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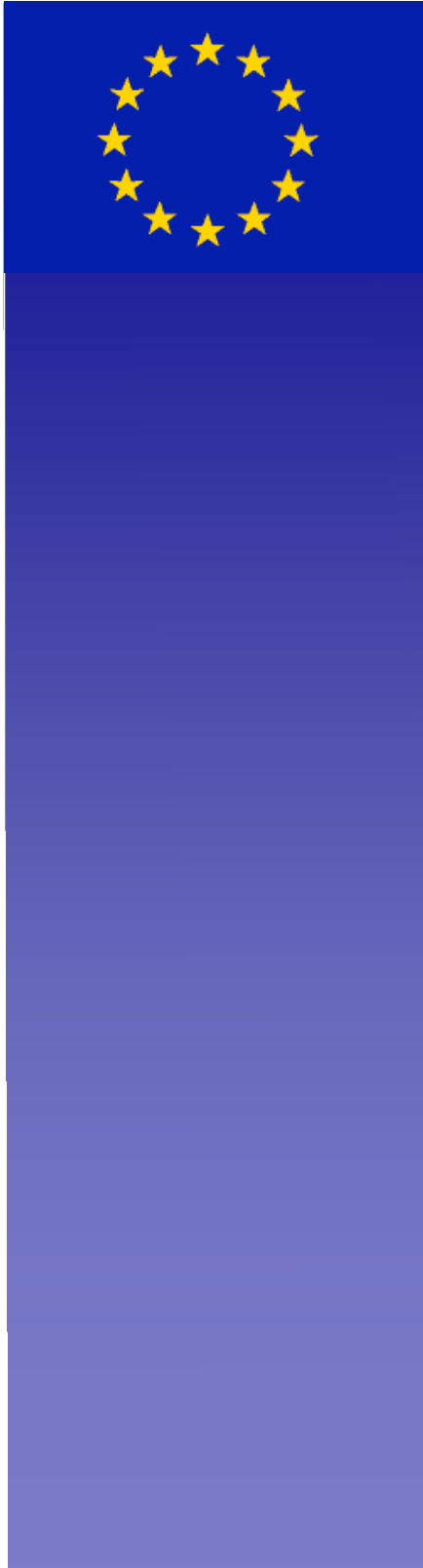
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## **Man is the only animal that trips twice over the same stone**

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University of Miami

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*Robert Schuman*

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# Man is the only animal that trips twice over the same stone

María Lorca-Susino<sup>1</sup>

## Introduction

Since mid-2009 the world has been experiencing a feeble economic recovery that has been halted by an increase in oil prices which have negatively affected the recovery. History has taught us that the world has developed thanks to major industrial revolutions which have foster economic growth. The first industrial revolution took place in the 19<sup>th</sup> century when engineers started using refined coal which helped the first step of industrialization. The second major economic revolution came in the 20<sup>th</sup> century when the world moved forward due to the development of the petroleum industry with fuel oil and gasoline as a source of energy. The world's industrial performance and economic growth in the 21<sup>st</sup> century is still stuck on fuel oil and gasoline a limited resource which has become a source of political and economic instability.

The National Bureau of Economic research publically announced on September 20, 2010 that the Business Cycle Dating Committee determined “that a trough in business activity occurred in the U.S. economy in June 2009”<sup>2</sup> marking the technical end of the recession that began in December 2007<sup>3</sup> and the beginning of the expansionary phase of the business cycle. This recession lasted 18 months making it the longest recession since World War II. The Federal Reserve has estimated that it would take the economy “12 years to recover the previous level of employment.”<sup>4</sup> For this reason, this can be labeled as the *Great Recession of the 21<sup>st</sup> century*.

The following graph shows that since January 2009 real Growth Domestic Product (GDP) has been improving in the US reaching on the fourth quarter of 2009 a high growth of 5.01%, but declining ever since. It is important to remember that the NBER analyses GDP growth performance and declares expansion when there has been two consecutive quarters of GDP growth. By the same token, it declares a recession when the economy suffers two consecutive quarters of GDP decline. The fact that GDP growth since 2010 has been dropping from close to 5% at the beginning of 2010 to 1,8% in March 2011 is triggering a strong debate that the world could be suffering from what is called a “double dip” recession.

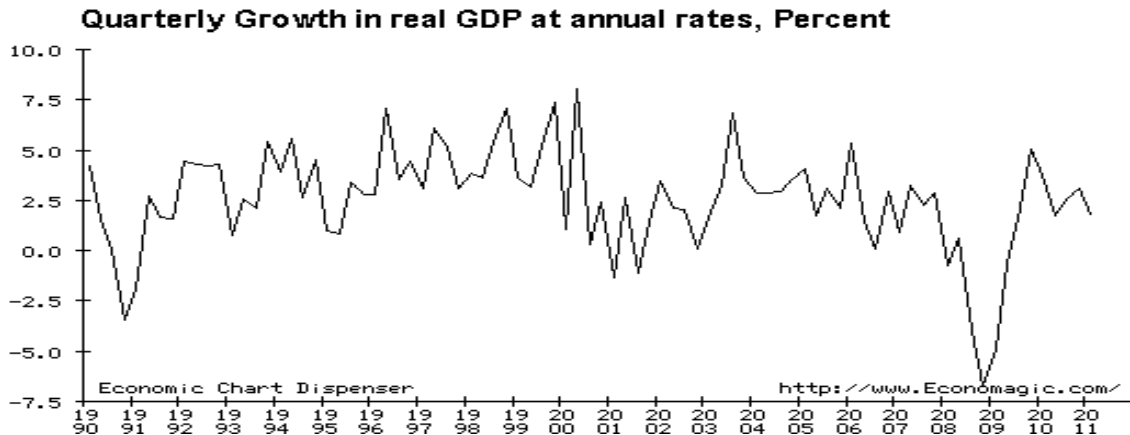
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<sup>2</sup> National Bureau of Economic Research. <http://www.nber.org/cycles/sept2010.html>

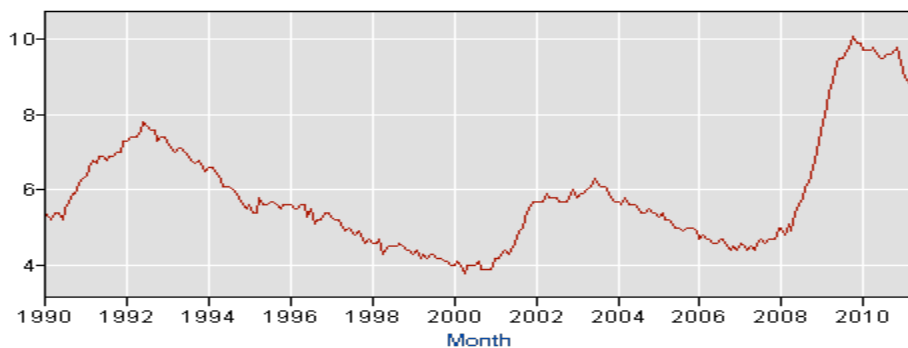
<sup>3</sup> National Bureau of Economic Research. <http://www.nber.org/cycles/sept2010.html>

<sup>4</sup> National Bureau of Economic Research. <http://www.nber.org/cycles/sept2010.html>



Source: Graph provided courtesy of Economagic. <http://www.economagic.com/em-cgi/data.exe/var/rgdp-qtrchg>

Another graph that is important to understand the economic situation is the unemployment rate which increase from levels of around 5% on January 2008 to all time highs of close to 10% on November 2008. In this short period of time, more than nine million jobs have been lost—two millions alone in the construction sector. Since November 2009, the unemployment rate has been improving, and on March 2011 the unemployment rate reached 8.9% which was seen as a ray of hope. However, the latest unemployment rate reported in May shows an increase in the unemployment rate to a high 9.1%. Despite this set back on the unemployment rate in the month of May, the report shows that there is a significant reduction in the rate of discourage workers, increased in hours worked, and reduction in the part-time rate of employment. The economy is caught in a negative vicious cycle as the world is suffering from a status-quo in which growth is not enough to create employment. The problem is that firms are not hiring because they are not sure that consumers would demand, and consumers would not demand because they are not confident with their job situation. Still, the latest Small Business Optimist Index published by the National Federation of Independent Business (NFIB)<sup>5</sup> explains that for the past months, small and medium size firms have not been firing as they used to, although the hiring is very timid.



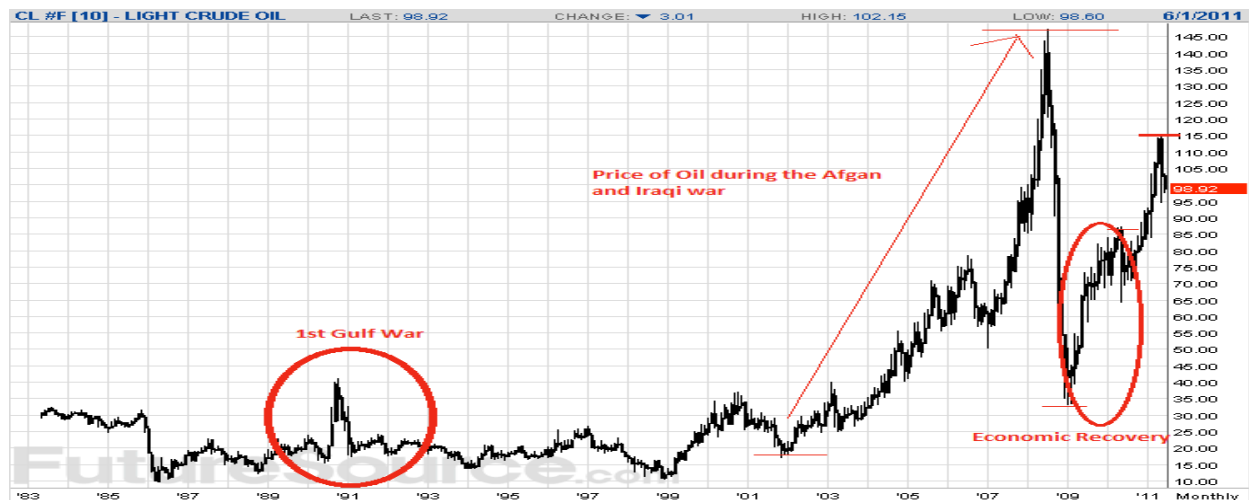
Source: Bureau of Labor Statistics. <http://data.bls.gov/pdq/SurveyOutputServlet>

<sup>5</sup> National Federation of Independent Business. <http://www.nfib.com/Portals/0/PDF/sbet/sbet201106.pdf>

Two world events of the past few months have triggered the change in the economic trend that the world is experiencing since the beginning of 2011. For starters, on March 11 Japan was hit by an earthquake and a tsunami which have had not only a dramatic human toll but also a negative economic effect worldwide due to the global parts-supply disruption. Also, March saw a number of revolutions in countries in the Middle East which have affected the supply and price of gas worldwide. Both these events have affected the economic recovery and the world is going to face a double dip recession.

### Oil prices: Past, Present, and Future

Every single bellicose conflict of the past 75 years has started as a political dispute that has used oil supply as hostage.<sup>6</sup> The first episode was in October 17, 1973 that led to the so-called First Oil Crisis that sent the world into a profound economic recession due to the increase in the price of oil that jumped from under \$10 a barrel to about \$40 a barrel measured in today’s dollar. This time, members of the Organization of Arab Petroleum Exporting Countries (OAPEC) decided to stop shipping out oil to those countries that during the Yom Kippur War supported Israel in its conflict with Syria and Egypt. The second episode took place in January 1979—the Second Oil Crisis— due to political unrest in Iran ended with the Shah’s reign and led to a reduction in production from 6 million barrels per day to 1.5 barrels per day with prices skyrocketing from \$40 to \$80 a barrel in today’s dollars. The third episode was during the First (Persian) Gulf War, from August 1990 to February 1991, when the world suffered another increase in the price of oil. The beginning of the Afgan and Iraqi war was accompanied by a dramatic increase in the price of oil as represented in the graph below.



Source: Graph provided courtesy of Futuresource.com

Since February 2011, the world is experiencing a number of social revolts in the Middle East that are negatively affecting the price of oil. The civil unrest and “civil war” in Tunisia in February spilled over to other countries in the area such as Egypt and Libya whose societies—who are asking for a political change—are being oppressed by the national military. Governments in most of this countries are currently once again using oil supply as leverage; as a consequence the price

<sup>6</sup> It is not the purpose of this particular article to elaborate on the nuts and bolts of the relationship between conflict, oil price and economic slowdown per se. That might be the topic of a future article.

of oil has suffered in increased in a matter of two months from levels of \$84 to close to \$115 a barrel. The price of oil in the last year is portrayed in the following graph. The situation has been such that some OPEC countries are willing to increase its production of oil in order to help reduce its price to calm down expectations on supply and future prices and help economic recovery.



Source: Graph provided courtesy of Futuresource.com

However, it is important to mention that the price of oil not only highly related to political and bellicose conflicts but also by the business cycle. When there is a recession, there tend to be less demand for oil which reduces the price, and when there is an expansion there is an increase in the demand; thus, there is an inverse relationship between demand and price.

History has shown that when the economy is growing or recovering from a recession there tends to be more demand for oil which pushes the price up and eventually becomes a drag on economic growth itself. In the case of the US, it is estimated that “the impact of crude oil on GDP generally assign about a 0.25% drop in U.S. GDP for every \$10 increase in crude oil.”<sup>7</sup> It is important that when this drag takes place on the economy, it has been proven that there is a second effect in the transportation sector represented in the Dow Jones Transportation Average (DJTA).

The Dow Jones Transportation Average (DJTA) “is the most widely recognized gauge of the transportation sector. It is also the oldest index used today, even older than its more famous brother, the Dow Jones Industrials (DJIA). The Transportation Average was the first stock index developed by Charles Dow in 1884.”<sup>8</sup> The graph below shows the evolution of the DJTA since 2008 to June 2011 which demonstrates that when oil prices decrease it is cheaper to drive trucks or fly planes. As a consequence, all 20 components of the DJTA trade higher.

<sup>7</sup> VIX and More. “Chart of the Week.” <http://vixandmore.blogspot.com/2011/04/chart-of-week-crude-oil-and-transport.html>

<sup>8</sup> Investing Answers. “Dow Jones Transportation Average.” <http://www.investinganswers.com/term/dow-jones-transportation-average-djta-1302>



Source: Graph provided courtesy of CNN Money. <http://money.cnn.com/data/markets/dowtrans/>

### Oil Producer Countries: Oil as a Political Tool for Economic Leverage

On June 8,<sup>9</sup> the Organization of the Petroleum Exporting Countries (OPEC)<sup>10</sup> was not able to reach an agreement to raise output production. In particular, it was reported that although Saudi Arabia<sup>11</sup> was inclined to and will increase production, Iran, Venezuela, and Algeria refused this proposal since they want to maintain the price of oil above \$100. In fact, “Saudi Arabian oil officials, backed by Kuwait and the United Arab Emirates (UAE), pressed other nations at the meeting on Wednesday for an increase of up to 1.5m barrels a day and to cut prices down to \$80 per barrel, in an attempt to calm market nerves.”<sup>12</sup> The IEA urged on February, 2011 that oil production had to be increased in order to safeguard the economy recovery. The IEA announced that it was prepared use all tools available to increase oil production; a unilateral approach that has only been implemented twice. The first increase in stock took place in 1991 during the Iraqi war since Baghdad’s invasion of Kuwait reduced production by 4.3m barrels per day. The second unilateral increase took place after Hurricane Katrina (2005) reduced production by 1.5 barrel per day. It is important to clarify at this point that there is a difference between the Brent Crude from the North Sea and the West Texas Intermediate, which are the two most important benchmarks in oil prices referred in news reports. Nonetheless, both prices trade closely. The table below shows a summary of the increase in the price of oil suffered in each of the conflicts mentioned.

<sup>9</sup> The next OPEC meeting is scheduled for Dec. 14-15 in Vienna.

<sup>10</sup> The OPEC was founded in September 1960 in Baghdad (Iraq) by five members: Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. These founder members were joined by Qatar (1961), Indonesia (1962), Socialist People’s Libyan Arab Jamahiriya (1962), the United Arab Emirates (1967), Algeria (1969), Nigeria (1971), Ecuador (1973), Gabon (1975) and Angola (2007). Some countries have suspended memberships for different reasons: Gabon and Indonesia. Currently, the Organization has a total of 12 Member Countries. There are a number of countries that are not OPEC members which contributes with their production to the world supply: Russia, the United States, China, Mexico, Canada, Norway, and Brazil.

<sup>11</sup> In Saudi Arabia the cost of gas is only 12 cents per liter.

<sup>12</sup> Peakoil. “OPEC fails to reach agreement on oil supply” June 9, 2011. <http://peakoil.com/publicpolicy/opecc-fails-to-reach-agreement-on-oil-supply/>



<b>Event</b>	<b>Oil Price</b>	<b>Time Frame</b>
1 <sup>st</sup> Oil Crisis in 1973	From \$12 to \$40	6 months
2 <sup>nd</sup> Oil Crisis in 1979	From \$30 to \$80	2 months
Persian Gulf War 1990	From \$20 to \$40	2 months
Afgan and Iraqi War 2001 to November 2009	From \$20 to \$145	5 years
Arab Spring Revolt 2011 from February to June	From \$84 to \$115	4 months

At the current high price of over \$100 a barrel, it is expected that OPEC cartel will get a benefit that can be estimated to reach \$1,000bn in exports revenues in 2011 which surpasses the record high obtained in 2008 when revenues reached \$990bn. Venezuela is against increasing production and lower price. There could be many political explanations, but there might be one economic reason. On the economic side, Venezuela has its fiscal budget set at \$40 per barrel, as the price of oil is in a strong uptrend; Chavez announced on April 22, 2011 that he was signing a decree by which if the price of oil reached a level between \$70 and \$90 per barrel, 80% of the oil revenues would go directly to the Fondo de Desarrollo Nacional. Further, if the price is between \$90-\$100 per barrel 90% will go to this fund, and if the price is over \$100 Chavez will transfer 95% of the revenues.<sup>13</sup> This Fondo de Desarrollo Nacional has been created to finance different social projects and the idea of signing this decree is to “incrementar el aporte fiscal y el aporte del recurso petróleo al desarrollo.”<sup>14</sup> It is curious that just a few months ago, President Chavez was “poised to launch a bid to transform the global politics of oil by seeking a deal with consumer countries which would lock in a price of \$50 a barrel.”<sup>15</sup> Chavez can make this proposal of fixing prices because this natural resource upon which the world economic growth depends is managed by a cartel. On the political side, it could be that Venezuela is using this extra money to finance a number of “regime change” in the area; for instance, it is believed that Hugo Chavez has somehow helped economically the election of Peru’s new president.<sup>16</sup>

The main problem with oil production is that it is a limited natural resource upon which rest the social and political stability and economic performance of the world. Oil is a natural resource that is not affected by the free forces of market demand and supply; on the contrary, it is managed by a cartel. In this case, a cartel is a group of countries which produce oil that get together to set prices and quotas which might or might not satisfy demand. In general terms, in the US cartels of any sort are illegal, however internationally there are no limitations to cartel formation and this is the reason why the OPEC exists outside the US legislation. The OPEC—which supplies about 40% of global oil—has always been the most beneficiaries of high oil prices which systematically soar due to political turmoil in those same countries that own this resource. History has shown that many oil producers are using revenues obtained from a high oil prices to increase public spending to protect governments against social unrest. For instance, it was reported on March 6 that “Saudi security forces have detained at least 22 minority Shi’ites who protested last week against discrimination, activists said on Sunday, as the kingdom tried to keep the wave of Arab

<sup>13</sup> El Nuevo Diario. “Chávez fortalece fondo social por subida precio barril petróleo,” March 22, 2011. <http://elnuevodiario.com.do/app/article.aspx?id=239177>

<sup>14</sup> International Business Times. “Chávez redistribuye ingreso extraordinario por precio crudo,” March 22, 2011. <http://mx.ibtimes.com/articles/12297/20110422/chavez-redistribuye-ingreso-extraordinario-por-precio-crudo.htm>

<sup>15</sup> Guardian. “Chávez seeks to peg oil at \$50 a barrel”, April 3, 2006. <http://www.guardian.co.uk/business/2006/apr/03/venezuela.oilandpetrol>

<sup>16</sup> El Comercio. “Ex funcionario de la OEA afirmó que Hugo Chávez financia a Humala”, June 2, 2011. <http://elcomercio.pe/politica/768204/noticia-ex-funcionario-oea-afirmo-que-hugo-chavez-financia-humala>

unrest outside its borders.”<sup>17</sup> However, the country that same week announced that the country enjoyed a balanced budget with the price of oil at \$84 a barrel; since the price of oil was well above \$100 a barrel the Saudi government declared a multiyear spending package of \$129 bn and is expected to spend about \$35bn in 2011.<sup>18</sup>

Although, oil prices are reaching record highs, the US dollar is reaching record lows. As a consequence, oil producer countries are receiving “devalued” dollars which are now giving a lower purchasing power to those countries receiving them. This is the reason that explains that every time there is a drop in the value of the US dollar there is a movement that argues the need to price the barrel of oil in a basket of currencies. The purpose of this new proposal is to reduce the currency risk associated with the US dollar. The following graph shows the evolution of the US Dollar Index.



Source: Graph provided courtesy FutureSource.com

It is clear that oil is a source of economic revenue for countries but not only for those producing it, but for all countries because governments charge the price of oil with taxes which become government revenues: the price of oil paid at the pump represents the price of oil plus a series of taxes. In fact, the price of a barrel of oil was on June 10, 2011 \$99.26 per barrel which will mean that at the pump the price should be around \$2.36 per gallon; however, the average price in the US was \$3.781<sup>19</sup>. What makes the difference can be explained by the effect of taxes. According to the Energy Information Administration the average retail price for a gallon of gas in the US was \$1.91 in 2000, and in April 2011 the average price was \$3.80. The table below shows the different percentage costs that contribute to the final price of oil at the pump.<sup>20</sup> This table shows that in 2011, only 69% of the \$3.8 paid at the pump is the price of oil. It is important to mention that the comparison between 2000 and 2011 shows that the cost of crude oil has increased from 48% to 69% which means a significant increase in real terms from \$0.91 to \$2.6. The costs of “Distribution and Marketing” and “Federal and States taxes” have both suffered a decrease in percentage terms and in real terms. However, the cost of refining cost and Profits have remained

<sup>17</sup> Before the Tape. “Social Unrest Spreading to Saudi Arabia,” March 6, 2011. <http://www.beforethetape.com/?p=424>

<sup>18</sup> Sylvia Pfeifer, Javier Blas and David Blair. “Opec set for \$1,000bn in export revenues,” Financial Times, March 29, 2011.

<http://www.ft.com/intl/cms/s/0/7fa28b96-5a2f-11e0-86d3-00144feab49a.html>

<sup>19</sup> US Energy Information Agency. “Gasoline and Diesel Fuel Update.” <http://www.eia.gov/oog/info/gdu/gasdiesel.asp>

<sup>20</sup> Energy Information Administration, “A Primer on Gasoline Prices,” Energy Information Administration Prices, Brochure #: DOE/EIA-X040, May 2008. [http://www.howstuffworks.com/framed.htm?parent=gas-price.htm&url=http://tonto.eia.doe.gov/cfapps/STEO\\_Query/steotables.cfm?periodType=Annual&startYear=2005&startMonth=1&endYear=2009&endMonth=12&tableNumber=9](http://www.howstuffworks.com/framed.htm?parent=gas-price.htm&url=http://tonto.eia.doe.gov/cfapps/STEO_Query/steotables.cfm?periodType=Annual&startYear=2005&startMonth=1&endYear=2009&endMonth=12&tableNumber=9) (Accessed June 13, 2008)

at 16% but in real terms there has been a significant increase due to the increase in the price of crude oil. In 2000, taxes added up to 52% of the final price of gas (\$0.9936) and in March 2011 taxes represented 31% of the final price or \$1.178

	2000	2011 <sup>21</sup>
Price of a gallon of gas at the pump	\$1.91	\$3.80
Distribution & Marketing	12% → \$0.229	5% → \$0.19
Refining Costs & Profits	16% → \$0.3056	16% → \$0.608
Federal & State Taxes	24% → \$0.4585	10% → \$0.38
Crude Oil	48% → \$0.9168	69% → \$2.6

By the same token, the price of oil is exorbitant in the European Union where curiously the price of crude oil is by far less than total taxes. In fact, the table below shows that in 2003 total taxes represented an impressive 65.5% of the final price of gas at the pump, and in 2007, total taxes represented 51.8%. The table below compares the price of oil before taxes as well as all the taxes that are charged in 2003 and 2007.<sup>22</sup>

Price in Euros	2003	2007
Total Price with all taxes	€0.8169	€1.0486
Price BEFORE TAXES	0.3005	0.5048
VAT	0.1127	0.1446
Special taxes Hydrocarbon	0.3797	0.3750
Special taxes retail sales	0.0243	0.0240
TOTAL TAXES	0.5354	0.5436

## Final Words

The world is addicted to oil and this addiction must end as soon as possible. According to the latest studies it has been calculated that worldwide consumption will increase by 1.4 million barrel a day in 2011 to average 89.4 million a day. Between 2000 and 2005, there has been an increase in the demand by 7.3 million barrels per day and between 2005 and 2007 the increase has been 1.4 million barrel a day.<sup>23</sup> The table below shows a detailed analysis in consumption from 1980 to 2011<sup>24</sup> and shows that the US has been the block which the lowest increase in consumption while Asia shows an impressive increase of 165.4%. In fact, the study shows that China has increase its demand for oil an extraordinary 371.6% in the last twenty years making it the country with the highest increase in demand in the entire world. However, this demand represents a period of time when China has just beginning to join the free market and when the full estimated population of China—1.3 billion—is not still fully integrated. Just imagine what

<sup>21</sup> US Energy Information Agency. "Gasoline and Diesel Fuel Update." <http://www.eia.gov/oog/info/gdu/gasdiesel.asp>

<sup>22</sup> El Blog Salmon. "El reparto de Impuestos en el Coste de la Gasolina." <http://www.elblogsalmon.com/indicadores-y-estadisticas/el-reparto-de-impuestos-en-el-coste-de-la-gasolina>

<sup>23</sup> Econobrower. "Lower oil Prices" May 8, 2011. [http://www.econobrower.com/archives/2011/05/lower\\_oil\\_price.html](http://www.econobrower.com/archives/2011/05/lower_oil_price.html)

<sup>24</sup> Index Mundi. "Crude Oil Consumption by Year." <http://www.indexmundi.com/energy.aspx?region=eu&product=oil&graph=consumption>

would be the effect on the demand and price of oil when each of the estimated 1.3 billion Chinese own a car rather than a bike.

<b>Country</b>	<b>1980 (in thousand)</b>	<b>2011 (In thousand)</b>	<b>Change</b>
WORLD	59,901.24	84,213.48	40.5%
USA	17,056	18,010	5.59%
<b>Asia</b>	<b>11,568.63</b>	<b>30,712.34</b>	<b>165.4%</b>
<b>China</b>	<b>1,765.00</b>	<b>8,324.00</b>	<b>371.6%</b>
South America	2,633.50	4,932.95	87.7%
Brazil	1,148.00	2,522.00	
C. America & Caribbean	945.33	1,128.84	19.1%
Cuba	202.50	181.00	
Africa	1,402.75	3,120.80	122%
Egypt	260.00	716.00	
Europe	12,994.45	18,823.59	44.5%
Russian Federation	4,423.16	2,740.00	

On March 31, 2011, the US President declared the need to reduce oil demand in the country and even declared a broad plan to cut a third of the 10 million barrel of oil a day imported from abroad. There are many alternatives that have been discussed but no option has been fully put into practice. There have been talks to tap into the nation's large reserves of natural gas, increase reliance on renewable bio-fuels made from ethanol, decrease reliance on oil by making cars and trucks more fuel-efficient, and even invest in high speed rail and mass transport. Although, no alternative option is being pursued, at least it is agreed that fossil fuels are a limited natural resource tied to pollution and that an alternative source of energy is needed.

The world witnessed two major industrial revolutions with the introduction of refined coal in the 19<sup>th</sup> Century and later with the discovery of fuel oil and gasoline as a source of energy in the 20<sup>th</sup> century. Now, the world is stuck on oil for economic growth and industrial development. Steiner, Clark, and Yumkella have explain that a total of 190 countries representatives who meet in the United Arab Emirates had concluded that that renewable energy is a highly promising option to break free from world oil demand.<sup>25</sup> However, the main problem to diversify from oil rests on technical challenges and economic limitations since it is estimated that the cost of triggering a renewable revolution will range between 3 trillion to more than 12 trillion between now and 2030.<sup>26</sup> It is important to mention that diversification from oil might not be a cheap option but it is not impossible since Brazil provides us with a successful example. However, "Brazil's path has taken 30 years of effort, required several billion dollars in incentives and involved many missteps."<sup>27</sup>

<sup>25</sup> Akim Steiner, Helen Clark, Kandem H. Yumella. "The Renewable Future," May 9, 2011. Project Syndicate. <http://www.project-syndicate.org/commentary/asteiner12/English>

<sup>26</sup> Akim Steiner, Helen Clark, Kandem H. Yumella. "The Renewable Future," May 9, 2011. Project Syndicate. <http://www.project-syndicate.org/commentary/asteiner12/English>

<sup>27</sup> Larry Rohter. "In Brazil, fuel of future has already arrived," April 10, 2011. <http://www.nytimes.com/2006/04/10/world/americas/10iht-ethanol.html>