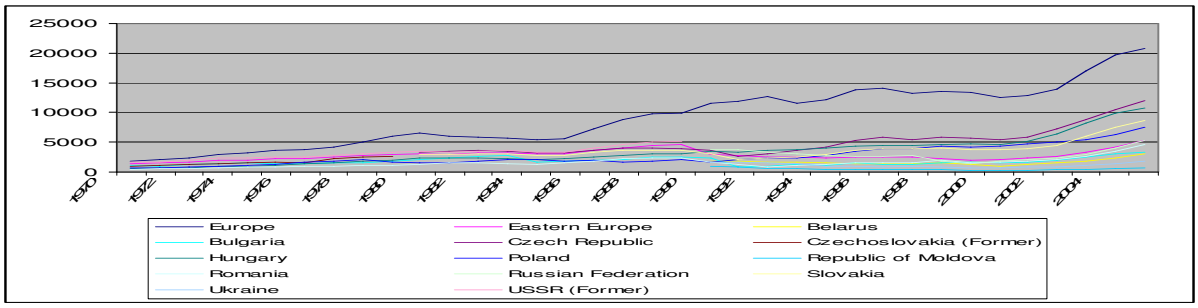
Oil companies are in the very center of the oil business. They explore, invest, operate, determine prices of numerous oil products and have wider margins across narrow regions than expected to be. Having in hands product that the most cars today need they are in charge of transportation costs to many. Having no real competitor especially in transport sector, faced with higher and higher gasoline prices oil companies are making rocketing profits. How they have used they advantage position on the market is to be explored as follows. Significant players on the energy market are USA, Saudi Arabia, Russia, China, Canada, India and European Union and some of their characteristicks and companies are briefly examined.

4.1 Russia

Russia's oil production in 2006 was 9.769 thousands barrel per day what is 2.2% increase to previous year. Comparing it to the total world production of 3 914 mil ton, it reaches 12,3% making it the second largest, following Saudi Arabia, having 13,1% , oil producer. From the large discrepancy between production and consumption (2 735 thousand barrels daily)[9] what is only 3,3 % in the world total oil consumption we can conclude that the Russia is significant oil exporter too. Although there has been a smaller revaluation of existing reserves to up of 0.6% in 2006 comparing a year before Russia still holds 6,6% of world reserves amounting 79,5 thousand million barrels. Refineries in Russia are able to produce 5 491 thousand barrels a day what is still only 6,3% of the world capacities levering 15 081 thousand barrels a day.

What Russia's economy and people have had from this increased production and not insignificant energy wealth particularly oil reserves? *Graph 11* shows Russia's GDP per capita comparing to the same fact in other neighborhood East European countries. Low level among the smallest in the row with Belarus and Moldova shows that macro economy didn't gain much leaving people of Russia among the poorest in Europe.

Graph 11 :GDP per capita in Russia



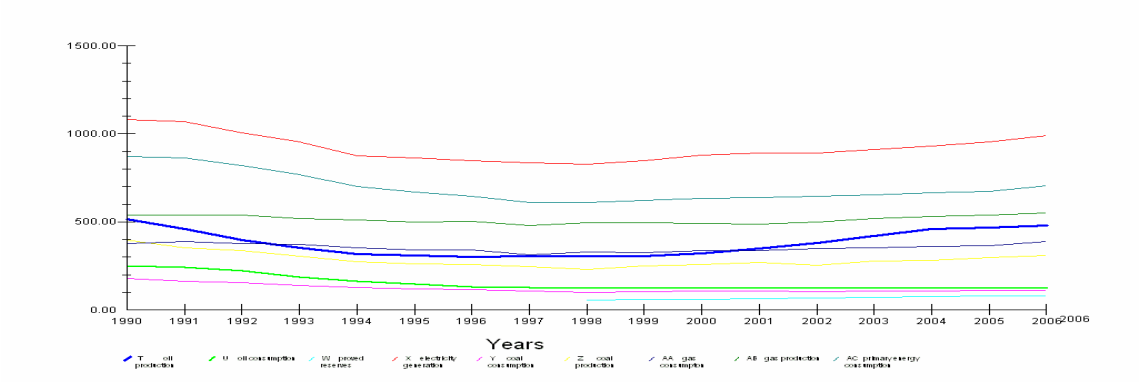
[9] Russias oil consumption in 2006 is 128,5 million tonnes

The other main macroeconomic factors observed (*Table 7*) shows high levels with decreasing trend inflation and real appreciation of the domestic currency.

Table 7 :Macroeconomic environment in Russia

	2001	2002	2003	2004	2005
Ruble inflation (CPI), %	18,8	15,1	12	11,7	10,9
Nominal appreciation / (devaluation) of the exchange rate (RUR/USD), %	-7	-5,5	7,3	5,8	-3,7
Real appreciation of the exchange rate (RUR/USD), %	11	9,2	20,8	18,5	6,9
Average exchange rate for the period, RUR/USD	29,17	31,35	30,69	28,82	28,29

Graph 12: Macroeconomic variables in Russia



The relation between the main macroeconomic variables and factors relating Russian oil industry statistics are presented by linear relation in ordinary least square method.(*Graph12*)

Positive relation is observed to be strong between the household consumption on expenditure and oil prices, final consumption, manufacturing, imports of goods and services with adverse relation noted to be strong between oil prices and exports of goods and services, government final consumption, gross capital formation and other activities.

*crude price= 01*CON + .97647*final consumption on expenditure + 9.7080*household consumption on expenditure -.0084485*government final consumption -.0041555*gross capital formation -.0098843*gross fixed capital formation -.015682*exports of goods and services + .0056235*imports of goods and services + .013575*manufacturing -.0040263*other activities -.040509*oil production*

Crude price increases with increases in oil production, but are negatively related to consumption.

Additional caution and highly likelihood of Dutch disease symptom in Russian society that states that natural resources wealth and increased production corroborated with huge profits from rising prices actually decreases manufacturing and future prospects of the country.(should be carefully examined and monitored by Russian Government). In other words that means necessity to redirect the Russian current policy in relaying on natural wealth solely and not developing agriculture, industrial production leaving Russia dependent on very aggressive store chains that placed their products worldwide. Time lost in not opening the large number of store chains filled with Russian commodities

is time won by foreign chains that aggressively markets their products. Not storing oil and inputting it in industry while knowing the exhaustible oil nature leaves the country to be dependent on imports for majority of products and with confused future.

Although Russia explores and enters into daring adventures in order to push the human and natural boundaries by exploring and bringing some good revealing news, it current economic policy of exporting and not producing leads Russia into dead end. The second huge mistake is done by constant tax rule uncertainties and payment made by oil companies are not allocated transparently in some other energy sources like wind, solar, geothermal, tidal, hydro etc…

*crude price = 1.4848*CON + .12004*oil production -.16250*oil consumption*

The following equation stresses the oil pice dependence on the past values (lagged value) that is strongly positively related to current future levels.

*Oil prices = .50601*B(-1) -2.4226*CON + .084779*oil production -.11461*oil consumption*

Negative intercept value implies very low level of GDP per capita in Russia that is very dependent on oil prices and production. Much smaller influence is observed on GDP per capita on oil production than on consumption. It can be explained by huge oil export whose profit is shared amonge a few, while consumption is implied by increased goods production and rised standard for many.

*GDP capita = -1348.3*CON + 82.3461*crude prices + 1.7677*oil production + 12.0411*oil consumption*

GDP per capita is positively related to gas production, electricity generation and coal consumption factors that all influence geatly standard of average Russian person.

*GDP capita = -13860.3*CON -4.2006*prim.energ.con + 34.3990*gas produc. -8.5061*gas con.- 40.1920*coal prod.+ 4.4487*elect.gen. + 83.7801*coal.con. + 103.0575*crude prices*

To increase and modernize refinery capacity should be one of the Russian goals but to rely the future GDP solely on oil prices could lead Russia into further material and moral degradation.

*GDP capita = -21952.7*CON + 7.8526*proved reserves + 4.9735*refinery capacity -60.2241*oil con. + 6.8161*oil prod. + 71.7677*crude prices*

Government consumption is positively related to the GDP and oil consumption but negatively with oil prices.

*Gen.gov.con = -40614.2*CON + .65617*GDP capita + 23.0278*oil con. -112.2935*crude prices - 17.5983*oil prod. + 71.5800*prim.energ.con.*

Final consumption is negatively effected by high oil prices but positively with primary energy consumption.

*Fin.con.on expen.= -37.3760*CON + .0023896*GDP capita -.039527*oil con. -.14660*crude prices - .039262*oil prod. + .087754*prim.energ.con.*

*Household con. = 113.6996*CON -.0020253*GDP capita -.052628*oil con. + .24576*crude prices + .078333*oil prod. -.21155*prim.energy.con.*

Gross capital formation is directed toward oil industry capacity increase.

*Gross cap.form. = 88398.2*CON -1.9786*GDP capita -213.4183*oil con. + 142.3198*crude prices + 3.2949*oil.prod. -124.3761*gas.prod.*

*Gross fixed capital= 80326.0*CON -1.7393*GDP capita -187.4537*oil cons. + 126.4067*crude prices + 47.8651*oil prod. -114.0599*prim.energ.cons.*

Strong relation between the oil consumption and production with change in inventories is observed.

*Change in inventories = 4.50E+10*CON -1631789*GDP capita + 2.58E+08*oil cons. + 2.00E+08*crude prices + 6.15E+07*oil prod. -1.56E+08*prim.energ.con*

Exports of goods is related to high oil prices and energy is the main source of export trade.

*Exports of goods/s. = 18396.6*CON -.11823*GDP capita + 129.4800*oil cons. + 28.2829*crude prices + 13.7394*oil prod. -1.8060*prim.energy.con.*

Import rises with the GDP increase but is inversely related to crude prices.

*Imports goods/s. = -61439.5*CON + 1.4469*GDP capita -24.2427*oil cons. -142.1914*crude price - 51.8519*oil prod. + 130.7914*prim.energ.prod.*

Agriculture, hunting, forestry, mining, utilities and manufacturing are positively related to the GDP per capita but not related to the oil industry sector.

*Agriculture, hunting, forestry = -1.58E+11*CON + 3479210*GDP capita -3.47E+07*oil cons. - 3.44E+08*crude prices -1.28E+08*oil prod. + 3.28E+08*prim.energy.cons.*

*Mining,manuf,utilities = -61403.0*CON + 1.4720*GDP capita -30.3963*oil cons. -142.4551*crude prices - 53.3615*oil prod. + 132.7528*prim.energy.cons.*

*Manufacturing = -51070.1*CON + .95953*GDP capita + 27.4726*oil cons. -126.1906*crude prices - 30.5165*oil prod. + 93.9817*prim.energy.cons.*

*Construction = -1.23Household cons.exp.+11*CON + 3422503*GDP capita -1.44E+08*oil.cons. - 3.25E+08*crude prices -1.19E+08*oil prod. + 2.89E+08*prim.energy.cons.*

Trade, transport and storage are not related to the GDP per capita, while although GDP is rising, the trade is mostly related to the energy export.

*Wholesale, trade= 86231.2*CON -1.9508*GDP capita -185.4004*oilcons. + 142.8935*crude prices + 52.7457*oil prod. -126.1570*primary.energy cons.*

*Transport,storage, = -1.37E+10*CON -1467613*GDP capita + 2.73Household cons.+08*oil cons. + 1.71E+08*crude prices + 8131594*oil prod. -3.58E+07*prim.energy cons.*

Primary energy consumption is mostly related to the coal and gas consumption and is not significantly related to the oil prices.

*Prim.energ.cons. = 462.7854*CON -.30646*crude prices + .0043918*GDP capita +.78209*coal cons. + 1.1815*gas cons. -.057492*refin. consum.*

Amonge the most significant oil companies that operates in Russsia as well as worldwide are Lukoil, Rosneft,Transneft and TNK-BP and some basic operating results are shown as follows.

4.1.1 Lukoil

Very high level of proved oil reserves 20,8 % inland, production 18,36 % inland and refinery output 18,75% inland (*Table 8*) makes Lukoil one of the largest oil conglomerates in Russia and significant energy subject in the world. Although the majority of Lukoil production is directed toward export it is valuable to examine its influence on the local macro economy in the periods of high oil prices.

Table 8 :Lukoil's business data in year 2005

	2005	
	Internationally %	Inland %
Proved oil reserves	1,34	20,8
Proved gas reserves	0,4	1,3
Proved hydrocarbon reserves	0,9	5,4
Oil production	2,21	18,36
Gas production	0,27	0,89
Hydrocarbon production	1,53	9,27
Refining capacities	1,37	15,5
Refinery throughputs	1,29	18,05
Production oil wells in country		17,4
Oil exports		18,94
Petroleum product exports		17,21

Source: lukoil.com

More than half of the all reserves amounted 29 319 mil are proved out of which 36% are (8572) developed and 19% undeveloped sites situated largely in Western Siberia (8572), Urals (2170) Volga region (468) and Timina Pechora (3833). (*Table 9*)

Lukoil produced in 2005 significant amount of 90 158 thous.ton[10] out of which majority is produced in country that is 619 mil ton barrels.

Table 9 :Lukoil's reserves

	2005 mil ton	**%**
Proved	16114	0,55
Developed	10583	0,36
Undeveloped	5531	0,19
Probable	8869	0,30
Possible	4336	0,15
Total	29319	1,00
Total Proved Reserves	**16114**	**%**
Russia	15500	0,96
Western Siberia	8572	0,53
Urals	2170	0,13
Volga	468	0,03
including Caspian	183	0,01
Timan-Pechora	3833	0,24
Bolshekhetskaya Depression	203	0,01
Other	254	0,02
International	614	0,04

[10] 664 mil ton barrels that is 247 thousand tons per day ;1820 thousand barrels per day in 2005

Catalalytic Hydro treating and vacuum distillations (*Table 10*) are the most used production operations in refineries in Nizhny Novogord and Burgas.

Table 10:Refinari's production

	Crude	Vacuum[11] distillation	Coking[12]	Thermal operations	Catalytic cracking[13]	Catalytic[14] reforming	Catalytic hydrocracking[15]	Catalytic Hydrotreating
Perm	244,2	109,2	15,8	–	13	28,7	64,8	143
Volgograd	217,7	95,2	23,9	–	–	10,1	–	74,5
Nizhny Novgorod	304,1	127	–	–	–	47,1	–	150,1
Ukhta	75,3	18,1	–	–	–	9,1	–	28,7
Burgas	216,9	78	–	29,8	33,4	14,4	–	101,8
Ploiesti	49,3	21,8	10,3	–	18,5	12	–	50,7
Odessa	73	20	–	–	–	10,1	–	44,9
Total	1180,5	469,3	50	29,8	64,9	131,5	64,8	593,7

Source: lukoil.com

Sulphur and hydrogen are the significant products accompanied by bitumen, lubricants, aromatics production in Lukoil refineries across Russia (*Table 11*). Since the 2003 diesel fuel production raised significantly ahead of fuel oil. These products are produced in front of motor gasoline, heating oil, bitumen, lubricants, ship oil, and coke. (*Graph 13*)

Table 11: Production capacity th barrels per day Lukoils Refineries

Production capacity , th. barrels per day	Alkylation[16]	Aromatics	Isomerization[17]	Lubricants	Oxygenate	Hydrogen, mcf per day	Sulfur, tons per day	Bitumen
Perm	–	6,7	–	9,4	–	67,8	213,7	12,1
Volgograd	–	7,8	–	8,9	–	62,3	111,8	4,2
Nizhny Novgorod	–	–	11,8	4,5	–	–	–	20,7
Ukhta	–	–	–	–	–	11,9	11	4,4
Burgas	5,1	3,6	–	–	1,9	17,9	160,6	4,3
Ploiesti	–	–	3,5	–	–	4,6	34,2	–
Odessa	–	–	3,2	–	–	–	21,1	3,5
Total	5,1	18,1	18,5	22,8	1,9	164,5	552,4	49,2

Source: lukoil.com

[11] Vacuum Distillation-heavy crude residue(„bottoms")from teh atmospheric column is further separated using a lower pressure distillation process.Means to lower the boiling points of the fractions and permit separation at lower temperatures,without decomposition and excessive coke formation

[12] Coking-Thermal noncatalytic cracking process that converts low value oils to higher value gasoline,gas oils and marketable coke. Residual fuel from vacuum distillation column is typical feedstock.

[13] Catalytic Cracking-A central process in refining where heavy gas oil range feeds are subjected to heat in the presence of catalyst and large molecules crack into smaller molecules in the gasoline and surrounding ranges.

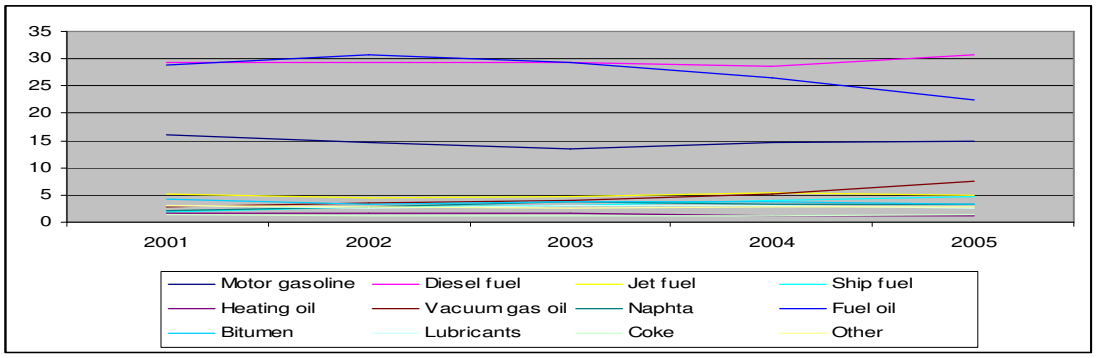
[14] Catalytic Reforming-The process wherby naphthas are aganged chemically to increase their octane numbers.Octane numbers are measures of whether a gasoline will knock in an engine.The higher the octane number,the more resistance to pre or self ignition.

[15] Catalytic Hydrocracking-Liek cracking used to produce blending stocks for gasoline and other fuels from heavy feedstocks.Introduction of hydrogen in addition to a ccatalyst allows the cracking reacction to proceed at lower temperatures than in catalytic cracking.although pressures are much higher

[16] Alkylation-Important process to upgrade light olefins to high value gasoline components.Used to combine small molecules into large molecules to produce a higher octane product for blending with gasoline.

[17] Isomerization-Process used to produce compounds with high octane for blending into gasoline pool.Also used to produce isobutene an important feedstock for alkylation

Graph 13: Lukoil's production



In addition to basic production data it is valuable to examine the financial statements and learn something more about company. In 2005 crude oil sales amounted 46 588 thousand tons what is 123% more comparing it to 2001 (38.009) out of which 98,5% went to export and sales on international markets. In dollar terms it means revenue of 19.487 million dollars gained 333% more than it was in 2001 (4 943 mil $). (*Table 12*)

Table 12:Lukoil's financial data

Crude oil sales	**Crude oil sales**	**Crude oil sales**
	2005 mil USD	***2005 thousand tons***
Export and sales on international markets	16367	45916
Including export and sales to CIS	778	3254
Domestic sales	120	672
Total	16487	46588

Source:lukoil.com

From the Consolidated Income Statement it is further to establish that sales increased 415% in four years period while net income jumped to 305% up. (*Table 13*)

Table 13:Consolidated Income Statements, mln USD

	2001	**2005**	**2005/2001 %**
Sales (including excise and export tariffs)	13426	55774	415,417846
Total revenues	13562	56215	414,5037605
Cost of purchased crude oil and petroleum products	-2087	-19398	929,4681361
Net income	2109	6443	305,5002371

Source:lukoil.com

Major Balance Sheet positions doubled leaving the current liabilities under control that only increased 158% making shareholders equity to rise for 254%. (*Table 14*)

Table 14:Balance Sheet Data

	2001	2005	2005/2001 %
Total current assets	6.094,00	12.497,00	205,0705612
Total assets	17.109,00	40.345,00	235,8115612
Total current liabilities	3.692,00	5.836,00	158,071506
Total liabilities	6.590,00	13.541,00	205,477997
Total stockholders' equity	10.519,00	26.804,00	254,8150965
Total liabilities and stockholders' equity	17.109,00	40.345,00	235,8115612

Source:lukoil.com

Very high percentage of return on equity 27% and assets 18%, current ratio of 2,14 and P/E of 7,9 makes Lukoil very interesting to potential share buyers who could be confident with small debt/capital ratio of 15%, market capitalization of 50 523 mil.USD , future prospective of oil prices, demand for crude and products to gain significant profit out of company. (*Table 15*)

Table 15: Financial ratios in 2005, Lukoil

	2005		2005
Market capitalization, mln USD	50523	EBITDA interest coverage	37,8
Long-term debt, mln USD	4137	Free cash flow, mln USD	1920
Short-term debt, mln USD	853	Sales, mln USD	55774
Cash and cash equivalents, mln USD	1650	Assets, mln USD	40345
EV, mln USD	53863	Asset turnover, days	264
EV/EBITDA	5,18	Accounts payable turnover, days	14
EV/DACF	8,5	Accounts receivable turnover, days	36
Share price, USD	59,4	Sales, mln USD	55774
Basic earnings per share, USD	7,91	Operating income, mln USD	9388
P/E	7,51	Income before tax, mln USD	8910
Market capitalization to sales	0,91	Net income, mln USD	6443
Market capitalization to assets	1,25	Operating margin, %	16,8
Market capitalization to equity	1,88	Pretax margin, %	16
Cash ratio	0,28	Net margin, %	11,6
Quick ratio	1,25	EBIT, mln USD	9089
Current ratio	2,14	Return on equity, %	27,1
Assets to equity	1,51	Return on assets, %	18,4
Total debt to EBITDA, %	48	ROACE, %	23,3
Total debt to capital, %	15,7	Total debt to equity, %	18,6

Source:lukoil.com

4.1.2 Rosneft

The second important Russian oil company Rosneft also managed to increase its business results having in the last two years 158% increase in current assets, 132% increase in current liabilities and revenue 138% higher comparing to a year before.(*Table 16*)

Table 16: Rosneft main Financial Statement results

mil USD	**2006**	**2005**	**2006/2005 %**
Total current assets	9.462,00	5.963,00	158,6785
Non current assets	37.328,00	24.053,00	155,1906
Total assets	46.790,00	30.016,00	155,8835
Total current liabilities	10.934,00	8.245,00	132,6137
Non current liabilities	13.756,00	12.478,00	110,242
Revenue	33.099,00	23.863,00	138,7043
Cost expenditure	27.495,00	18.341,00	149,91
Operating income	5.604,00	5.522,00	101,485
Income before tax	4.165,00	6.214,00	67,02607
Net income	3.533,00	4.159,00	84,9483
EPS	0,37	0,46	80,43478

Source:rosneft.com

Although net cash from operating activities decreased high oil prices and revenue encouraged huge investment activities. *(Table 17)*

Table 17:Rosnefts Cash flow

mil. USD	**2006**	**2005**	**2006/2005 %**
Net cash by operating activities	2.593,00	2.941,00	88,16729
Net cash of investing activities	6.516,00	2.322,00	280,6202
Cash and cash at end	505,00	1.173,00	43,052
Cash paid for income tax	2.157,00	1.636,00	131,846

Source:rosneft.com

The large cash outflow in 2006 comparing it to a year before points us to examine further reason for 131% of increase. It is established that this increase was due to revenue and income taxes leaving the production related taxes on the level lower than a year before. This could point to smaller extraction and revenue hiked by sales prices formed on international market. (*Table 18*)

Table 18:Taxes and oil sales export duties Rosneft

Taxes and duties / mil USD	2006	2005	100,0499
Mineral extraction tax	1.156,00	1.158,00	99,82729
Value added tax	615,00	776,00	79,25258
Excise tax	73,00	62,00	117,7419
Pern Income Tax	15,00	19,00	78,94737
Property tax	36,00	18,00	200
Income tax	454,00	644,00	70,49689
Other	123,00	2.810,00	4,377224
Revenue related tax	9.763,00	5.322,00	183,4461
Petrol sales export duty	1.377,00	942,00	146,1783
Current Income TAX	2.385,00	1.688,00	141,2915
Deffered income	- 1.845,00	79,00	-2335,44

Source:rosneft.com

4.1.3 Transneft

Transneft operates with the 20.561 mil $ assets what presents increase of 137% comparing to the year before. Although sales and profit before tax has increased significantly this money was largely spent on investment activities and further Transneft production capacities. *(Table 19)*

Table 19: Transneft Financial Statement results

mil USD	**2006**	**2005**	**2006/2005 %**
Non current assets	17.836,36	12.060,57	147,89
Current assets	2.725,11	2.879,64	94,63
Total assets	20.561,46	14.940,21	137,62
Current liabilities	6.806,61	3.102,18	219,41
Total liabilities	20.561,46	14.940,21	137,62
Sales	7.229,54	6.417,75	112,65
Operative profit	2.929,54	2.684,86	109,11
Profit before tax	2.886,75	2.621,43	110,12
Net cash from operating activ.	3.700,68	3.031,39	122,08
Net cash in invest. activities	5.340,50	2.368,79	225,45

Source:transneft.ru

4.1.4 TNK BP

Excellent relation between British and Russian companies resulted in TNK BP team that successfully drives in energy water having revenue of 32 114 mil USD, and net income at levels of 6.404,0mil USD *(Table 20)*. In addition to that TNK could be proud to have oil production at 1,9 mln boe/d, be among Russia's top three and world top ten private sector oil producer. Company has significant potential in Greenfield and gas having 600 rigs operating 190 licensed areas and possibility to transport oil having 28.000 km of piplines.With five refineries in Russia and Ukraine it is among major retailers of fuels in these two large countries. Current company aims are directed toward increase of production and reserves, adding a new world class technologies, giving the better governance and remain good Russian corporate citizen.

Table 20 :TNK BP Financial data

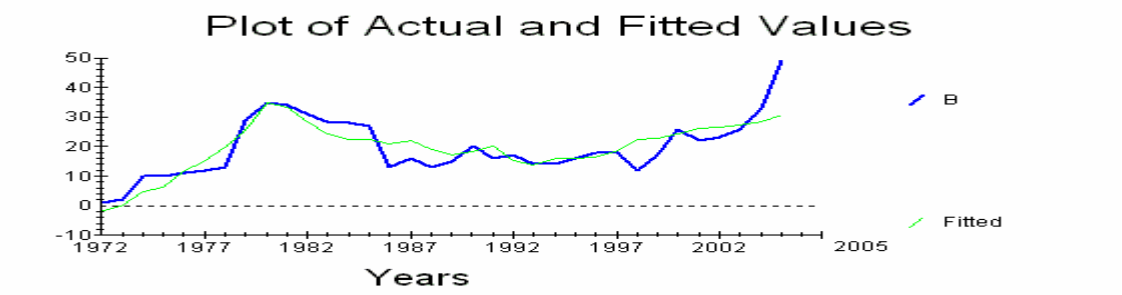
mil USD	**2006**
Total asset	21.710,00
Current asset	9.531,00
Current liability	8.252,00
Total liability	9.615,00
Shareholders equity	11.488,00
Sales	32.114
Export duty	- 9.327,00
Export tax	- 621,00
Taxes other than income	6.493,00
Income before income taxes	8.693,00
Income tax	2.115,00
Net income	6.404,00
Net income per share	0,41

Source:tnk-oil.ru

4.2. USA

USA was producing a 311, 8 million tones [18] oil for 0,5% less comparing a year before but holds still 8 % of the world production what is 2,84 more than EU 27 but half less than production in the Former Soviet Union. With only 2,5% of the world reserves amounted 29,9 thousand million barrels, USA still holds with its refinery capacity of 17 455 thousand million barrels a day refinery thru puts of 15 240 thousand barrels a day what is 20% of total.[19]

But after what is USA the most known is huge amount of consumption equaling 938,8 million tones[20] contributing to the 24,1 % of the world consumption. In comparison with EU 27 it is 5,5 % more, and 6% less than consumption in the Former Soviet Union countries.



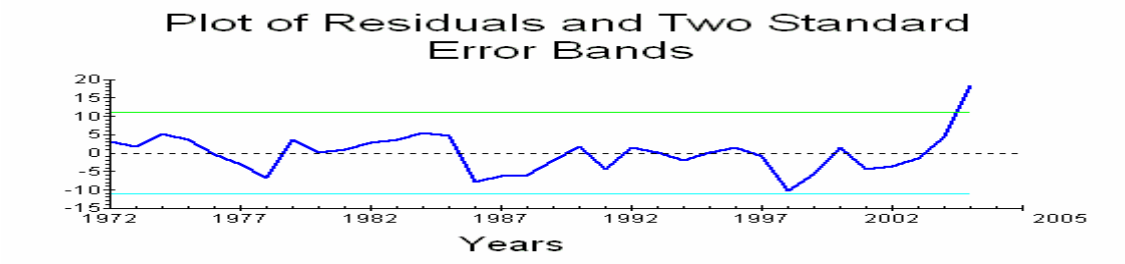
An attempt to establish relationship between the main economic variables in the USA and oil prices is not satisfying while some other important variables as the new economies demand, supply disturbances, and lack of refinery capacity is not taken into consideration. Graph shows fitted equation lagging behind oil prices and its weakening relation after 2002. Equations that follows show that 1% rise in refining capacity in USA cause slightly higher oil prices what can be explained as new investment costs partly incorporated into crude prices, production increase also adds to oil prices in the way that with the high oil prices USA is forced to use more fields locally. Negative relation between the 1% rise in consumption that lowers the oil prices makes this exhaustible resource to behave as normal good what is partly explained by strong relation with Saudis and trying to stronger its position in the oil producing countries (Near East, Caspian Region, Iraq etc) .

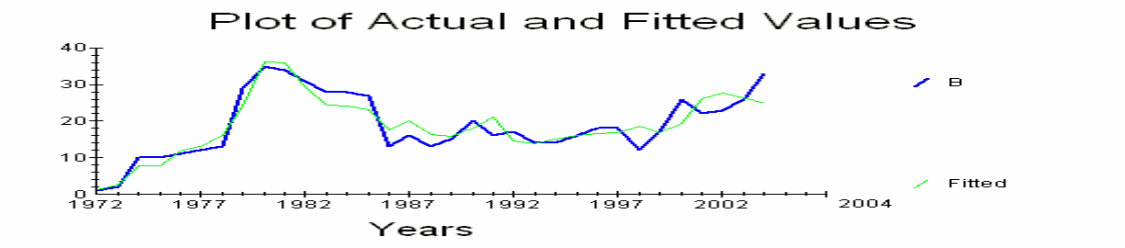
*Oil price = -115.3644*CON + .9610E-3*gdp per capita + .092073*oil production -.052071*oil consumption + .0072953*refinary capacity*

*Oil price = -104.2061*CON + .6657E-3*gdp per capita + .083458*oil production -.081832*oil consumption + .0071921*refinery capacity + .012181*primary energy consumption*

*Oil price = -126.3269*CON + .2819E-3*gdp per capita + .093909*oil production -.14802*oil consumption + .0073497*refinery capacity + .053221*primary energy consumption -1.0398*value added*

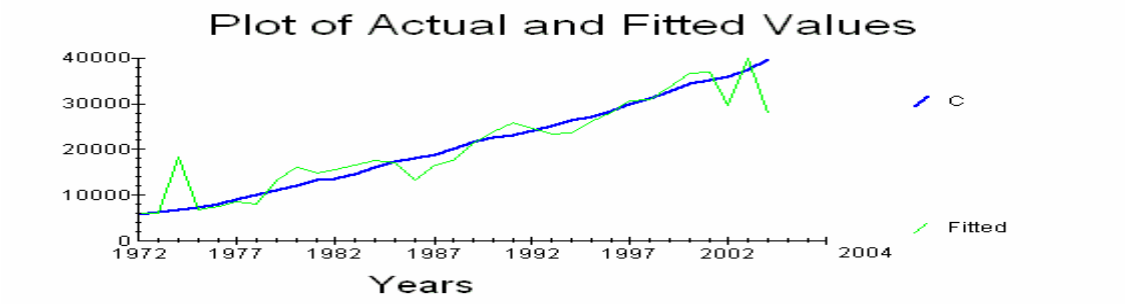
[18] USA in 2006 produced 6.871 thousand barrels per day
[19] World refinary throughputs was in 2006 74 878 thousand barrels a day
[20] Consumption in USA in 2006 was 20 589 thousand barrels a day

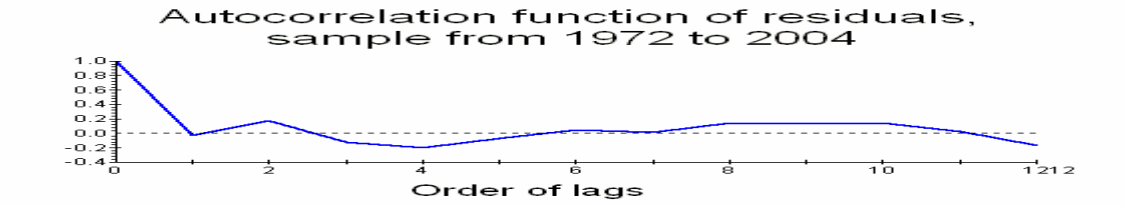




GDP per capita in USA rises strongly with final consumption, household consumption, gross capital formation and exports of goods and services. Rise in imports of goods and services and usage of natural resources as well as decreasing inventories negatively affects GDP.

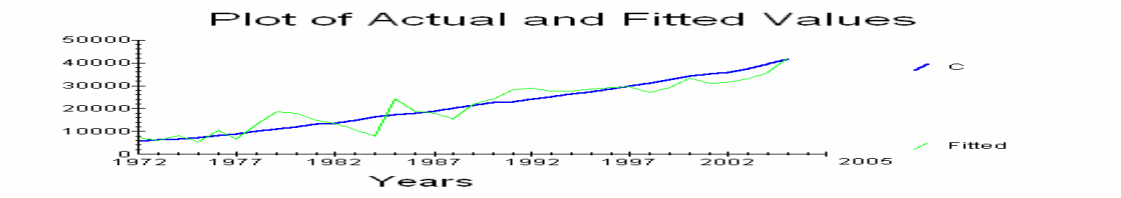
*Gdp per capita = 4198.7*CON + 272.4138*oil prices + 1997.2*final consumption + 1467.4*household consumption + 273.3227*govern.consumption + 567.2107*gross capital formation - 215.6209*gross fixed capital formation -.1136E-6*changes in inventories + 261.0094*exports of goods and services -282.1328*imports of goods and services -62.4768*gdp by expenditure -7.9661*agric,hunting,fishing*

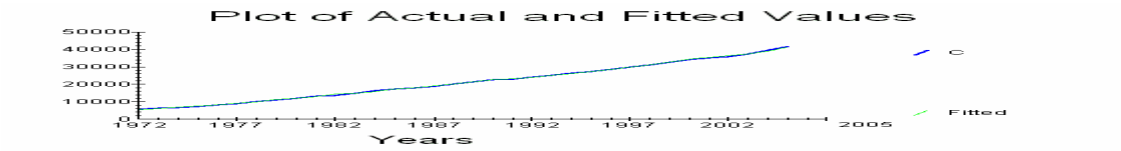




Positive relation between the GDP is established by regressing it to its past values, transport, storage, manufacturing, mining, wholesale and trade.

*Gdp per capita =1.0307*gdp per capita(-1) -803.8078*CON + 19.4543*crude prices + 29.6196*agriculture + 14.2512*mining, utilities + .32710*manufacturing + 54.1734*construction + .20090*wholesale, trade + 72.7785*transport storage + 66.9508*other activities*





The world known oil companies based in USA are Chevron Texaco, Exxon Mobile, Conoco Phillips, Valero, Occidental, Andarco and many others.

4.2.1. Chevron

Chevron is one of the largest USA companies with net production of crude amounting 1.732 thousands of barrels per day, refinery input of 1.989 thousand barrels per day and sales of refined products 3.621 thousand barrels per day in 2006. Its performance is interesting to point to if we know that Chevrons net proved oil equivalent reserves levels 8.612 millions of barrels and employees 55 882 people. How two years in a row of rise in oil prices effects companies performance is clear from the *Table 21.*

Increase in crude prices brought the company 121% rise in net income, increase in total assets and enriched stockholders by raising the shareholders equity for 109%, creating the opportunity to sell the stock whose prices rose by 129%. Like many Russian counterparts and Chevron invested its gains into capital and exploratory expenditures that only in one year rose to 150%.

Table 21 :Chevron's Financial data

	2006	2005	2006/2005 %
Net income	17.138,00	14.099,00	121,5547202
Sales and other operating revenues	204.892,00	193.641,00	105,8102365
Capital and exploratory expenditures	16.611,00	11.063,00	150,1491458
Total assets at year end	132.628,00	125.833,00	105,4000143
Total debt at year end	9.838,00	12.870,00	76,44133644
Stockholders equity at year end	68.935,00	62.676,00	109,9862786
Net income diluted	7,80	6,54	119,266055
Cash dividents	2,01	1,75	114,8571429
Common stock price at year end	73,53	56,77	129,5226352
Return on capital employed	22,60	21,90	103,196347
Return on average stockholders equity	26,00	26,10	99,61685824
Total debt to total debt plus equity ratio	12,50	17,00	73,52941176
USA income tax	3.609,00	2.435,00	148,2135524
International income tax	11.229,00	8.663,00	129,6202239
Taxes other than on income	20.883,00	20.782,00	100,4859975
Research and developments	468,00	316,00	148,1012658
Stock repurchase	5.000,00	3.000,00	166,6666667

Source: chevrontexaco.com

4.2.2. Exxon Mobil

Exxon Mobil is another important USA oil company with revenue increase, following oil price hike by 187% in the five year period, gaining the rise in the net income for the same 2006/2002 time by 344%. The major rise is observed in cash dividends to shareholders , cash flow from assets sales and decreases in the assets at the year end points us on the possible problems that are additionally stressed by debt increase for 152%. (*Table 22)*

Table 22: Exxon Mobile Financial data

	2006	2005	2002	2006/2002
Sales and other revenues	365.467,00	358.955,00	200.949	181,87
Net income	39.500,00	36.130,00	11460	344,68
Cash flow	52.366,00	54.174,00	24061	217,64
Cash flow from operations and assets sales	19.855,00	17.699,00	13955	142,28
Capital and exploration expenditures	7.628,00	7.185,00	6217	122,70
Cash dividends to exxon mobil shareholders	29.558,00	18.221,00	4798	616,05
Common stock purchases	733,00	712,00	631	116,16
Research and development costs	28.244,00	28.671,00	7.229	390,70
Cash and cash equivalent at year end	219.015,00	208.335,00	152.644	143,48
Total assets at year end	8.347,00	7.991,00	10.748	77,66
Total debt at year end	113.844,00	111.186,00	74.597	152,61
Shareholders equity at year end	122.573,00	116.961,00	88.342	138,75
Average capital employed Share price at year end	76,63	56,17	34,94	219,32
Regular employees at year end	82,10	83,70	92,5	88,76
Net income per common shares	6,68	5,76	1,69	395,27
Net income per common shares assuming dilution	6,62	5,71	1,68	394,05
Return on average capital employed	32,20	31,30	13,5	238,52
Net income to average shareholders equity	35,10	33,90	15,5	226,45
Debt to capital	6,60	6,50	12,2	54,10
Net debt to capital	- 20,40	- 22,00	4,4	- 463,64
Current assets to current liabilities	1,55	1,58	1,15	134,78

Source: exxonmobil.com

Exxon's aims are directed toward consistency in their shareholders focus and long term approach, integrity in business practices, operation and treating people. They would like to continue with strong discipline in investment decisions and execution of fundamental business strategies; to provide reliability in the quality of products in daily operations as well as in meeting commitments. Ingenuity in research, technology, applications and thinking are the main driving forces that stands behind the companies driving force.

4.2.3 Conoco Philips

This third largest integrated energy company in United States based on market capitalization and oil - gas proven reserves and production is Conoco Philips who is ,also, the second largest refiner in the country. In the broader terms company is sixth largest proved reserve holder and fifth largest refiner in in the world.

Conoco Philips performance is on the positive track with revenue rise of 102% and net income of 114% comparing the last two consecutive years.Conoco's policy of investing its cash produced flow from operating activities into investing upwards 272% confirming largely observed trend in oil companies worldwide. (*Table 23)* Although making its shareholders richer each year Conoco manages to decrease cost of taxes on income and other tax obligations.

Table 23 :Conoco Philips business results

mil USD	**2006**	**2005**	**2006/2005**
Revenues and other income	183.650,00	179.442,00	102,345
Taxes and other income taxes	18.187,00	18.356,00	99,07932
Total cost and expenses	160.190,00	159.817,00	100,2334
Income before taxes	28.333,00	23.547,00	120,3253
Net income	15.550,00	13.529,00	114,9383
Average common stocks	1.585.982,00	1.393.371,00	113,8234
Income per share of common stock	9,80	9,79	100,1124
Total assets	164.781,00	106.999,00	154,0024
Total equity	82.646,00	52.731,00	156,7313
Cash flow from operating activities	21.516,00	17.628,00	122,0558
Cash flow from investing activities	- 29.993,00	- 11.016,00	272,2676

Source:conocophilips.com

The company is known for technological expertise in exploration, production reservoir management and exploitation, 3- D seismic technology, and high grade petroleum coke upgrading and sulfur removal. By investing in several emerging businesses: power generation, carbon to liquids, and technology solutions such as sulfur removal; alternative energy and programs, involving heavy oils, biofuels and alternative energy sources it provides current and future growth opportunities.

In 2006 Conoco expensed environmental costs in the amount of $912mil what is 0,4% of the sales or 5,86% of the net sales. Capitalized environmental costs were $1.118 mil or 0,6% of revenue and 7%of total net income largely used in proved products to meet regulatory aims and for remediation of sites.

4.2.4 Valero

Valero managed to benefit largely from oil price increases by rising its net income by 152% in the two consecutive years. With the increase in current asset of 128% and slightly rise in total liabilities it increased dividends per common shares for 157 % and rose earnings per common share for 137% . (*Table 24)*

Table 24:Valeros Financial results

	2006	2005	2006/2005
Current assets	10.760,00	8.346,00	128,9240355
Total assets	37.753,00	32.798,00	115,1076285
Total liabilities	13.479,00	12.531,00	107,5652382
Shareholders equity	18.605,00	15.050,00	123,6212625
Total liabilities and equity	37.753,00	32.798,00	115,1076285
Operating revenues	91.833,00	82.162,00	111,7706482
Total cost and expenses	83.823,00	76.703,00	109,2825574
Operating income	8.010,00	5.459,00	146,7301704
Income tax expense	2.726,00	1.697,00	160,6364172
Net income	5.463,00	3.590,00	152,1727019
Earnings per common share	8,94	6,51	137,3271889
Weighted average common shares	611,00	549,00	111,2932605
Dividends per common share	0,30	0,19	157,8947368
Cash flow from operating activities	6.312,00	5.850,00	107,8974359
Cash flow from investing activities	2.971,00	4.900,00	60,63265306

Source:valero.com

Valero's started its career from the sketch from buying one refinery to being the largest refiner in North America with combined throughput capacity of 3,3 million barrels per day. Having the most complex refining system gives Valero additional advantage over competitors. It has more catalytic cracking capacity then some refining company's total converting capacity and this also stand for coking capacity. Soar crude oil and residual fuels make up approximately 60% of Valero's raw materials input which provide tremendous cost advantage. As the world moves toward cleaner fuel standards the demand for easy to process light sweet is rising. To stress future financial potentials is to say that $1difference between sweet and sour crude brings company $500 million per year in operating income.

4.2.5 Occidental

Oil price hike in the last couple of years had beneficial effects on the Occidental another significant oil company in USA. Rise in net income for 422% was a result of increased sale more than 240% and total assets by 195%. By lowering debt to 58%, rising investment for 250% Occidental cheered its shareholders by rising dividends to 160% and equity to 303%. *(Table 25)*

Table 25:Occidental's results

mil USD	2006	2005	2002	2006/2002
Net sales	17.661,00	14.597,00	7149	247,0415
Net income	4.182,00	5.281,00	989	422,8514
Basic earnings per share	5,20	6,25	1,55	335,4839
Total assets	32.355,00	26.108,00	16548	195,5221
Long term debt	2.619,00	2.873,00	4452	58,82749
Stockholders equity	19.184,00	15.032,00	6318	303,6404
Market capitalization	42.515,00	32.129,00	10750	395,4884
Cash by operating activities	6.353,00	5.337,00	2100	302,5238
Capital expenditures	- 3.005,00	- 2.324,00	-1145	262,4454
Cash used by all other investing activities	- 1.378,00	- 837,00	-551	250,0907
Dividends per common share	0,80	0,65	0,5	160

Source:occidental.com

Oxy like to present itself as a world leader in oil and gas exploration and production and major N.American chemical manufacturer. OxyChemical Corporation manufactures vinyl's and performance chemicals in addition to chlorine and soda –the building blocks for such indispensable products as pharmaceuticals, water disinfections, detergents and others. Worldwide is committed to safeguarding the environmental protecting the safety and health of employees and neighboring communities and upholding the highest standards of social responsibilities.

4.2.6 Andarco

The last but not least oil company originated from USA has also exhibited large progress in its financial performance data. Sales increased from 3 860 mil $ in 2002 to 7 101 mil $ in 2005 followed by 299% increase in net income lowering debt by 32%. *(Table 26)*

Table 26: Andarco's business results

mil USD	2002	2003	2004	2005
Sales	3 860	5 122	6 067	7 101
EBITDA	3 505	4 328	5 358	
Net income	825	1 287	1 601	2 466
Total debt	5 471	5 058	3 840	3 677

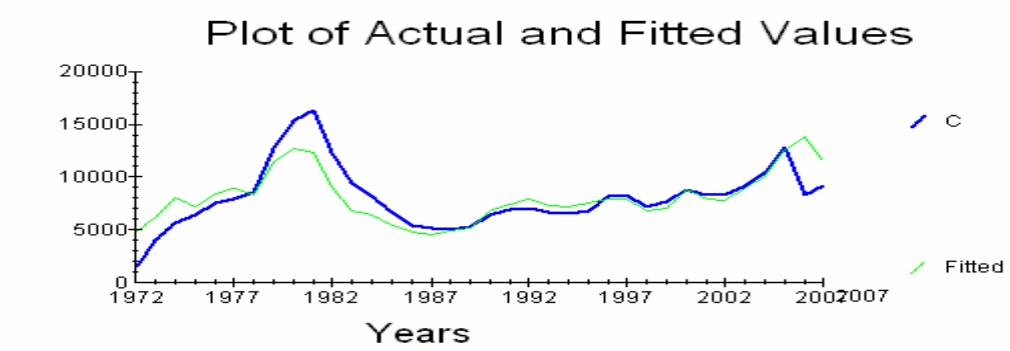
Source:andarco.com

4.3. Saudi Arabia

The worlds biggest producer Saudi Arabia made in 2006 10 859 thousands barrels[21] contributing to total world production with 13,1%. Percentage of total proven oil reserves is even bigger amounting 264,3 thousand million barrels or estimated 21,9 % of the total reserves.
All this wealth is largely spend outside the country leaving Saudi's only with 2005 thousand barrels daily consumption or totaling 2,4 % of world consumption. This amount correspond to total refinery capacities of 2 100 thousand barrels a day or refinery or 2,4 % in the world available capacities. Although there is strong increasing consumption trend of 6% in comparison to the year before and heading in front of all other countries in region where Iran is consuming 2% of total consumption, Kuwait 0,4%, United Arab Emirates 0,5% this fact point us further to look at the economic factors and investments made by these countries.

GDP per capita in Saudi Arabia is largely influenced by crude oil prices what is visible from the simple regression model, graph that follows and strong correlation between these two variables that amounts .58848.

*Gdp per capita = 5461.0*CON + 117.3476*crude prices*



In addition to oil prices oil consumption and refinery capacity, production further stronger GDP growth.

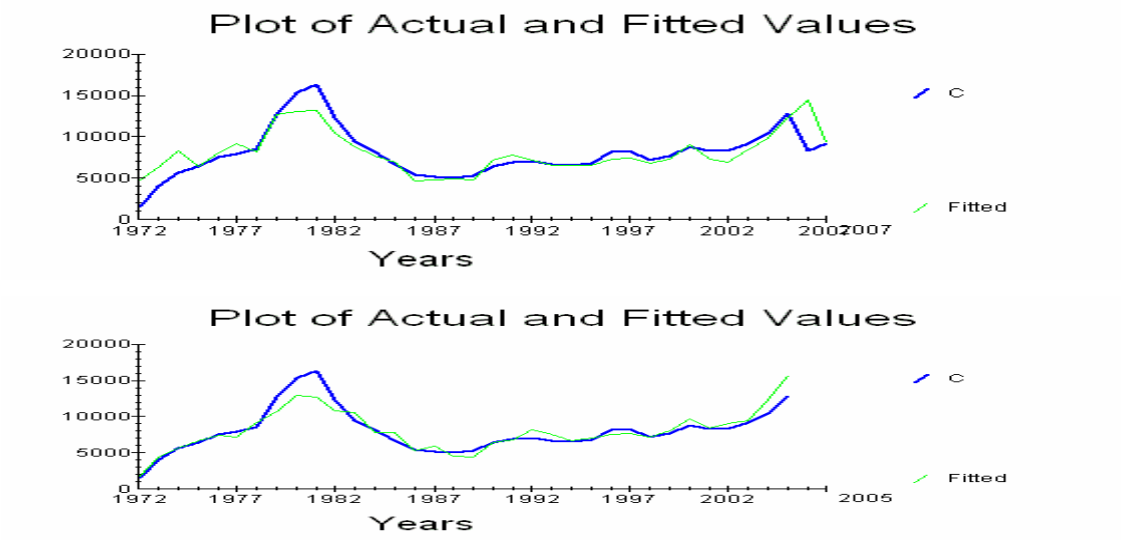
*Gdp per capita = -3252.4*CON + 169.8814*crude prices -199.6338*primary energy consumption + 16.3681*oil production + 320.1588*oil consumption + .45169*refinery capacity*

Further positive influence on the GDP is observed by increasing the final household and government consumption as well as capital formation. Negative influence is observed in import and changes in inventory what is to be expected, but suprisingly 1% rise in exports of goods negativelly influence GDP per capita. The explanation for this phenomena is the large discrepancy of wealth in Saudi Arabia where the rich owners and families don't share the weath with majority of nation and extra

[21] Saudi production in 2006 was 514,6 milion tonnes

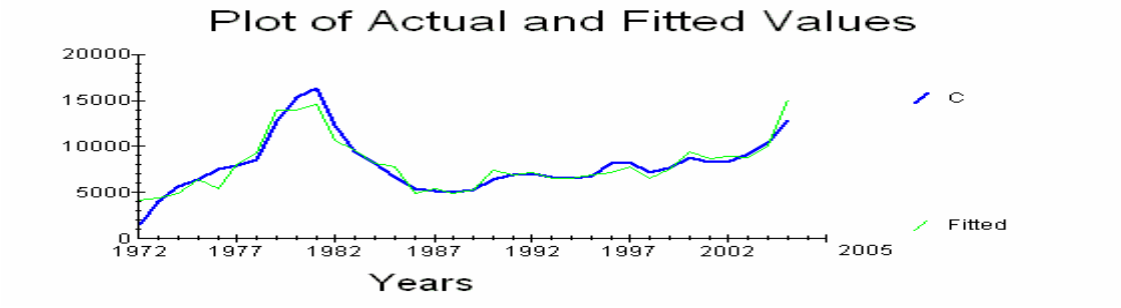
profits are invested in some glassy large non Arab style bulidings having for its purpose to attract western tourists (Dubai). While 70-ies of the 20-ieth century were years of huge public projects in all Arab countries the latest period brought much larger turn around toward private investments. Investing the money in irrigation, aggressive agriculture, more efficiently usage of oil treasure , increasing the quality of health service, eduation and social wealfare to whole population as well as attracting the tuorists with pearls of Arab arhitecture,culture and real values is the way where export could indeed , as should, positively relates to all in Saudi country.

*Gdp per capita = 5271.3*CON + 212.8628*crude price + .3114E-5*final consumption + .7637E-6*household consumption + .6217E-6*governm.consump. + .4304E-6*capital formation -.5925E-6*gross fixed capital formation -.5652E-6*changes in inventories -1.3931*exports of goods -.2789E-5*imports of g/s -2.9287*gdp by expenditure*



As was expected all economic activities influences positively the GDP per capita in Saudi Arabia and showing the way that Arab should follow in order to increase countries wealth to all.

*Gdp per capita = 3253.0*CON + 156.8125*crude pries + .2504E-5*agriculture, fishing + 2.1839*mining, utilities -.6312E-6*manufacturing + .5780E-6*construction + .5388E-6*wholesale - .5247E-6*transport, storage + .1838E-6*other activities -1.1842*value added*



The most strongly and best fitted relation of GDP is unfortunately explained by rise in crude prices and production, leaving the reverse relation to consumption.

*Gdp per capita = 805.9421*CON + 144.5727*crude prices + 15.9434*oil production -43.2437*oil consumption*

4.3.1. Saudi Aramco

The largest oil company in the country is Saudi Aramco that have in its possession amount of 259,9 billions barrels of recoverable crude oil and condensate. Rise in crude prices as well as increased demand worldwide brought 130% increase in crude oil production from 2002 to 2006 amounting in the last year 8,9 millions of barrels daily.[22]

With the total domestic refining capacity of 1.745.500 barrels per day, Saudi Aramco ownership in refining capacities stretches across national borders adding 1.945.000 bpd making the total of 3.690.500 bpd.

The majority of crude in 2006 (51,6%) refined products (54,4%) and NGL (52,9%) is exported to the Far East. The other large Saudi costumer is USA that imported 14,2% of crude, 4,3% products and 2,1% of NGL in 2006, the other significant Saudi markets are Europe, Mediterranean and other.

Although Saudi Aramco is rather shy as far as the financial data being published on web are concerned the increased crude production of 3.252.943 barrels out of which 78% was exported means revenues over 230 mil $ and increased shareholders wealth.

Saudi Aramco was for the 18th year in row by Petroleum Intelligence Weekly ranked as the number one oil company in the world. It is the most likely due to petroleum reserves, production capabilities, chemical and plastic production[23] and less toward comprehended description of business, environmental, social and other activities.

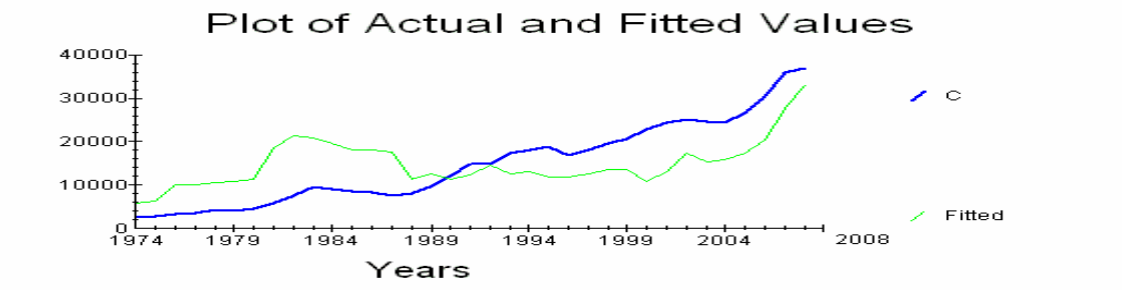
4.4 UK

Strong decline in production for over -9,6% amounting 1.636 thousand barrels[24] a day due to decreased production in North Sea reduced UK role in producing only 2% of the world crude. However, this amount largely satisfy the Britain needs for oil by consuming a little bit more than 1 781 thousand barrels[25] a day what is similar percentage in the world terms of 2,1%. The whole amount needed is good covered by refinery capacity of total 1.819 thousands barrels a day making useful capacity utilization of 98%. Insignificant oil reserves with only 0,3 % of world reserves with amount of 3,9 thousand million barrels partly explains Britain's determination in diversifying portfolios introducing environmentally friendly energy and its presents in Iraq.

[22] 3,25 billions of barrels annually
[23] Saudi negotiates with Down Chemicals company to establish the world lagest Chemical Company
[24] UK production in 2006 was 76,6 million tonnes
[25] UK consumption in 2006 was 82,2 milion tonnes

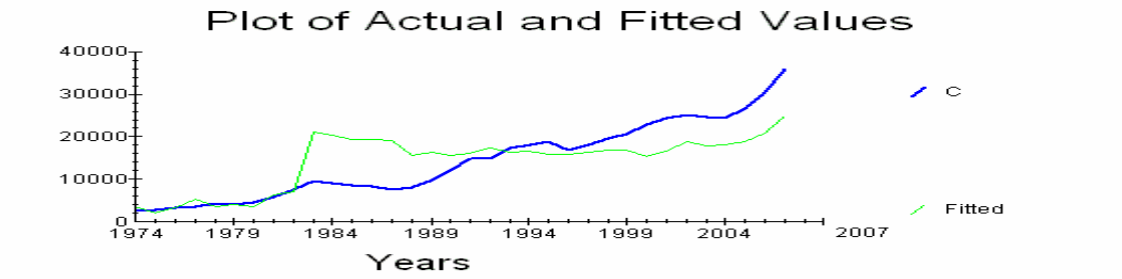
Although correlation between the GDP per capita and oil prices in Britain is rather high .5687 from the graph that follows periods of weakening relation from the 1989 to 2005 is observed and explained by North Sea decreased oil production.

*Gdp capita = 5479.3*CON + 452.8838*crude prices*



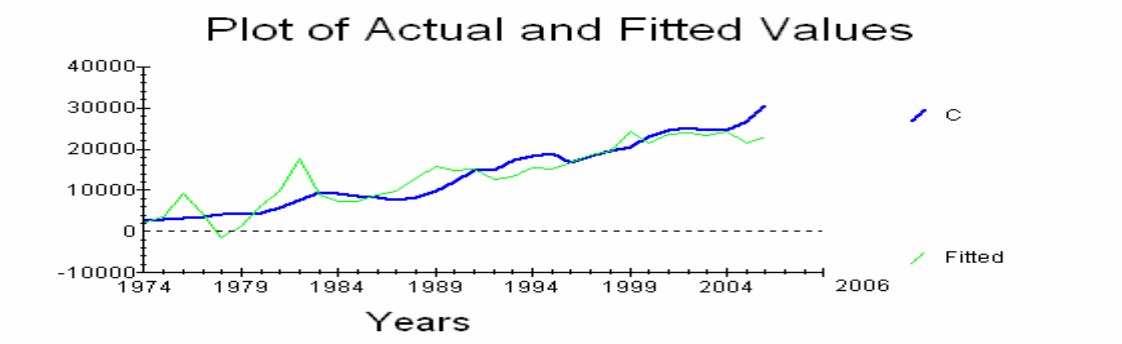
Negative relation between the rise in oil and primary energy consumption is noted also in Britain but this is weakly explained and energy has minor importants in Britain's wealth.

*Gdp capita = 12159.9*CON + 261.0748*crude prices -.4203E-6*oil consumption -.5508E-5*prim.energ.consumption + .4753E-5*oil cons.(-1) -.7017E-5*prim.energ.cons.(-1) -.3323E-5*oil prod. -.1639E-5*oil prod.(-1)*



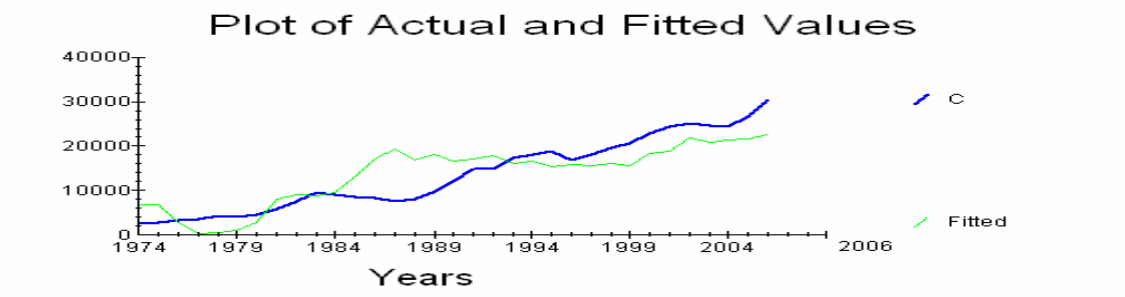
Positive relation between the GDP per capita and final, household and government consumption is positive and far better explains the GDP growth.

*Gdp capita = -96830.1*CON + 77.2228*crude prices + 26.4457*final cons ump. + 465.5236*household consum. + 116.3231*governm.cons.*



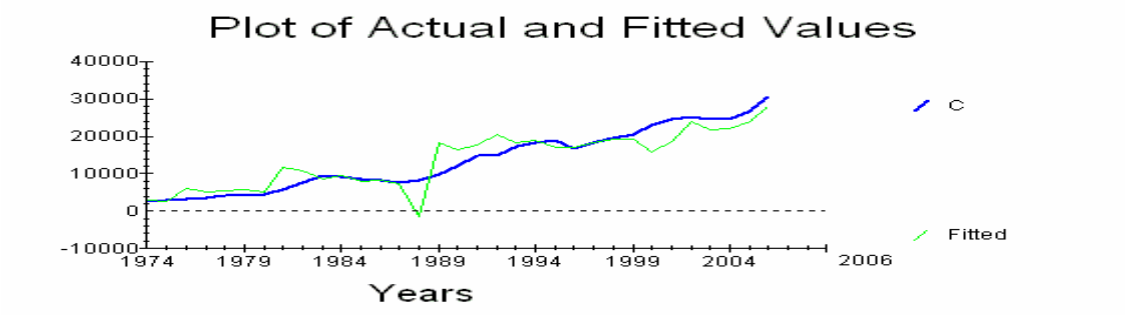
Negative relation between the changes in inventory and gross capital formation is observed and fitted regression weakens after 1993.

*Gdp capita = 41683.5*CON + 210.3232*crude prices + 47.3210*gross capital formation -16.1415*gross fixed capital form. -383.2910*changes in inventories*

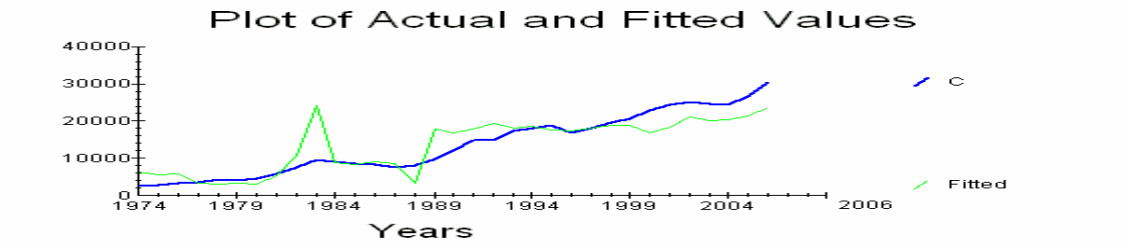


Situation of rising oil prices could adversely influence GDP by reducing export and import or reducing production that would normaly operate at the higher levels of capacitiy utilizations.

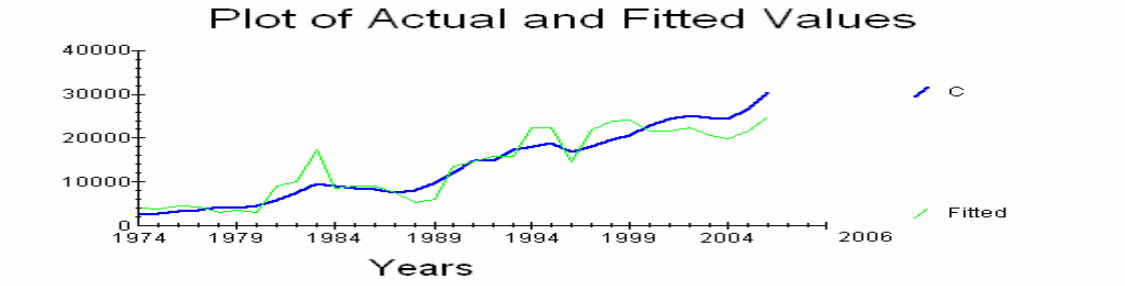
*Gdp capita = 9114.2*CON + 568.7254*crude prices -.93196*exports g/s -.46165*imports g/s - 21.0955*gdp by expenditures*



*Gdp capita = 12930.6*CON + 326.6298*crude prices -16.5716*agriculture, fishing -.2125E-6*mining + 6.3992*manufacturing -14.7526*construction*



*Gdp capita = 7654.7*CON + 164.5578*crude prices -818.8000*wholesale + .7585E-5*transport, storage*
*-5.4495*other activities -1.1552*value added*



4.4.1 BP

One of the most significant oil companies in Great Britain is British Petroleum. To establish how the favourable crude oil prices have influenced company's performance, data from the financial statements in the years 2002 and 2006 are compared. It is established ,once more, strong rise in sales to level of $265 906 thousand. what is 177 % increase comparing it to the 2002. Profit for the year arose significantly for 324% as well as taxation payments that amounted $12.331 thousand or 282% more comparing it to the base year(*Table 27*). It is worth saying that BP managed to decrease finance costs for 40%.

Table 27 : BP Income Statement data

For the year ended 31 December	2002	2006	2006/2002%
Sales and other operating revenues	149.674	265.906	177,6567741
Interest and other revenues	641	701	109,3603744
Total revenues	151.279	270.602	178,8761163
Gains on sale of businesses and fixed assets	2.933	3.714	126,6280259
Total revenues and other income	154.212	274.316	177,8823957
Purchases	(101.208)	(187.183)	184,9488183
Production and manufacturing expenses	(15.001)	(23.793)	158,609426
Production and similar taxes	(1.274)	(3.621)	284,2229199
Depreciation, depletion and amortization[a]	(9.127)	(9.128)	100,0109565
Impairment and losses on sale of businesses and fixed assets	(3.039)	(549)	18,06515301
Exploration expense	(644)	(1.045)	162,2670807
Distribution and administration expenses[b]	(11.590)	(14.447)	124,6505608
Profit before interest and taxation from continuing operations	12.329	35.158	285,165058
Finance costs	(1.140)	(718)	62,98245614
Profit before taxation from continuing operations	11.189	34.642	309,6076504
Taxation	(4.317)	(12.331)	285,6381747
Profit for the year	6.872	22.286	324,3015134

Source:bp.com

As far as the data from the Balance Sheet are concerned non current assets are increased by 122% out of which the most significant rise is noted in investment in jointly controlled entities for 373% , fixed assets went up for 114% and strongly change in policy in benefit plan surplus is observed. (*Table 28)* Current assets marks increase to almost double for largely in inventory 185% and loans, with the smaller rise in current liabilities of 159%.BP shareholders can also enjoy favorable market conditions with equity increase from $ 64.472 thousand to $ 85.465 thous.

Table 28:BP Balance Sheet

mil USD	2002	2006	2006/2002 %
Property, plant and equipment[a]	87.682	90.999	103,78
Investments in jointly controlled entities[a]	4.031	15.074	373,95
Other investments	1.995	1.697	85,06
Loans, receivables and other non-current assets	2.346	5.738	244,59
Defined benefit pension plan surplus	388	6.753	1.740,46
Inventories	10.181	18.915	185,79
Loans, receivables and other current assets	26.811	52.212	194,74
Cash and cash equivalents	1.735	2.590	149,28
Assets classified as held for sale	–	1.078	
Total assets=Total liabilities	**155.455**	**217.601**	139,98
Payables and other current liabilities	32.795	57.807	176,27
Finance debt	10.086	12.924	128,14
Current tax payable	3.420	2.635	77,05
Payables and other non-current liabilities	3.412	6.594	193,26
Finance debt	11.922	11.086	92,99
Deferred tax liabilities	13.514	18.116	134,05
Provisions	7.120	11.712	164,49
post-retirement benefit plan deficits	7.998	9.276	115,98
Total liabilities	90.983	132.136	145,23
Reserves	58.218	79.239	136,11
BP shareholders' equity	63.834	84.624	132,57
Total equity	64.472	85.465	132,56

BP strategy is directed toward four statements: getting the essentials right, executing more effectively, investing for the long term and contributing to the future of energy. In order to achieve its environmental aims BP announced to invest $500 mil over the next 10 years in different environment programs. Currently their success on marked is low carbon power generation, a three fold increase in manufacturing capacity of solar photovoltaic panels, growth of wind power production to 450MW, advancing development of the world's leading commercial hydrogen power plant, constructing gas cogeneration power plants totaling more than 700MW and reducing projected carbon dioxide emissions as consequence.

4.5. Netherland

If we cast a glance on the Shells performance in the years 2006 and 2004 positive numbers are observed among main performance indicators. Although income arose 140% to base (2004) year it is worth noting that the taxes arose 150%. Further to note is that cash flow from investment activities strongly grows with time, making basic earnings per share in two years more than 144%.

4.5.1. Shell

Revenue increase -119%, gross profit rise -129 % and increased cash outflow for investment activities 349% are the main characteristics of Shell's financial performance in the years 2004/2006. *(Table 29)*

Table 29: Financial performance - Shell

mil USD	2006	2004	2006/2004 %
Revenue	318.845,00	266.386,00	119,6929
Revenue from oil products	248.581,00	210.424,00	118,1334
Cost of sales	262.989,00	223.259,00	117,7955
Gross profit	55.856,00	43.127,00	129,5152
Income beffore taxation	44.628,00	31.659,00	140,9647
Taxation	18.317,00	12.168,00	150,5342
Income attributabel to shareholders	25.442,00	18.540,00	137,2276
Basic earnings per share	3,97	2,74	144,8905
Assets total	235.276,00	187.446,00	125,5167
Current assets	91.885,00	62.049,00	148,0846
Non current assets	143.391,00	125.397,00	114,3496
Non current liabilities	43.583,00	41.211,00	105,7557
Current liabilities	76.748,00	54.852,00	139,9183
Equity	114.945,00	91.383,00	125,7838
Capital employed =total asssets-total liabilities + debt	130.718,00	105.975,00	123,348
Total liability and equity	130.718,00	105.975,00	123,348
Cash flow from operating activities	31696	26537	119,4408
Cash flow from investing activities	-20861	-5964	349,782

Source:shell.com

In addition company has strong resource base operates in more than 130 countries, investing more than ever to find and produce additional oil and natural gas. With innovative technology[26] operates in challenging environments and continually improve the efficiency of their operations. Shell has a profitable downstream business with the world's largest single branded retail network and one of the most powerful brands. They are building on their successful track records in liquefied natural gas across the whole production chain and are a leading LNG supplier. They are world's largest distributor of biofuels and they are one of the biggest developers of wind energy.

Shell sees its future in the oil, gas coal business and to produce oil from unconventional resources such as oil sands. Managing the environmental and social impact of energy use and production remains a priority. The company is aware that in making all goals true, close cooperation with governments and other national oil companies plays significant role.

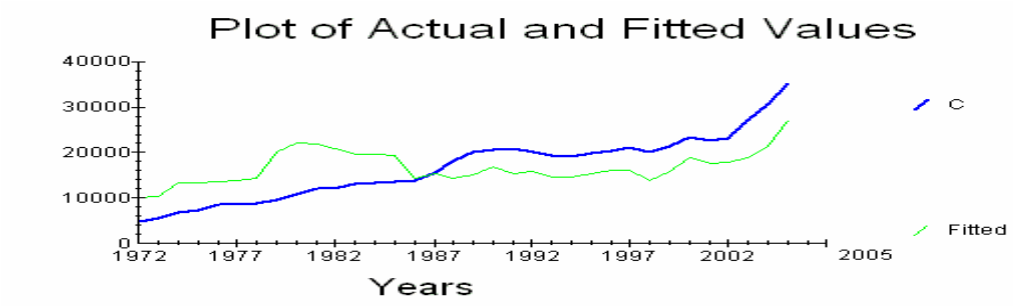
[26] Snake well and Smart Field technology helped raise production in Brunei to a 25 year record.
4D seismic technology discovered substantialremainning oil in areas in the North Sea that has not yet been tapped
Cooperation with Stateoil Norway to work on using CO2 for enhanced oil recovery offshore

4.6.Canada

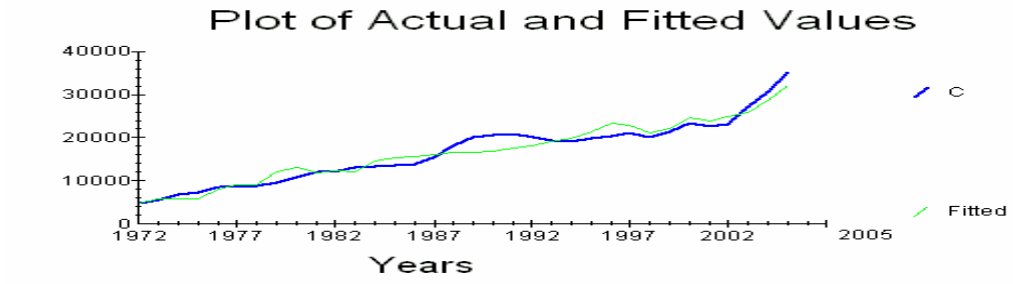
Canada is producing 151,3 million tones [27] what is increase of 4,4% comparing to the year before. Although with great potentials in oil sands it still makes only 3,9% of the total world production. Proved reserves makes 1,4% of total amounting 17,1 thousand million barrels. Having "only" 2,5% of world total or 100,3 million tones[28] yearly 2006 consumption, Canada is "lagging behind" its neighbor for less than 21,6%. It also reverses its refinery throughputs comparing to the year before for almost -2,7% making only 1 850 thousand barrels a day what is also significantly less (-18%) than USA .

GDP per capita in correlation with crude prices in Canada is not so strog and equals .49492 as in Britain and Arabia.

*Gdp capita = 9680.3*CON + 356.9921*crude prices*



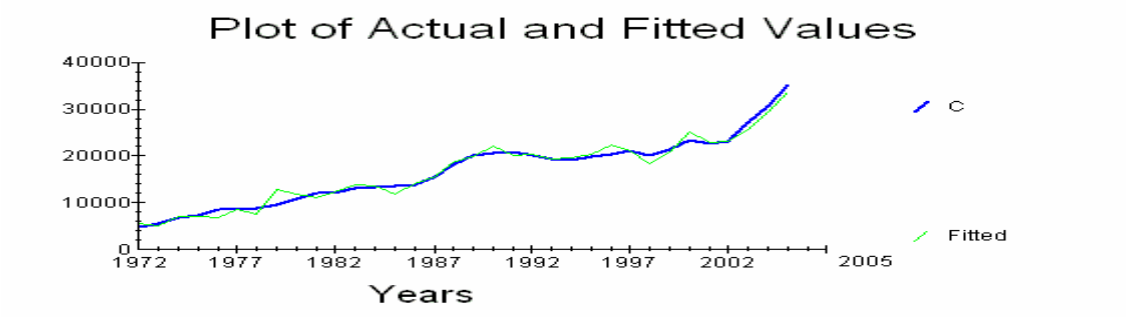
*Gdp capita = -19707.3*CON + 151.1034*crude prices + 128.9495*prim.energ.cons.-28.2653*oil prod. -39.7963*oil consum. -5.4305*refinery capacity*



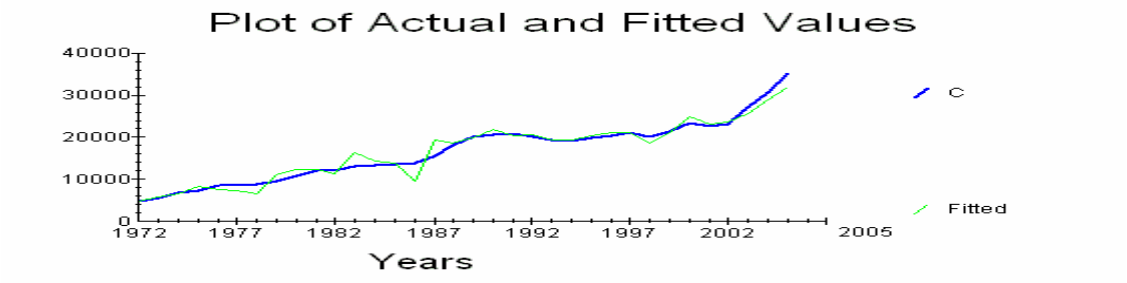
The larger impact on GDP per capita is observed in relation to gross fixed capital formation, government consumption, agriculture and changes in inventories.

*Gdp capita = 10515.3*CON + 470.7921*crude prices -1.0789*final consumption - .58109*household consumption + 39.8963*gover.consump. + 27.9565*gross capital formation - 73.0747*gross fixed cap.formation + .5371E-6*changes in inventories -8.8600*exports -3.7160*imports + 10.5489*gdp by expenditures + .1502E-5*agriculture*

[27] Canada oil production in 2006 was 3147 thousand barrels a day
[28] Canadas consumption in 2006 is 2 222 thousand barrels a day



*Gdp capita = 11624.6*CON + 407.8627*crude prices -17.8311*mining -.1926E-3*manufacturing + .3656E-5*construction -.9416E-6*wholesale -.4440E-5*transport + 1.0978*other activities + 421.9557*value added*



Although large number of energy related companies operates in Canada , results from two of them Petro Canada and Imperial Canada, are presented as follows.

4.6.1. Petro Canada

Canada is often mentioned as the pride owner of unconventional oil reserves such as oil sands but has also very strong conventional oil industry. The positive market conditions are visible in the financial statement of the Petro Canada corporation where revenue increase was 107% in just a year time, retained earnings increased from $7.018 mil to $8.557 mil. As the other oil companies Petro increased property equipment for about 116% comparing to year 2005. Shareholders equity was increased for 110% although total liabilities arose for significantly 109%. *(Table 30)*

Table 30: Financial data for Petro Canada

mil USD	2006	2005	2006/2005 %
Revenues	18.911,00	17.585,00	107,5405175
Expenses	14.697,00	13.377,00	109,8676833
Earnings before income taxes	3.972,00	3.402,00	116,7548501
Provision for income taxes (current and future)	2.384,00	1.709,00	139,4967817
Net earnings	1.740,00	1.791,00	97,15242881
EPS basic	3,15	3,27	96,33027523
Retained earnings	8.557,00	7.018,00	121,9293246
Cash flow from operating activities	3.623,00	3.987,00	90,87032857
Investing activities	- 2.738,00	- 3.358,00	81,53662895
Total assets	22.646,00	20.655,00	109,6393125
Property plan and equipment	18.577,00	15.921,00	116,6823692
Shareholders equity	10.441,00	9.488,00	110,0442664
Current liabilities	3.348,00	3.086,00	108,4899546
Toal liabilities	12.205,00	11.167,00	109,2952449

Source:petro-canada.ca

In upstream business Petro produced 345 000boe/d net from continuing operatins.It is the second largest downstream company based on sales of refined petroleum products. Refineries in Edmonton and Montreal accounted for 13% of Canada's refining capacity in 2006. Petro is known as Canada's Gas Station while selling approximately 16% of all products in the country. Company wants to be seen as clear, capable and committed. They recognize that value comes in different forms, have superior returns, excellent service and respectful relationships. We can provide this kind of value because of our diverse businesses, consistent strategy and plans for future.

Company is in an enviable position of having diverse suite of quality assets and projects to develop in the future. To get the full value from existing businesses and future opportunities requires a company that is determined and capable: Petro is committed to invest and conduct operations in a way that is ethically, sociable and environmentally responsible –as stated by report.

4.6.2. Imperial Canada

Strong performance with strong daily production of oil, gas of 364.000 oil equivalent barrels a day marked another year in Imperial Canada. Although revenue was smaller in 2006 than it was recorded in Income Statement in the year before, Imperial Canada can celebrate rise of net income per share for about 122% . With shareholders equity increased by 111% , total assets increased by 103%, cash flow from operating activities up for 104% it can be proved that Imperial Canada is benefiting from the high oil prices and high demand situation on the market *(Table 31).*

Imperial achieved record earnings of $3 billions or $3,11 per share, up from the previous record of $2,6 billion or $2,53 per share in 2005. Company maintained an industry leader with return on capital employed of 36%.Total shareholders return including share appreciation and dividends was 12, 5%. Debt as percentage of total capital was 17%, interest coverage was times on an earning

basisi.Company also maintained its AAA ranking. Social contribution amounted $12,4 million what is 0,05% of revenue.

Table 31:Imperial Canada Financial Statement

mil USD	2006	2005	2006/2005 %
Revenues and other income	24788	28214	87,85709
Total expenses	20688	24296	85,14982
Income before income / taxes	4100	3918	104,6452
Income taxes	3044	2600	117,0769
Net income per share	3,12	2,54	122,8346
Cash flow from operating activities	3587	3451	103,9409
Cash used for investing activities	965	992	97,27823
Total assets	16141	15582	103,5875
Current assets	5309	4999	106,2012
Property equipment	10457	10132	103,2077
Total current liabilities	5348	5145	103,9456
Total liabilities	8735	8949	97,60867
Shareholders equity	7406	6633	111,6539
Total liabilities and sharehol.equity	16141	15582	103,5875

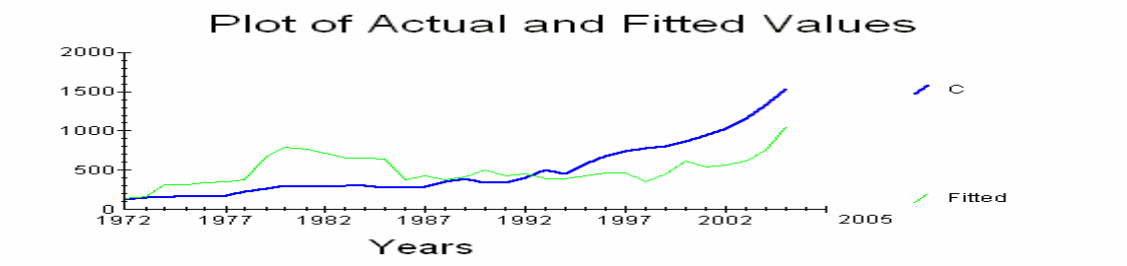
Source:imperialoil.ca

4.7. China, India

China is enriched with 16,3 thousand millions barrels of proved oil reserves what is only 1,3% in world total. By producing 183,7 million tones[29] in 2006 China increased production for 1,6% of previous year nearing 5% of the total world production. Large shortage is visible if we know that China consumed 9% of the total world consumption equaling 349,8 million tones.[30] Having 8,1% of the total world refining capacity equaling 7.029 thousand barrels a day, China is facing the problems of growing demand, lack of natural resources (except coal) and refining capacities what need to be overcome in the future China's energy policy.

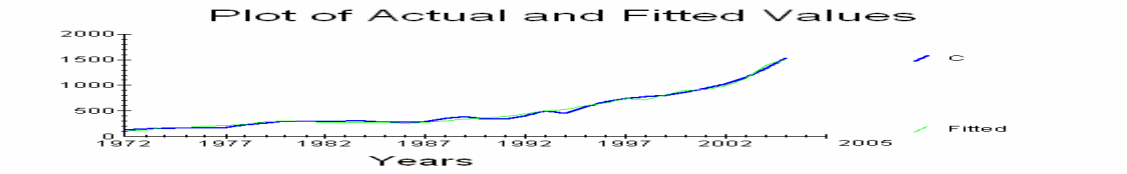
Significant correlation between GDP per capita and oil prices amounting .52387 doesn't explain China economic wonder and really rise in GDP should be searched in many other factors out of oil industry such as low cost of labor attracted many western companies to install their production. As presented in graph mid 90 –ies shows significant growth in GDP leaving oil prices rise below the fitted curve.

[29] China produced in 2006 3 684 thousand barrels a day
[30] China consumed 6 984 thousand barrels daily



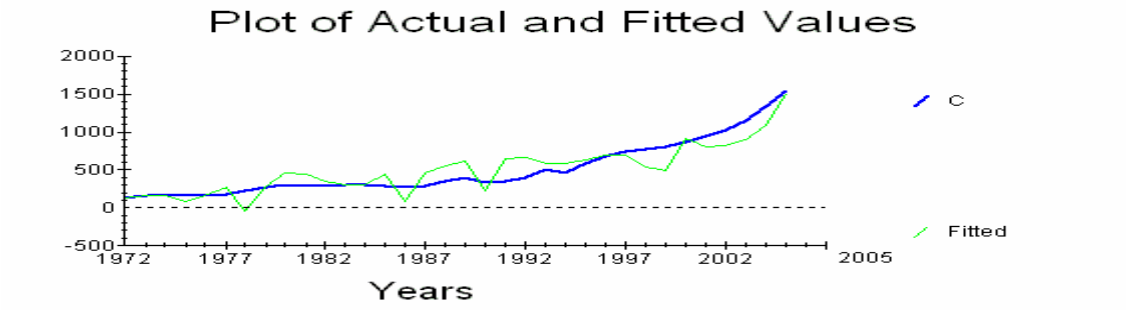
The more oil is consumed, refinary capacity increases its production level, the more GDP per capita in China increases.

*Gdp per capita = -50.4151*CON + 3.4423*crude prices + .23481*prim.energy.cons. - 2.3750*oil.produc. + 3.7013*oil consum. + .036070*refinery capacity*



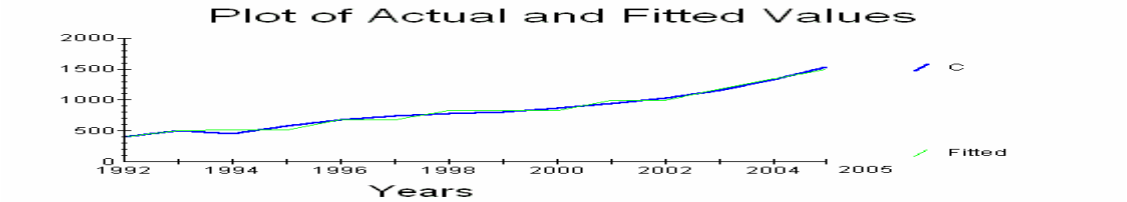
Positive relation is observed between the GDP and final consumption on expenditure and government fin.consum, while negative on capital formation and changes in inventories.

*Gdp per capita = 218.2143*CON + 26.3761*crude prices + .19504*final cons.on expend. - .13545*household consumption + .3552E-7*gen.gov.fin.consum. -.092881*gross capital formation - .53305*gross fixed capital formation -.1133E-6*changes in inventories*



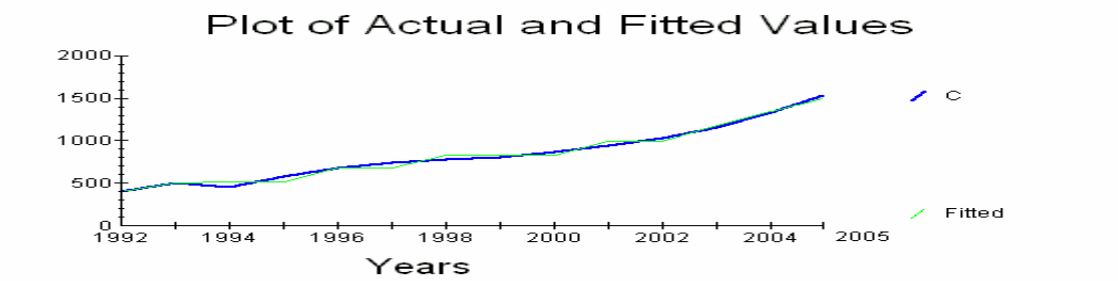
Exports of goods influence GDP positively, import negatively what is to expected. Further increase in per capita wealth is observed with higher level of agriculture, hunting, fishery and mining.

*Gdp per capita = 175.4250*CON + .32346*exports of goods and services -.29818*imports of goods and services -.66356*gdp by expenditure + 40.4473*agriculture,hunting,forestry,fishing+ 154.9346*mining, manufacturing*



Very good fitted relation between the and manufacturing, construction, transport and trade if put in linear regression what is visible on the graph that follows.

*Gdp per capita = 113.0768*CON + 172.6931*manufacturing + .010931*construction - .046102*wholesale,retail,trade -.018803*transport,storage,communication + .093754*other activities + 14.9266*value added*



4.7.1.CNPC

The world trend of rising performance production and financial data is observed in Chinas National Petroleum Corporation, company that managed in the four years period to increase assets of 189%, and owners equity for 195% .

With the rise in revenue of 212% taxes increased for about 273%. *(Table 32)*

Table 32 : CNPC Financial Statements

billion yuan	2006	2002	2006/2002 %
Total assets (billion yuan)	1398	736,1	189,92
Owners equity	879	450,4	195,16
Sales revenue	806	379,2	212,55
Sundry taxes	177	64,6	273,99
Crude oil production	134	113,79	117,76

Source:cnpc.com

Company states that it is proud to promote economic growth and social developments as their primary economic responsibility. Stable energy supply for the development of the national economy.The increase investments to improve oil and gas supply, develop clean energy production, provide goods and services and maintain market stability. Company considers people the world's most important resource and they always attach importance to sustainable social developments and people's health and safety. As a resource mining company they have recognized a greater responsibility than other firms in terms of safety and environmental protection.Alonge with the continuous expansion of their business, they work hard to tackle potential hazards and protect the environment during the production process. Striving for zero accidents, zero injuries and pollution, devoted to clean production, rational use of resources, company is trying to be good member of Chinese society. Having said that data from help and donation that totals 436,17 million Yuan or 0,11%of sales revenue are displayed as follows.

Table 33: Social contribution

	Social support mil Yuan
Donation to the public infrastructure, construction	127,82
Poverty alleviation	88,02
Donation to education	45,53
Donation by staff	42,55
Disaster or poverty relief	39,67
Non commercial donations	29,33
Donations to disadvantaged groups	12,17
Voluntary tree planting	4,69
Other sport,culture,health	46,39

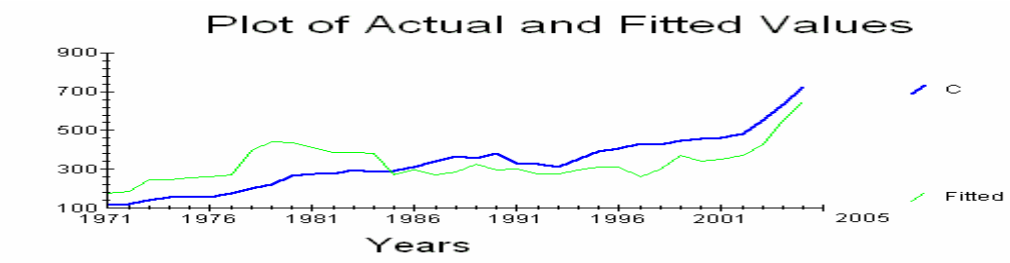
Source:cnpc.com

India

Proven oil reserves in India amount 5,7 thousand million barrels or 0,5% of the world total. Country produced 37,4 million barrels or 1% of the world total while consumption was 3,1% of the world amounting 120,3 million tones.[31] Refining capacities for India are 3,4% of the total amounting 2.992 thousand barrels a day.

India's correlation between the GDP per capita and oil prices is .66631 out of 1 . This is observed on graph where fitted and real line has rising narrow trends.

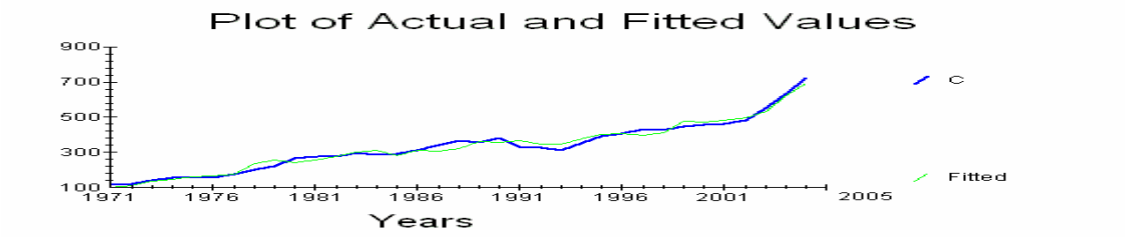
*Gdp per capita = 170.0688*CON + 7.8008*crude prices*



If we rise the primary energy consumption for 1% GDP goes up for 1.396, rising oil production for 1% makes GDP to rise for 3,7995 as well as the the rise in refinery capacity. By increasing the oil consumption by 1% we can expect fall in GDP for 3,23 at the same time rise in the oil production and increased production capacity causes rise in GDP, what can be explained by not using the oil consumption to produce goods or services but only to spend for transportation purposes.

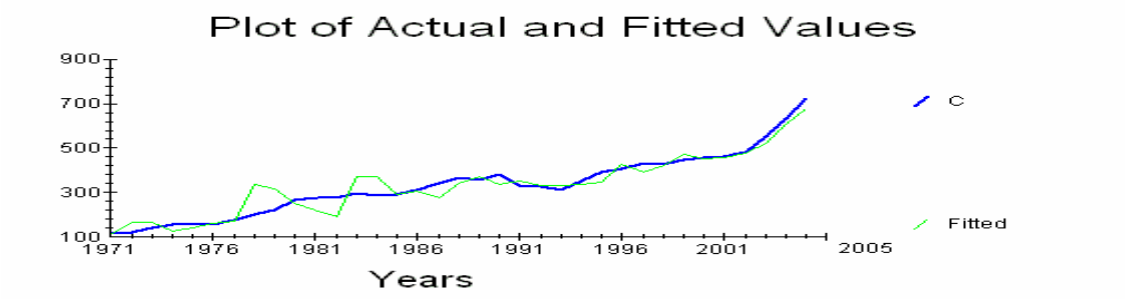
[31] India consumption in 2006 was 2575 thousand barrels a day

*Gdp per capita = 18.3982*CON + 3.3767*crude prices + 1.3964*prim.energy.cons. + 3.7995*oil prod. -3.2301*oil consumpt. + .061498*refinery capacity*

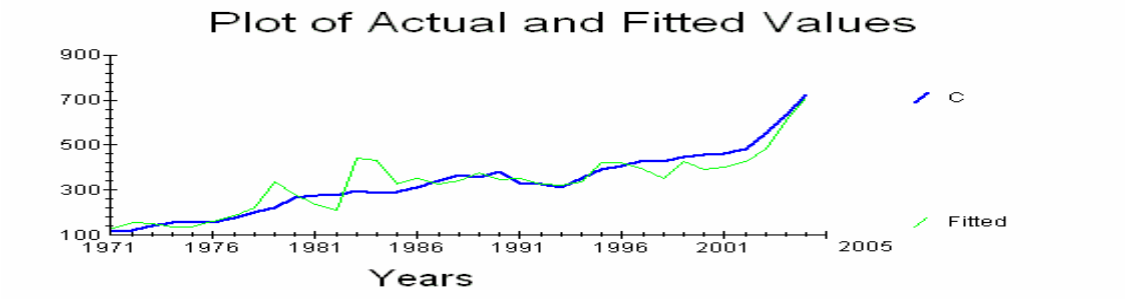


The following equations show linear relation between the GDP per capita and oil prices, government consumption, changes in inventories, household consumption, imports, exports of goods/services, agriculture, hunting, gross capital formation, transport, storage, construction and other important macroeconomic variables. Graphs that follows shows that GDP is very good explained by those variables.

*Gdp per capita = 323.2898*CON + 5.8401*crude prices -.22594*household consumption - .9061E-7*gen.gov.final consump. -.5917E-7*gross capital formation + .5530E-7*gross fixed capital formation + .2675E-8*changes in inventories + .4520E-8*exports of goods and services -.3088E-7*imports g/s - .0060807*gdp by expendit. -.089149*agricult.hunting,forestry,fishing*



*Gdp per capita = 218.1274*CON + 8.0057*crude prices + .3066 household.consum.-7*mining,manufactur.utilities -.4640E-7*manufacturing + .3530E-7*construction -.1089E-6*wholesale,retail,hotels -.3213E-7*transport,storage,communicat. -.6747E-8*other activities -.15145*value added*



4.7.2. Indian Oil

A major diversified, transnational integrated energy company with national leadership and a strong environmental conscience play's a significant role in security distribution. Company is proud to nurture values such as care (concern, empathy, understanding, cooperation and empowerment), innovation (creativity, flexibility), passion (commitment, dedication, pride, inspiration, ownership, zeal and zest,) and trust (delivered promises, reliability, dependability, integrity, truthfulness, transparency.)

Indian Oil turnover rose 119% in 2006 comparing it to the 2004/2005 having for the consequence rise in gross profit. Although improved operating activities they rose retained earnings for only 107% keeping the EPS at the similar level, still increasing ratio of debt to equity *(Table 34).*

Table 34:Indian Oil business data

	2005-06	2004-05	2005-6/2004-5
Turnover	41.059,00	34.452,00	119,18
Gross profit	2.226,00	1.993,00	111,69
Profit before interest tax	1.732,00	1.494,00	115,93
Dividend	327	387	84,50
Retained earnings	728	677	107,53
Total debt to equity	0,9	0,67	134,33
Long term debt to equity	0,39	0,27	144,44
EPS	0,94	0,96	97,92

Source:iocl.com

Company aims are directed toward achievement of standards, maximization of wealth and introduction of the state of art technologies as well as to attain leadership. By fostering culture of participation and innovation employees growth is achieved. Preserving heritage and strong environmental conscious are goals equally valuable.

4.8. Regional and world data

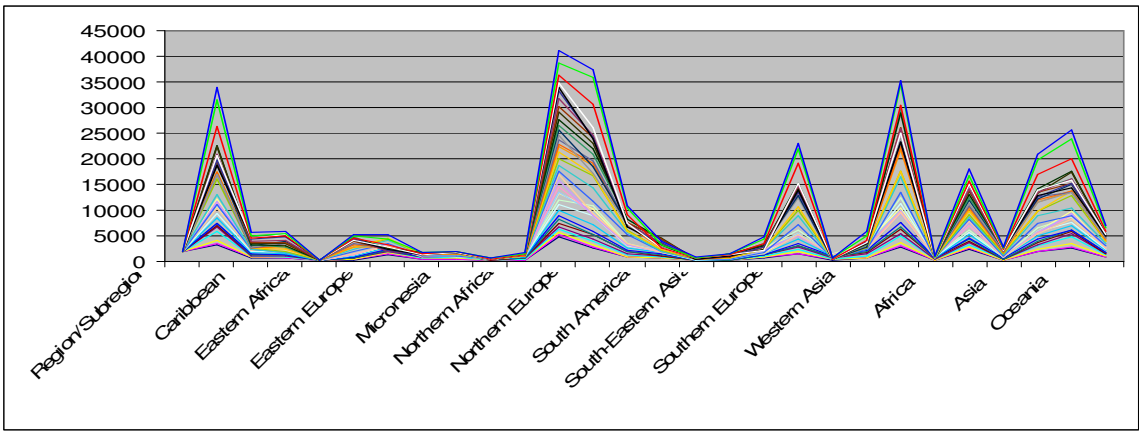
Total world oil proven reserves are 1.208 thousand million barrels of which 75% is in OPEC 12 possession, 10,6% are in property of Former Soviet Union, 14,4% of the Non-OPEC and OECD has 6,6%. Refinery capacities are able to deal with 87.238 thousand barrels a day of which OECD countries having 51,4%, EU-27 is processing 18% and Former Soviet Union 9,4%.

The world production in 2006 was 81.663 thousand barrels a day with OPEC-12 producing majority of 43,5%, OECD have 23% and Former Soviet Union making 15,3%.

Consumption totaled 83.719 thousand barrels a day out of which OECD spent the majority or 58%, and EU-27 consumed 18,6%. With Former Soviet Union spending of about 4,8% rest of world need to be settled with remaining 18,6%.

GDP per capita varies throughout regions and time *(Graph 13)* .Average world level in 1970 was 875$ while in 2005 6.879 $/capita. Almost all countries exhibited nominal rise in GDP. It is noted,however, that some of them exhibited strong real growth as percentage of gdp/capita in to world average from 1970 to 2005 while some fell significantly. Countries that exhibit growth in these two periods maintaining the prior positions are North and Central America and Oceania, while fall Caribbean, South America and Central Asia.

Graph 13: GDP per capita from 1970-2005



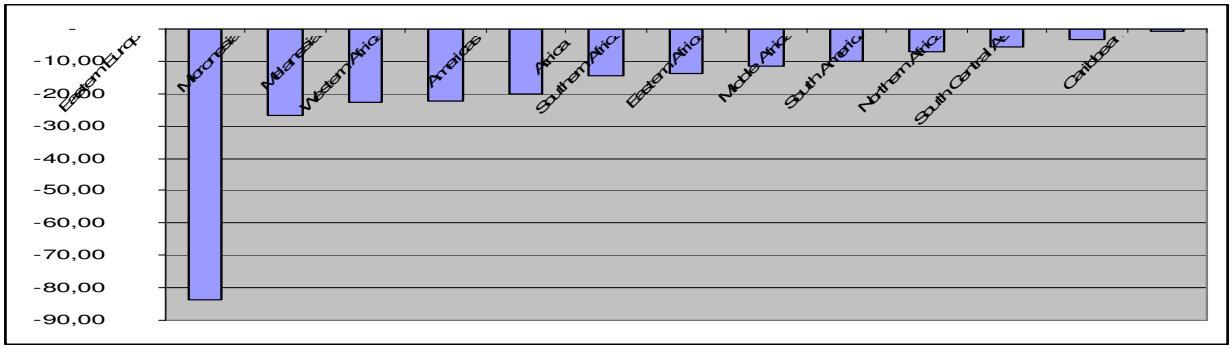
Strongest real decline in % of the world average is marked by Eastern European countries, Micronesia, Melanesia, Western, Eastern and Middle Africa. These regions considerable reduce its GDP per capita in 2005 comparing it to 1970 to the world average *(Table 35).*

Table 35: Fall in gdp/capita to world average 1970/2005

Country	1970 GDP/capita	GDP per capita / World %	2005 GDP/capita	GDP per capita / World %	Difference 1970/2005
Eastern Europe	1406,33099	160,57	5290,819224	76,91	- 83,66
Micronesia	484,067435	55,27	1965,519711	28,57	- 26,70
Melanesia	419,6269249	47,91	1735,642263	25,23	- 22,68
Western Africa	282,1173951	32,21	673,550512	9,79	- 22,42
Americas	2486,349376	283,89	18148,32073	263,81	- 20,08
Africa	259,0023945	29,57	1047,065196	15,22	- 14,35
Southern Africa	727,7437274	83,09	4767,885422	69,31	- 13,78
Eastern Africa	140,9824705	16,10	307,0881018	4,46	- 11,63
Middle Africa	177,8900322	20,31	714,3739674	10,38	- 9,93
South America	569,6417007	65,04	3985,297541	57,93	- 7,11
Northern Africa	279,1784851	31,88	1812,579317	26,35	- 5,53
South Central Asia	132,6055447	15,14	813,3231908	11,82	- 3,32
Caribbean	714,4298404	81,57	5569,636144	80,96	- 0,61
World	875,8258004	3.946,03	6879,301154	4.547,04	

Source:World bank

Graph 14: Fall in gdp/capita to world average 1970/2005



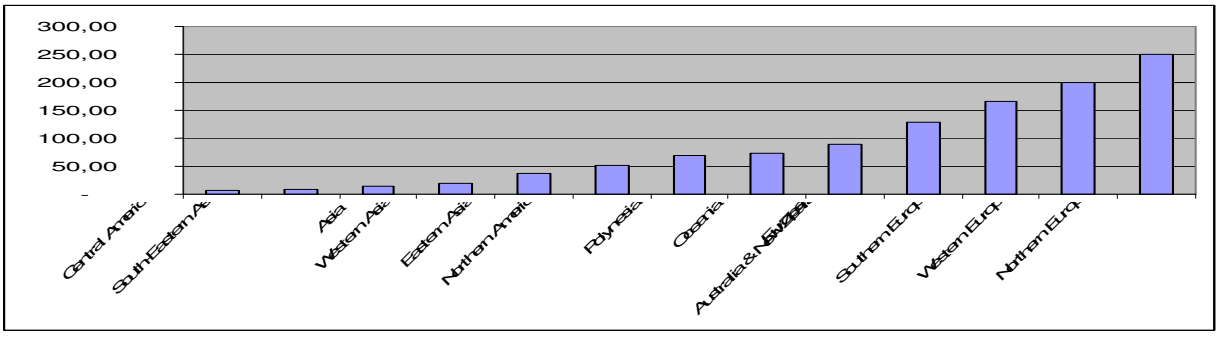
The most significant real rise in % to the world average is marked by Western, Northerna and Southern European countries, Australia and New Zealand, Oceania and Polynesia. These regions considerable increses its GDP per capita in 2005 comparing it to 1970 to the world average *(Table 36).*

Table 36: Rise in GDP/capita to world average 1970/2005

Country	1970 GDP/capita	GDP/capita % / World	2005 GDP/capita	GDP/capita % / World	Difference 1970/2005
Central America	685,2489545	78,24	5895,346806	85,70	7,46
South-Eastern Asia	124,8080726	14,25	1586,984691	23,07	8,82
Asia	236,1480933	26,96	2896,780959	42,11	15,15
Western Asia	568,4839679	64,91	5849,794861	85,03	20,13
Eastern Asia	321,4679527	36,70	5159,216249	75,00	38,29
Northern America	4788,573168	546,75	41118,86988	597,72	50,97
Polynesia	766,3713476	87,50	10864,03754	157,92	70,42
Oceania	2631,416995	300,45	25645,3493	372,79	72,34
Europe	1868,734324	213,37	20833,31719	302,84	89,47
Australia & New Zealand	3184,210164	363,57	33868,22209	492,32	128,75
Southern Europe	1468,53496	167,67	22960,29705	333,76	166,08
Western Europe	2751,983593	314,22	35320,62292	513,43	199,22
Northern Europe	2568,937954	293,32	37419,81726	543,95	250,63
World	875,8258004	6.667,88	6879,301154	8.364,59	

Source: World Bank

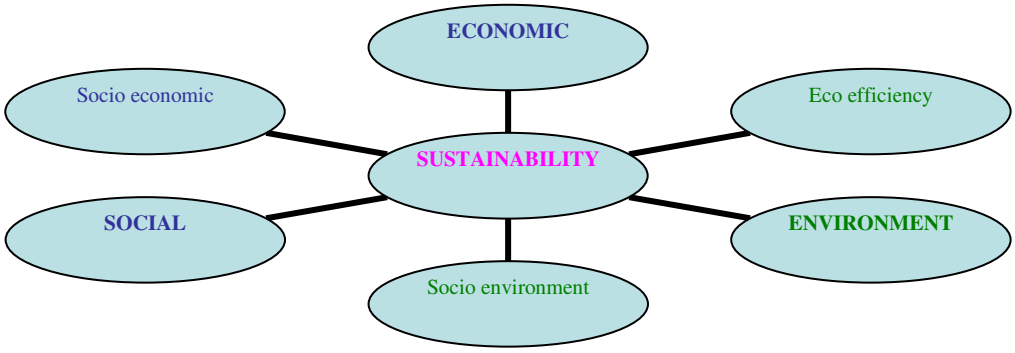
Graph 15: Rise in GDP/capita to world average 1970/2005



It is important to note some facts about CO_2 emission per capita. It is established that amount of above 12 t/capita is made by following countries: USA, Australia, Canada and Saudi Arabia, above 10 t/a have United Kingdom, Korea, Japan, Germany and Russia, while under 8 metric tones/capita have EU countries, South Africa, Spain, Ukraine, France and Iran.

5. WHAT OIL COMPANIES (NOT) FAILED TO DO?

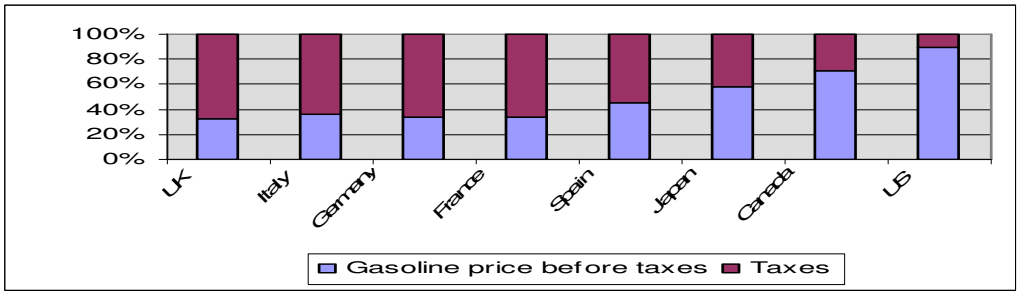
To reach sustainable development many aspects of living should be harmonized and equally appreciated in each level of our society: from the kindergarten to the old pension club. Accordingly, each subject should contribute following its means, capabilities and strength. Shortly this means that those who have more money and knowledge should lead in promoting economic, environmental and social activities teaching the rest of population the good ways of living. This concept should be percept as humanitarian approach in order to really sustain the balance of this a little bit socio economic, eco efficient and socio environmental shaken world called Planet Earth.



5.1 Oil companies good tax payers?

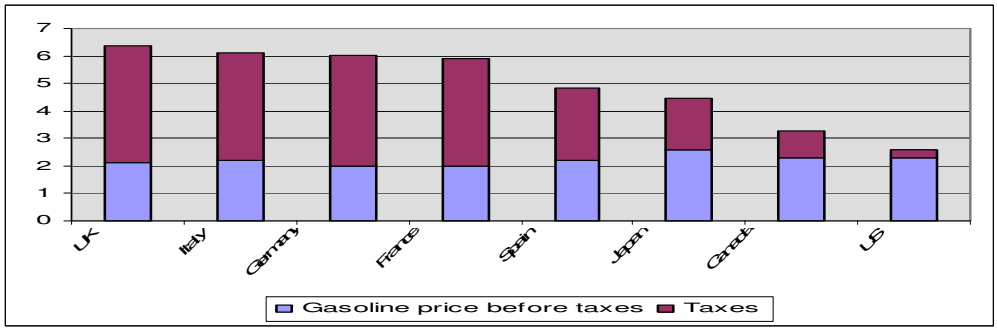
Oil companies are obliged in its business and accounting procedures to incorporate, calculate and pay different types of tax levies that stretches from the basic VAT, profit, income, property and dividend tax to the more business oil /gas type oriented extraction mineral or export tax. Although the same types of taxes, the percentage and amount collected is not equally shared by companies in cross sectional analysis made. It is visible from the *graph 16* that in the the gasoline price structure the largest amount of tax payment is imposed in Great Britain, than Italy, Germany and France. The least level of tax payment on gasoline prices is made in Canada and USA. *(Graph 17)*

Graph 16: Gasoline prices before and after taxes



Following this it is easily understood that UK have the highest gasoline prices while Canada and USA offer gasoline consumers the best terms of trade supported by the state. *(Graph 17)*

Graph 17: Apsolute value of the gasoline prices in selected countries



The gasoline prices before taxes incorporates more or less similar costs of crude purchase, extraction and production at the level of 2 $ but tax levies increase the costumer price from the 2,57$ ((USA) to 6,37$(UK). *(Table 37)*

Table 37 :Gasoline prices before and after taxes

	Gasoline price total	Gasoline price before taxes	Taxes
UK	6,37	2,1	4,27
Italy	6,11	2,2	3,91
Germany	6,03	2	4,03
France	5,88	2	3,88
Spain	4,85	2,2	2,65
Japan	4,47	2,6	1,87
Canada	3,26	2,3	0,96
US	2,57	2,3	0,27

Source: Exxon.com

Each country has its own ways in legislative regulation regarding taxes to be imposed on energy related companies. In elaboration some of them Russian, American, and European based system is chosen. It is established that different types of taxes are valid, time to revisit certain amounts varies

and influence on legislation and tax policy could be significant to the extent to destroy company or remove the tax burden and get rid of competition.

Russians tax declaration remains open and subject to inspection for a period of up to three years. Transfer pricing rules were introduced in 1999 giving Russian tax authorities the right to make transfer pricing adjustments and impose additional tax liabilities in respect of all controlled[32] transactions provided that the transaction price deviates from the market price by more than 20%.

While the Russian transfer pricing rules are vaguely drafted leaving wide scope for interpretation by Russian tax authorities and courts these could easily shake company's prices and be subject of changes. If such price adjustments are upheld by courts the oil company's financial statement could be adversely affected. This situation of underpayment could bring company into unfavorable position of facing unexpected tax amounts as well as fines and penalties.

Table 38 presents tax rates history in Russian Federation. It is visible that authorities wanted to increase entrepreneurial spirit by decreasing the income tax making it to more bearable level from 35 to 24%. Besides property tax of 2,2% and VAT of 18% oil companies have to calculate and unified social tax of 26%.

Energy company's activities are charged with mineral extraction tax RUR/t and increased heavily export tax on crude and products export.

Table 38:Average rates of main taxes levied on oil companies in the Russian Federation

		2001	2002	2003	2004	2005
Income tax	%	35	24	24	24	24
Property tax	%	2	2	2	2,2	2,2
VAT	%	20	20	20	18	18
Unified social tax	%	35,6	35,6	35,6	35,6	26
Mineral extraction tax (oil)	RUR/ton	–	667,1	801,4	1052,8	1876,3
Mineral extraction tax (natural gas) before 2004	%	–	16,5	16,5	–	–
Mineral extraction tax (natural gas) after 2004	RUR/th.cm	–	–	–	107	135
Oil export tariffs	USD/ton	26,3	18,6	30,4	55,8	130,6
Natural gas export tariffs	%	5–10	5	5	30	30
Petroleum product export tariffs						
light distillates	USD/ton	34,94	28,4	27,36	37,93	92,26
middle distillates and gas oil	USD/ton	34,94	28,4	27,36	37,93	92,26
liquid fuels	USD/ton	22,06	14,3	27,36	36,64	52,73
Petroleum product excises						
high-octane gasoline	RUR/ton	1850	2072	3000	3360	3629
low-octane gasoline	RUR/ton	1350	1512	2190	2460	2657
diesel fuel	RUR/ton	550	616	890	1000	1080
motor oils	RUR/ton	1500	1680	2440	2732	2951

Source: lukoil.com

[32] Controlled transactions include those between related entities ;independent parties such as foreign trade transactions with significant price fluctuations.

In real dollar terms tax obligations published in Corporate report by Russian giant Lukoil in 2001 and 2005 is presented in *table 39*. The far largest tax obligation 17,81% of total revenue is excises and export tariffs. It is good to hike higher rates on exports while the oil is exhaustible resource but the problem is that Lukoil is not notified about usage of these means: are they used to improve further research and investments in cleaner technologies or are spent on every day activities like salaries and pensions in that way leaving development of alternative energy to whom? Is there transparent mechanism of spending of all tax resources and possibilities of chosen to some project apart from companies donations? In the total tax structure Income and other taxes doesn't burdened total revenue more than 12% what is acceptable comparing to American counterparts.

Table 39:Lukoil tax obligation

mil usd	2001	2005	2005/2001 %	% tax in revenue 2005
Total income tax	674	2467		4,42
Mineral extraction tax	–	5590		10,02
Royalty tax	347	–		
Mineral replacement tax	215	–		
Road users' tax	100	–		
Social taxes and contributions	201	324	161,19	0,58
Property tax	83	233	280,72	0,42
Other taxes and contributions	64	187	292,18	0,34
Total taxes other than income tax	1010	6334	627,12	11,36
Excises and export tariffs	1456	9931	682,07	17,81
Sales revenue		55.774		
Income before taxes		2.467		
Net income		6.443		

Source:lukoil.com

Besides this highly recommendable Russian company another example is brought into limelight due to tax problems. After numerous scandals relating to tax avoidance, disagreement between priorities and parties that are financed by, jail sentences by some of the top ranking officials the Yukos filled for on December 4th 2004 a voluntarily petition under chapter 11 of the US Bankruptcy code. This was an bitter end of company that although had complaint about: retrospective reinterpretation of law; selective approach; retrospective abolishment of legally obtained tax benefits; application of full VAT rate with fines and penalties on export despite 0% legislative rate and excessive and inappropriate asset freezing finished with reduced Net Income from around $ 5 000 mil to "only" $ 714 mil in 2005. *(Table 40)*

The end of tax avoidance debate ended with selling of 20% of shares to Conoco -American Investor who benefited greatly by entering into closed Russian market filled with vast natural gas and oil potentials. Investment of $7,5billion increased Conoco's 17% crude production and enriched it with one of largest oil fields (Filanovsky) discovered in the last few years with 1,9 billion BOE.

Table 40: Yukos Tax problems

mil.USD	2003	2000-2003	2005	2006
Sales and revenue	16.365,00	46.131,00		
Total expenditure and taxes	11.537,00	31.465,00		
incl. Taxes	5.647,00	14.710,00		
Net Income	4.728,00	14.666,00	714,00	1.425,00
Increment Taxes	4.017,00	12.930,00		
Penalty,fines	3.962,00	14.864,00		
Total tax burdon	13.626,00	42.504,00		
Total tax burdon % of revenue	84%	92%		
Net crude production			235	360
Net Refining throughput			122	179

Source: yukos.com

There are several conclusions regarding the each subject that can be drawn.

The first are considering the Yukos policy. Each state, especially Russia, tries to reach its goals and development policy by imposing tax rates and directing countries policy in the direction that is orchestrated by the state government. It is not wisely from the company management to directly oppose to government by transferring the money to tax oases. Saying that it is not Yukos that owns the oil- it is the Russian nation and country who has the right to enjoy some of the benefits obtained by natural resource wealth. If it ware a word about a shoe company the fines and penalties should not be so hard. But trying to profit from natural exhaustible resources in the situation of large and big conglomerate as Yukos could not pass unnoticed. The second remark goes toward USA bankruptcy code 11 filled by Yukos- it would be strange if English company owned largely by English owners files petition under French or Russian law? Too strong relation and direction toward foreign legislation especially for the natural resource concessionary is not recommendable in any country in the world.

The second remark goes toward Government tax system and handling the case. Uncertainties, not allowing different political opinions and too hard punishment that resulted with huge business losses, ending by selling the part of the company to foreign ownership and scandals that could be avoided if proper constant control and clear rules were made.

On the opposite side of globe American companies enjoys low tax rates and government support that sometimes crosses the rules of fair play and with help of police/military forces even steps outside the national borders.[33] We all know that energy is important but USA addiction to it becomes treat to harmony in the world development and treat to environment.

[33] *Moving troupes from Western Europe to Eastern European countries in spite of low enthusiasiam in those countries, supporting and financed Kosovo as being part of Albania (like giving the California to Mexico), troupe employment in former Taliban financed Afghan area, etc- part of activities are published lately in CIA's reports*

In *Table 41* expenditure on taxes and parts of it in revenue is shown for Chevron, Conoco and Exxon is exhibited. Small amount of taxes are to be paid due to national legislation, while larger can be allocated to tax obligation worldwide. Taxes other than income amounts around 10% of each company revenue.

The second approach to tax system is represented by USA.

Table 41: Tax obligation as % of revenue and income

mil.USD	Chevron		Conoco		Exxon	
	2006	% Revenue	2006	% Revenue	2006	% Revenue
Sales and revenue	204.892,00		183.650,00		365.467,00	
Net Income		-	15.550,00	8,47		
Tax expenditure total	35.721,00	17,43	30.970,00	16,86	58.283,00	15,95
US income	3.609,00	1,76	5.202,00	2,83	27.902,00	7,63
Foreign income	11.229,00	5,48	7.581,00	4,13		-
Taxes other than income	20.883,00	10,19	18.187,00	9,90	30.381,00	8,31

Source:oil companies

Part of business culture and usual business behavior is political contribution to the local and federal parties and programs that company founds to be valuable. Chevron has made in 2006 $43,5 million in corporate political contributions to candidates and political organizations what further means contribution to support their views on local and state ballot measures.

This influence on political parties is not beneficial while make them (parties) obliged to pay back the money received and bring vague decisions about necessary measures in local and state community to be taken.

Two possible scenarios of Chevron successfull refusal to pay taxes are presented on two diagrams that follow. The first one is the scenario that already happened in 2006 , while the second one is one of the possibilities that could more positively influence not just state but world economic and environmental interests.

Graph 18: 2006 Real scenarios **Graph 19: Possible scenario**

California's Proposition 87 :New Tax Bill to be levied on oil produced in the USA up to $4 billion proceeds		Clifornia's Propos. 87 new tax to be levied on oil produced in the state up to $4 billion financ. transparent:; clear aims and goals; schedoled tasks
Proposition to be used to promote the development and use of alternative fuels		Oil companies didn't block the idea but together with Governm. Research all options to implement idea in the best way
Chevron in 2006 defeated proposal due to „ Lack of fiscal accountability“		Transparent way ; new products; introduction of clearer technology, New revenues to oil compnaies and state ; cleaner environment
Lost chance to invest in alternative fuels and contribute to reduction of global worming		60% more energy required until 2030 mostly from developing countries satisfy with new alternative fuels coming from
Expected rise in energy demand to 2030 for 60%develop.countries. Lost chance to develope alter. and take futur. market		By developing new environmentaly friendly products CO2 emissions reduced, glob.warm.slow down
Lack of invest.in alternative energy. Increased CO2 ; Future increased environmental problems		After development of new environm. friendly. Products and gaining the new markets need for tax can be abolish

Taxes should be made in the way to be clear, transparent, reach goal and have purpose. Having large number of tax rules, obligations that could easily change and shift even in the period of several years doesn’t contribute neither to companies nor government. Vague conditions of transition without proper industrial production suddenly opened to world market are particularly vulnerable and situation of bribery is possible. Especially interesting targets in the countries rich with natural resources are large energy companies whose shares should be protected and policy carefully examined until fair play, equal opportunities and standard with more developed countries is reached.

To manipulate with tax obligation, possibility to finance those in power and manipulate with their decisions and media, could bring another extreme. By not having enough money government can’t allocate and finance large public projects (bridges, electricity, health system, development of alternative energies that could be competition to conventional sources, research, public transportation , etc) that would benefit society as whole. In this way a minor group of people benefits and problems stays.

On the other hand government should in each moment be ready for conversation with tax payers, transparently publish on web pages allocation of tax money to individual projects that have name, aim and purpose as well as establish good control and not impose power by pushing good company into bankruptcy and further disaster.

5.2 Oil companies and social influences

More and more socially couscous companies incorporates in their end year report part that explains how they behave towards employees, contribute to community or states opinion and support to humanitarian activities, sport and housing in countries they operate. Amount spent depends on companies revenues, its policy and preference toward certain humanitarian need. How oil companies that enjoy benefits of high profits are darling to many governments and main idol of car drivers contribute to the world we share is further to be seen.

When talking about social influence we can divide this area into two separate parts: one is directed toward company itself and the other toward support, donations and financing activities needed in communities that company operates.

To examine a standard approach 2006 Social report of Lukoil was studied. As far as the inner operation is concerned company reports excellent results from allocating profits to observed employee responsibilities achievements program that had started in 2005. Numerous seminars, trainings, mentoring, study praxes abroad distance learning and MBA programs become normal part of companies business activities. Beside special attention to attract and keep young specialists Lukoil offers good health care and needed medical treatments, provide medical insurance and offers good opportunities for rest and relaxation. Further to note is Lukoil assistance in obtaining accommodation for workers, social support for women and families, non state pension provision for employees.
External support to children, boarding school and sponsorship of young people is the further area of Lukoils social contribution. By assisting veteran and invalid organisations, preserving cultural and spiritual heritage, supporting sport events[34] Lukoils diversifies donation and support among different groups company is trying to show itself as the good contributor and valuable company in the areas it operates.

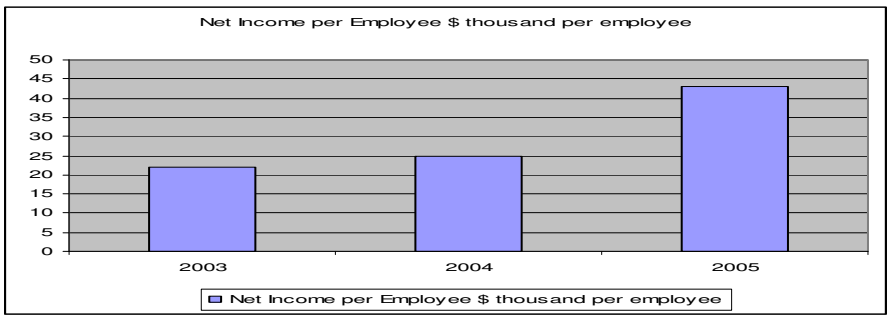
[34] Lukoil –supporter of the Russian Olympic Movement

Companies that operates in the USA also a great deal of attention point to social responsibilities. Chevron, for example, tries to set goals for each year in main areas of social work; reports what has been achieved and what is left to do. Clear goals, following its dream and evaluating past results are the most basic steps to achieve better world. Goals remains much the same internally: invest in people strategy, attracting global talents, investing in youth employees, supporting diversity, conducting employees surveys, promoting road safety etc. Large number of projects done throughout world marks partly Chevron external social contribution and they varies between years such as collaboration to fight Malaria, HIV/AIDS policy implementation, tsunami recovery effects, the number of hectares that were unproductive turned into fertile land; fight for human rights; donations and contribution to one needed.

Good intentions and good deed are valuable part of each report and sometimes a drop of water if needed could worth billions and be priceless if save life. But let examine had oil companies really did what they could to save life's? To do a good deed without expecting a return?

It is an old saying that company is the people. Really the truth. Compensation and reward constant education and research, investment in education finally means good people achieving the excellent results making profit to company (*Graph 20).* That is at the end company aim. Investing in health really mean a less days spend at home being sick that many company like to present declining line of sick leaves.

Graph 20:Lukoil Net Income per Employee



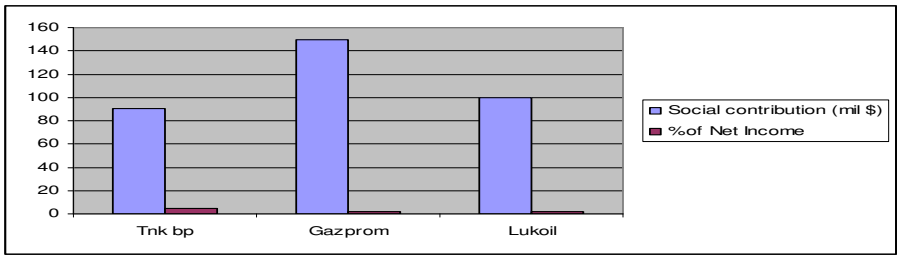
Further doubt about entirely good attentions is based about quantities actually spend seeing as percentage of Revenue or Net Income. Majority countries have tax relief for donations (usually 5% of revenue) and small number of companies really states how much of socially spent money was taxed. Further problem is stated when they start competing on the subject whose done more in terms of good deeds when we know that one dollar can safe a life and also large number of money can be vested equally easy, so it is not recommendable to compare but to transparently show each social

contribution, reasons behind this decision, amount spent as percentage of revenue, net income and tax implications of its decisions.

Table 42 : Social contribution as % of net income

	Social contribution (mil $)	%of Net Income
Tnk bp	90	4,30
Gazprom	150	2,00
Lukoil	100	1,60

Graph 21: Social contribution



The oil companies consider themselves as modern and progressive places but the gender structure of the Board of Directors and Management shows a few women sitting on the decision made places. It is established that European companies such as BP and Shell as well as Canadian companies allows 20% of women to decide, while the least number are in Arab countries, China and Russia. In the Executive Board this places are reserved only to man colleagues and only up to 10% places are filled with weaker gender in two Russian and Two USA companies. *(Table 43)*

Although some European and USA based companies publish how much female and minorities actually work in supervisory/professional or non professional places, it is still area of predominately man's world that see women as secretary, kitchen worker, humanitarian workers or accountants. There is no data about women/minority education in forms of numbers or percentage of total; there are no data about women management styles and how they contribute or not to further female ladder promotion, are they more suitable to be manipulated with etc.

Graph 22: % of women in management

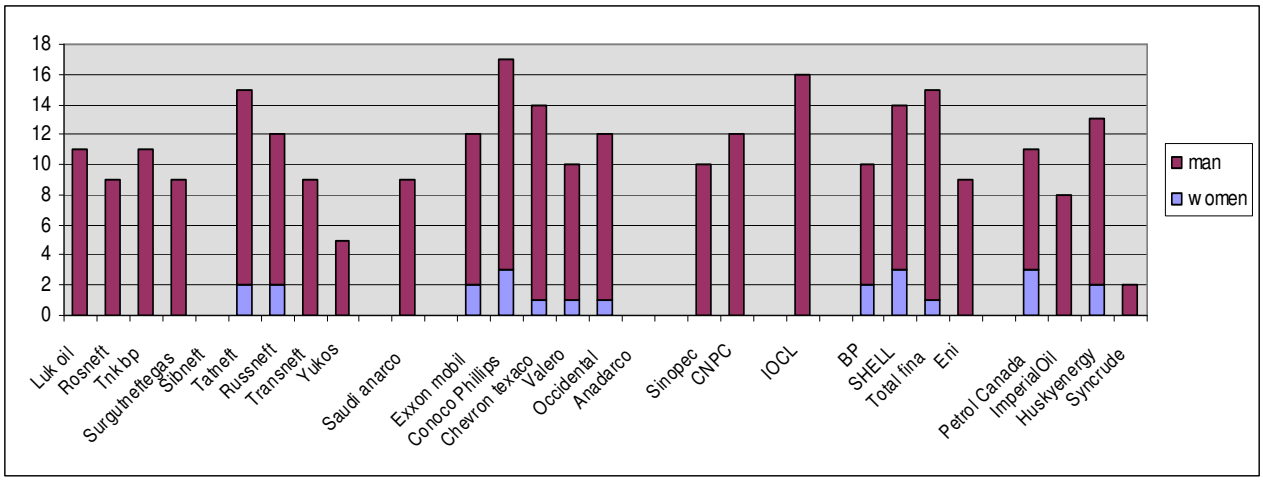


Table 43: Number of women in Board's

	Company	Napomena	Board of directors			Executive/Management Board			Auditee comittee		
			total	women	% women	total	women	% women	total	women	% women
1	Luk oil	1 f=chief accountant	11	0	-	14	1	7,14	3	0	-
2	Rosneft	1women chief account minorityChinees	9	0	-	8	1	12,50			
3	Tnk bp		11	0	-	14	0	-	4	0	-
4	Surgutneftegas		9	0	-	1	0	-			
6	Tatneft		15	2	13,33				3	1	33,33
7	Russneft	1 f=chirman of the board;1 f=finances	12	2	16,67						
8	Transneft		9	0	-						
9	Yukos		5	0	-						
10	Saudi anarco		9	0	-						
11	Exxon mobil	1 chair of board; 1 f=board of trustee	12	2	16,67				4	0	-
12	Conoco Phillips	1f=com.secretary;1f=human resources	17	3	17,65	16	2	12,50	4	1	25,00
13	Chevron Texaco	1f=ambasodor to WTO	14	1	7,14	7	0	-	5	1	20,00
14	Valero	reasury+ enviro.	10	1	10,00	15		-			
15	Occidental		12	1	8,33	7	1	14,29	6	1	16,67
16	Anadarco										
17	Sinopec		10	0	-	9	0	-			
18	CNPC		12	0	-						
19	IOCL		16	0	-						
20	BP	1 f=project analyst world bank	10	2	20,00	6	0	-			
21	SHELL		14	3	21,43	5	1	20,00			
22	Total fina		15	1	6,67	7	0	-	3	0	-
23	Eni		9	0	-						
24	Petrol Canada	f=economy,risk	11	3	27,27	6	1	16,67			
25	ImperialOil		8	0	-						
26	Huskyenergy		13	2	15,38						
27	Syncrude		2	0	-						

Further to note is that a small number of oil conglomerates that operates worldwide are willing to talk and report openly about anti corruption measures taken. It is found (from ones above mentioned) only in one companies report from Total about subjects relating to corruption. The company admits that is working in high risk countries with scores of less than 5 on the Transparency international Corruption Perception Index. To prevent unwanted bribery scandals company issues thorough reports about values of gifts allowed (not exceed 150$) , relations with vendors and contractors. Copies were distributed to employees, contractors and suppliers who signed and returned acknowledgement slips indicating that the documents had been received and they agreed to the rule. Although a high percentage of slips were returned 80% there still exist a room of 20% people who disagree with the company policy. Company also admits that some Total employers have been placed under formal investigation for possible charges as accessories to the misappropriation of corporate assets and to the corruption of foreign public officials in the Oil for Food scandal.

5.3 Oil companies develop renewable sources, environment

Environmental issues have grown in importance in the latest decade following temperature rise, ice melting, flooding, hurricanes and earthquake disasters. A Millennium Report made by IPCC seriously warns about consequences of passive ways with continuing activities that could increase already established 1,5-6% rise in temperature in the near term and move sea level upwards for 0,1-1m. Reports warns if current behavior continues hundredths of millions of people are to be exposed to increased water stress, decreasing water availability and increasing drought in mid latitude and semi arid law latitude. Up to 30% of species are in increasing risk of extinction and we are going to cause increased coral bleaching as well as species shifts as well as high likelihood of wildfire risk. It is to expect decreased cereal production in some regions, coastal area would be damaged by floods and storms with adverse effects on health: increasing malnutrition, cardio respiratory illnesses etc. The most frequent hot days would increase yields in colder environment but would cause insects outbreaks in others, melting snow and increased demand for cooling devices will reduce air qualities in cities. Heat wells will besides increased human mortality cause wild fires, alga booms and increase water demand. Heavy precipitation will damage crops, bring soil erosion, cause inability to cultivate land and reverse ground/surface water quality. Intense tropical cyclone activities increases will damage crops and trees as well as coral reef, cause power outages, disruption of public water supply and cause property loss due to flooding. Increased incidents of high salt level cause salivation of irrigation water, decrease freshwater availability and increase risk of drowning in floods.

While the use of fossil fuels to meet the world's energy needs is a contributor to an increase in greenhouse gases (GHG's) mainly CO_2 and methane in the earth's atmosphere the oil companies

should work closely with governments and with international organizations in order to reduce ozone deglutition. Gases such as carbon dioxide(CO_2), methane CH_4, nitrous oxide N_2O ozone O_3 as well as the man made ones such as fluorinated hydrocarbons (CFC, HFC) enhance greenhouse effect that stronger with the gas ability to absorb infrared radiation. The longer the time in the atmosphere the more it enhances greenhouse effect. Human activity is responsible for about 29 GT/year of CO_2 equivalent emissions each year some from agriculture, life stock, and deforestation but the greater contributor is the combustion of fossil fuels. The planet's capacity to absorb those emissions appears limited to about half of the total quantity mainly by the oceans surplus emissions. Gases can be in atmosphere for several decades and in some cases even centuries with potential to create long term climate disruption. Due to worldwide economic growth in industrialized but also in newly industrialized countries greenhouse emissions could rise by about 30% by 2030.Under UN framework Kyoto Protocol[35] lays down greenhouse gas emissions reduction targets for the emissions trading among signatories parties clean development mechanism (CDM) between the industrialized countries (Annex1 Parties) to promote the transfer of the most effective emissions reduction technologies in line with sustainable development and joint implementation projects(JI) among Annex 1Parties. Although valuable projects they are shadowed by too high cost to participate which eliminated a large number of potential users and lacking the support of big players such as USA companies .

However even though the combustion of fossil fuels contributes to anthropogenic emissions of carbon dioxide (CO_2), mankind cannot do without energy to support its development. One alternative of climate change mitigation consists of storing CO_2 generated by large point sources of emissions. The capture and geological storage of CO_2 is a process that consists of separating and recovering CO_2 from process gases or flue gases at large industrial installations than transporting it and injecting it into a suitable underground formation for storage. Three main steps are involved in the process: capture, transport and storage.

Fossil fueled power generation accounts for just over 42% of overall anthropogenic CO_2 emissions making power plants, cement mills and petrochemical plants to be places where the CO_2 capture is the most applicable.

[35] The Protocol calls for Annex I Parties to reduce their emissions by 5,2% between the 2008-20012.It took effect on February 16, 2005.By March 2006 it had been ratified by 162 countries and the European Union but not by Australia, the United States, Croatia and Monaco.

Table 44 :Annual carbon dioxide emissions from major industrial sources

	Mt CO_2/yr
Power	10.539
Iron &steelmaking	646
Cement manufacture	932
Oil refining	798
Petrochemicals	379
Oil & natural gas processing	50
Aggregate worldwide large stationary Sources of CO_2 emissions	13.468

Source: IPCC report 2005

CO_2 capture may take place at three different stages: termed post combustion[36] , precombustion[37] and ox fuel combustion decarbonization[38]. CO_2 transport can be via dedicated pipelines or in ships where the CO_2 is transported in the liquid state under conditions comparable to those of LPG transport. Storage is possible in three different ways: in depleted oil and gas reservoirs[39], in un minable coal beds[40] or in saline aquifers.

With these possibilities to reduce CO_2 negative effects remains issues to be resolved such as: cost reduction especially in the CO_2 capture phase, not established regulatory framework to better define the conditions of the monitoring of storage sites and the long term responsibility for the site as well as the problems connected with public acceptance.

Biomass is the most abundant and most versatile form of renewable energy. It currently accounts for 12% of primary energy supply worldwide with potential to meet 15-35% of the planet's requirements in 2030-2050. Although the initial phase of development of modern power technology took place in US in 1990 it stalled very soon, to appear in Europe at the end of decade. (Germany, Denmark, Netherland)Worldwide capacity has risen from 10.000MW in 1994 to 55.000 MW in 2005 where Germany alone dispose with 18.400 MW. Eight European manufactures rank among the world's top ten and account for 70% of the installations sold making current wind contribution of 0,47% of global

[36] Post combustion decarbonization: the most nature, the most costely, involves separating the CO_2 contained in combustion gases,usually by mean of a liquid solvent such as mono ethanol amine

[37] Pre combustion decarbonization: yields two separate concentrated streams of hydrogen and CO_2, facilitating CO_2 capture.Process consists of treating the fuel with steam and air or with oxygen to produce mainly carbon monoxide and hydrogen.A second step converts the CO in the presence of water then separates the resulting CO_2 for capture and storage

[38] Oxyfuel combustion decarbonization:technique yields a combustion gas highly concentrated in CO_2 and could constitute a suitable retrofit technology for existing installations

[39] CO_2 is injected into oil fils to reduce crude oil viscosity, improve mobility and thereby boosts the recovery rate – a technique known as Enhanced Oil Recovery.Drawbacks of this are that reservoirs ae not always located near source of CO_2 emissions

[40] Methan recovery is possible under this method, but present understanding is still incomplete

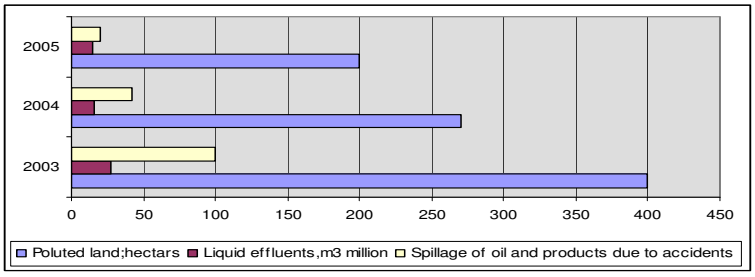
electrical power to increase. Having wind energy concentrated mainly in the Europe 72% with current price of 50 USD/MWh there is large potential of potential users around the world primarily in USA (17% ot total) what could further decreases the price to 20 USD/MWh . Further benefits are that 110TWh electricity is produced by wind avoid 58 mil tones of CO_2 worldwide.
Solar energy is the most abundant renewable resource . The average efficiency of a polycrystalline silicon cell is about 12-15%leaving one square meter of solar cells to supply 100 watts of power and generates an average of 80-150 kWh depending on the region of the world. Currently, solar is used in developed countries for radio relay stations , beacons, parking meters and as power supply to isolated off grid locations such as mountain shelters. It is important to say that today's solar panel call for about 12 kg of silicon per Kw of installed power at price of about €3.500/kW. At this price and limited silicon resources it is hard to foresee solar energy future.

Having these facts in mind four different types of action are observed in the oil world: the first one are Russian and other developing countries, the second one is American style, the third one European and fourth all others[41].

Lukoil's and Russa are actively evolved in international fight and finding solution to reduce adverse environmental impacts of GHG's. In 2005 the Kyoto Protocol which limits atmospheric emissions of greenhouse gases is ratified by Russian and came into force. In addition to that Russian government regulates new levels of compensation payments for pollution of the environment. Lukoil itself completed the program for certification of compliance for environmental protection ISO 14 001 and made ecological security program 2004-2008 with 400 environmental measures to be carried out at a cost of about $1,2billion. Lukoils aims to lower negative impact on environment, developed program for ecological rehabilitation of polluted sites and work on prevention of oil spills. In desire to develop high quality products large amounts of money are being spent on reconstruction and modernization of refineries. Lukoil works on removal of sulphour compound from the gas in order to reduce harmful emissions and use the waste water to maintain pressures. Lukoil as well as the largest number of energy companies are on track in reducing number of accidents in its operation. *(Graph 23)*

[41] *All others- Majority African/Asian countries that do not have natural resources but have rights to develop equally as the most developed countries*

Graph 23:Polluted land, spillage of oil, liquid effluents



If we put environmental costs numbers into relation we can established that this investment is only 0,57% of total revenue, or 4,9%of net income. Similar numbers with upwards trend are seen in TNK-BP whose plan is to invest 1,6% of revenue or 8,3% of income in environment. *(Table 44)*

There is a great necessity to state that there is a long way for Russian companies to start develop alternative energy mechanisms and sell them on commercial basis on the market in order to reduce GHG's improve current known technologies and actually win a part of future energy demand market with cleaner alternative technologies.

Table 45 :Environment as % of income, revenue

	mil $	% revenue	%income
Lukoil environment in 2005	320,00	0,5758088	4,96663
incl.capit.expend	160,00	0,2879044	2,483315
Lukoil plans 2004-2008 yearly	300,00	0,5398208	4,656216
Lukoil revenue	55.574,00		
Net Income	6.443,00		
TNK BP environment plan yearly	536,00	1,669054	8,369769
incl remediation/decommitioning	40,00	0,1245563	0,62461
various env.cap.inv.(water purification)	60,00	0,1868344	0,936914
transport safety	66,00	0,2055178	1,030606
environme operations	70,00	0,2179735	1,093067
facilities,pipeline integrity,red.leakage	300,00	0,934172	4,684572
TNK revenue	32.114,00		
TNK Income	6.404,00		

Source: lukoil.com tnk-oil.ru

At the other end of ocean Chevrons vision of environmental policy goes toward reducing emissions of GHGs and increasing efficiency ,investing in research development and improved technology, perusing business opportunities in promising, innovating energy technologies, supporting flexible and economically sound policy and environment. In order to achieve this aims Chevron has invested more than $2 billion in renewable and alternative energy as well as in the energy efficiency services since 2002. Year 2006 brought alliance with government, academy and other institutions to focus on emerging technologies, demonstrates projects applications of proven technologies. Chevron invested

in bio fuels business unit to advance technology and pursue commercial opportunities to ethanol and biodiesel. The facility for biodiesel will produce 27% of the countries production amounting 20 mil gallons.

Although Chevron aims and goals are directed toward environmental clean technologies expenditures are still 1% of total revenue, refineries emissions increased VOCs [42] comparing to 2002 *Table 45* (caused by venting, fugitive leaks from equipment, valves, pumps, compressors) leaving combustion still the most influential source of emissions. Chevron is dealing also with increased number of fines and penalties comparing it to 2002. *(Table 46)*

Table 46: Chevrons investment in environment

	mil usd	% revenue	% income
Total environm.	2200	1,073265	12,83697
Capital expenditure in environm.	870	0,4244275	5,076438
Preventive,control, eliminations of hazards	1300	0,634202	7,585483
Sales	204982		
Net income	17138		

source: Chevron 2006 Annual Report

Table 47: US Refinery emissions Chevron

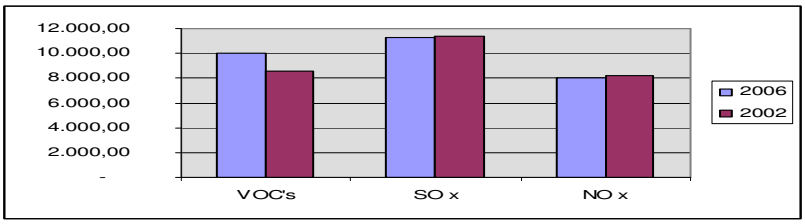
	2006	2002
VOC's	9.995,00	8.535,00
SO x	11.276,00	11.356,00
NO x	7.998,00	8.213,00
Fines number	699	278
Fines amount mil $	8,77	4,28

Source:Chevron.com

Chevrons refinery emissions change a small percentage from 2002 to 2006 for SOx and NOx but increased for the larger percentage for volatile organic compound due to the buy out of some old refinery complex. *(Graph 24).*This data actually proves very small efficiency done in reducing some of the greenhouse gases.

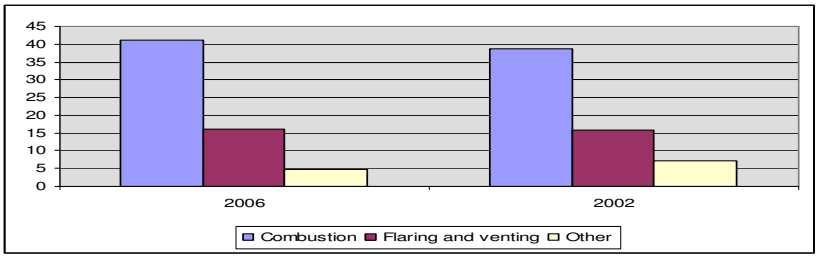
[42] VOCs=volatile organic compound

Graph 24:US refinery emissions



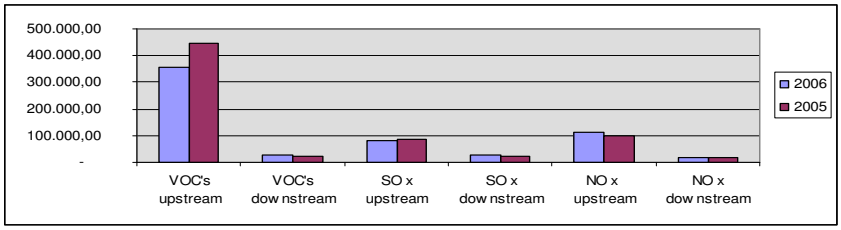
Further to note is that 2006 didn't bring any change in GHGs emissions by source neither in quantities nor in percentages of total. *(Graph 25)*

Graph 25: GHG emissions by source



Global air emissuin is largely the biggest in the upstream sector with NOx tendency to rise and VOC s to decreases in absolute values leaving SOx at the same level in bothe years. *(Graph 26)*

Graph 26:Global Air Emissions (metric tones)



The most environment consious companies are situated in the EU. BP announced to invest 50 mil$ a year over the next 10 years in lowering carbon power generation. To manage three fold increase in manufacturing capacity of solar photovoltaic panels, to work on growth of wind power production to 450 Megawatts. Advancing development of the world's leading commercial hydrogen power plant and to construct gas co generation power plant totaling more than 700MW reducing projected carbon dioxide emissions as a consequence are the further BP ways of doing.

Another European giant Total is proud to be Europeans leading marketer of bio fuels and currently blends 900.000 metric tons into automotive fuel sold in Europe. It is heavily involved in solar energy buy buying shares in the solar producing companies. In partnership with the Argentine Ministry of

Energy ,the World Bank, the Global Environmental Facility and the local electricity supply utility Total (Tenesol) installed 1.416 solar panels in 177 schools of the Salta province (Argentina) in 2004.Company established cooperation with Shell in order to increase France wind energy from the wind farm offshore project in Dunkirk installing 90 MW.

Although European oil companies advances in front of their American, Russian or other counterparties these achievements are still limited in large number of cases in infant stages, not widely developed and lacking the more wide and solid incorporation in the life of citizens. Some projects involving renewable to be accessible to remote undeveloped parts of Earth are valuable but made in smaller amounts than necessary, don't imply consistent yearly implementation and have a great marketing effects what further brings benefits on the market position to the company involved.

6. CONCLUSION

Oil was during its history source of many wars and disputes, strongly correlated with weapon trading, cause for many environmental accidents and being one of the major sources for global worming by increasing CO_2 emissions. It is established that oil price follows random jumps with mean reversion trends carrying within its sudden large increase GDP reduction, inflation, unemployment and rise of interest rates. According to IEA global energy demand is projected to increase more than 30% by 2030 with 1/5 of the increase accounted for by transportation, almost entirely in the form of oil based fuels. Oil will remain the largest single source of fuel, with demand projected to rise from the 2005 rate of 84 million bpd to 116 mbp in 2030.

This facts as well as strong profits reported lately from the oil companies has risen some important questions: how oil companies use their profits, do they cooperate with governments in finding solution to reduce harmful emissions and develop alternative fuels, how they contribute to society, treat their employees and ways of operation worldwide.

By examining the most significant oil company's author found that all of them experienced large increase in assets and revenues, have social programs, recognize the value of people and started recognizing environment as the important factor in their operations. However, having good results for the almost 100years of operation they are lagging behind smaller not so successful companies in % of social welfare to total revenues and income, % of environmental investments as total revenue and small steps taken in modernization of current refineries and introduction of renewable into business, still having a small number of women/minorities in its managing structure, not reporting/sustaining from bribery in the countries they operate. In addition to these facts, author founds three distinctively ways of thinking valid for: Russian, American and Europeans oil companies.

Russian company's revenues come largely from the export of natural resources what is signal for existence of Dutch disease. Rightly so, without clear rules from government about tax structure and export quotes, allocation of tax money to industries and alternative energy there is vacuum of uncertainties where each party seeks for its own interest what further undermines proper strategy and without developed industry for goods and services. Russian oil company's priorities are obtaining ISO certificates and reducing spillage and other harmful effects, they do not examine or develop any renewable leaving place for foreign companies to satisfy future energy demand in this way. Searching tax heavens in its performance with sounds of bribery could in the near future bring just another case of Bankruptcy act under chapter 11.

The second approach is noted by American companies. They are not so burdened with different taxes with time frame of three years back. On contrary they freely contribute to chosen political parties given them millions of dollars yearly, refusing tax payment, being supported by public that enjoys the lowest possible gasoline prices in the world. Although they are trying to promote environmentally consciousnesses with such a huge profits from the core business, alternatives are found to be expensive, not necessary part of their business core activities and are still undeveloped in country. With huge oil consumption and largest CO_2 per capita in the world, Americans didn't develop any strong renewable energy industry due to lack of transparent taxation going to promoting wind, geothermal, sun, tidal. This lack of feeling for a public good could bring country into finding instant solutions that can be/had been deadly for weaker resource rich ones. Women and minorities are recognized as value in society but there are still a lots of room for improvement in the field.

Third approach can be seen as something between. European companies are heavily taxed, with clear rules and no temporal shifts also don't having a clear picture where they tax money is allocated to by the government. Few conglomerates are willing to expose anti corruption detail from their operations in the high risk countries. Companies are far ahead in developing renewable resources and with corporation with governments, institutions worldwide develop and implement wind, solar and biomass projects. The result of these activities are clear bio fuel increase goals incorporated in EU legislation, largest percentage of wind energy in Europe, involving in solar energy for 20 years, having the first commercial scale grid connected to wave power in Spain. But these projects are still below 1% of profit and revenue in the largest number of cases, didn't manage to lower extremely high costs of renewable installation in a way don't letting the competition to interfere in core business.

Author believes that growing revenues from oil should be reallocated as visible results in building a renewable energy sources like having an obligation in one year to build a determined number of wind, solar, hydro, gas, biofuels energy sources. This obligation is of primary importance due to exhaustible nature of oil, the greatest CO_2 emissions from oil combustion as well as from transport sector and limited amount of time in which due to the global worming high likelihood of human losses, animal and natural resorts disappearance is possible. If oil companies can't fulfilled tasks than government should react in imposing certain f.exam. 10% on revenue charge and employ contractors to reach the goal. High revenues from oil should be employed to advance society socially and on benefit in areas where company operates.

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