

**PEAK OIL**  
**Social, economic, political and financial impacts and historical background**  
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**An Historical Foundation**

As a starting point, we may take the impact of a comet, 4000 years ago, which put up a huge tidal wave that swept the world drowning many of the inhabitants and placing marine mammals in the landlocked Black Sea. There were however some survivors including those in the mountains of the Middle East, who came to wonder why they had been chosen to be spared. In due course, they descended from the mountains and adopted a monotheistic religion, picturing a divine power that had saved them.

Settled agriculture had taken over from hunting and gathering. Harvests were reaped but once a year, meaning that crops had to be stored to feed the community over the rest of the year. This was a critical function in which the temples and the government played a key role. At first, they simply stored the farmers' crops, returning as much as they received, but then discovered that they could keep back a certain percentage to give to privileged members of the community, a process which delivered political power. In effect, this amounted to the origin of banking, investment and money. There were of course also excesses, which some priests tried to curb. The Old Testament book of Deuteronomy set the rules for money-lending with the following words: *Unto a stranger thou mayest lend upon usury; but unto thy brother thou shall not lend upon usury.*

Another turning point came when someone found a nugget of gold in a riverbed. We may suppose that he or she was attracted by its shining character and showed it to a neighbour, who liked it even more, offering to exchange it for a sack of corn. This practice took hold as gold became a medium of exchange, setting the price for food and services. Successful people stored it, thereby preserving their wealth and power, which could be passed on to their descendents. But gold was heavy stuff to carry around which led a store-keeper to offer to store it against a receipt. In the days before paper, the receipt was written on a clay tablet, as in Babylonia, or as knots on a length of string, as practiced later by the Incas in Latin America.

A further development came when a shrewd store-keeper realised that he could issue more receipts than he had gold in stock because not everyone would want to cash in simultaneously, which laid the foundation for fractional banking.

The Roman Empire was a remarkable construction lasting almost a thousand years, having a huge influence on subsequent European history and civilisation. It commenced as a successful kingdom in Italy in around 500 BC, which established laws written on Twelve Bronze Tablets that significantly included provision for debt foreclosure, inheritance and property rights. Food was naturally a critical element, and when the local fields could no longer support the population, it had to be brought from farther afield. This led to the expansion of the Empire, which at its peak extended from the Middle East to Britain. Even Libya, which was then enjoying a more fertile climate became an important supplier of wheat. This trade involved finance and banking to cover the cost of transport and the time-lag between harvest and consumption. Rome had adopted gold and silver as a form of currency, and it also ran a system of slavery to provide the wealthy landowners with cheap labour, outside the normal financial system. Its silver largely came from mines at Rio Tinto in Spain, and the eventual fall of the Empire in 476 AD was partly due to the fact that the mines had flooded after hitting the water table so that they could no longer supply the money needed to pay mercenary troops to defend the Empire against marauding Germanic tribes from the North.

The influence of Italy re-emerged during the Middle Ages with the development of Venice, which had become an important trading port, importing goods from the eastern Mediterranean. Overseas trade obviously called for the transfer and loan of funds on a major scale, leading to the establishment of banks. In 1516, the Venetian authorities gave an old iron foundry (*ghetto* in Italian) to the bankers as a base for their operations. Other Italian city-states, especially Florence, later followed

this example with the establishment of important banks to facilitate trade. They came to have an enormous influence, funding not only European wars but artistic and cultural developments as well. Evidently, palaces and Cathedrals represent investments in a cultural sense, even if they were built on the backs of an exploited poor. The kings of Europe were crowned in Cathedrals to emphasise their *Divine Right* to govern.

The Spanish royal family also developed a thirst for gold and silver, prompting the conquest of Latin America, where in 1545 a rich deposit of silver at Cerro Rico at an altitude of 15,830 feet in the Bolivian Andes was exploited. At its peak, hundreds of ships a year sailed to Europe from Latin America with cargoes of gold and silver, but it was in a sense inflationary, as, in principle, money has to reflect actual useful work, ultimately producing food with which to feed the population. The Spanish Empire did not survive.

The Centuries rolled by as kingdoms and empires waxed and waned. Chapters of prosperity commonly over-reached themselves leading to economic recessions and political turmoil. There were in addition natural influences, such as floods and famines, pandemics, including the Black Death, and climate changes with minor ice ages, notable from 1500-1550 and from 1770-1800. It turns out that these were linked, because the pandemics led to a fall in agriculture allowing the forests to expand and capture more carbon dioxide, whose concentration influences the climate. But overall, it was an epoch of relative stability as the population no more than doubled over eighteen centuries from the birth of Christ. Throughout this time most people relied primarily on the energy of their own muscles, although also tapping the power of draught animals, wind and water.

### **The Modern Age**

Prehistoric cave man had shaped flints into knives and arrow heads, before people turned to bronze, iron, and later steel, for tools and weapons. Metal working became an important industry, covering everything from forging ploughs, to shoeing horses or making swords and helmets for soldiers. The discovery of gunpowder provided a further stimulus and more sophisticated metallurgy. Smelting required heat, which was at first provided by wood and charcoal, before people turned to coal taken from outcropping seams.

Britain, as an island nation, had a tradition of seafaring which stimulated world trade that evolved into an Empire, with India becoming the jewel in the Crown. It was also well endowed with coal that facilitated the growth of industry to meet the demands of its trading empire. The coal pits were progressively deepened to become regular mines but in due course flooded when they hit the water table, following the precedent of the Rio Tinto silver mines, mentioned above.

Draining the mines led to one of the most important technological developments of all time. The bucket was supplanted by the hand pump, which evolved into the steam pump. In essence, it comprised two pumps side by side, with steam from a boiler being fed under pressure into the cylinder of one pump to turn the other. The technology was improved by James Watt in Britain in 1769 to give the steam engine. It led to the development of railways, which in turn stimulated transport, trade and industry, ushering in the so-called *Industrial Revolution*, led by Britain with its worldwide empire, including North America. It was accompanied by the rapid growth of financial capital.

A further very significant technological breakthrough came in the 1870s when a German engineer, by the name of Nikolaus Otto, found a way to inject the fuel directly into the cylinder of a steam engine, inventing the so-called *Internal Combustion Engine*, which was much more efficient. At first, it used benzene distilled from coal, before turning to petroleum refined from crude oil. The oil industry was born and began to have a great influence on subsequent history.

Even so, despite these developments, much of Europe remained substantially under the control of a land-owning aristocracy, who in turn ran the governments under hereditary monarchs. They enjoyed their wealth, but generally regarded dealing with money as beneath their dignity, being no doubt influenced by ancient religious prejudices. The primary benefit of the British Empire was the use of the pound sterling for world trade that delivered a massive unseen tribute to the banks of London, which indirectly supported the aristocracy, influencing the government of the day.

Russia was developing parallel imperial ambitions during the 19<sup>th</sup> Century. It was a traditional monarchy backed by a land-owning aristocracy, which in turn relied on near slaves in the form of serfs to work the land. But it also became subject to industrialisation with the growth of coal mining and the construction of railways which affected the social structure of the country as the serfs left the land to

become industrial workers. Tensions began to mount, especially after an economic recession in 1870, which was prompted in part by a change in the traditional wheat trade following the growth of North American exports. The Czar evidently blamed the Jewish bankers for the financial difficulties in which the aristocracy now found itself, and instituted an anti-Semitic pogrom. A reaction was the growth of Communism and similar movements that aimed to curb the power of the aristocracy.

The London banks, having done so well from the British Empire, wanted to conquer the United States too as it was rapidly developing on the back of a massive wave of immigrants from over-populated Europe. They accordingly funded the election of Woodrow Wilson in 1913, who promptly gave them the Federal Reserve Bank. It was basically a State Bank in private hands set to reap enormous tax-free profits.

Meanwhile, tensions were growing in Europe. France, remembering the Franco-Prussian War of 1870, in which it lost Alsace-Lorraine with its rich iron and coal deposits, feared the growing strength of the newly created State of Germany that itself feared Russian expansion. Both Russia and Germany were eyeing the Middle East, then mainly run by the Ottoman Empire. The Germans had developed close relations with Ottomans and the Shah of Persia, and planned to build a railway from Berlin to Baghdad to foster trade. Britain stood somewhat aside but feared these rival claims on the Middle East, which it saw as a threat to its trade route with India and the East. The tensions, and the various treaties designed to contain them, were ignited in 1914 when a Serbian nationalist assassinated an Austrian Archduke in Bosnia. The Serbs were backed by Russia whereas the Austrians had German support, leading to the First World War. Previously, war had been a practical way to settle disputes with a few fixed battles, but now, advances in technology and the provision of railways to keep the front supplied with reinforcements turned it into an appalling exercise in attrition. It carried a huge financial cost for Europe as industrial workers became soldiers, which conveyed a corresponding competitive advantage to the United States.

Britain sought to obtain dollar loans to fund the war, and bring the United States directly into the war on its side, which became the primary mission of Lord Balfour, the Foreign Secretary. The Zionists in Britain were led by Chaim Weizmann, a chemist of Russian origins who had come to teach at Manchester University before becoming Director of Naval Research where he developed a new way to synthesise acetone, a key ingredient in explosives. The movement had also earlier retained the services of a law firm, with which Lloyd George, the Prime Minister, was associated, when it was considering a proposed Jewish homeland in the British colony of Uganda. In addition, it had enlisted the support of Lord Rothschild, the banker, who was persuaded to purchase lands for settlers in Palestine. These moves led to the so-called Balfour Declaration for a Jewish homeland in Palestine that was agreed in 1916. It was not announced at that time but provided the London and New York financiers with a basis upon which to put pressure on their governments. Everything came together in the following year:

- Dollar loans were secured for Britain and France;
- The Bolshevik Revolution brought down the Czar of Russia, who was subsequently murdered;
- The United States declared war against Germany;
- The Balfour Declaration was announced.

Although the United States had large German and Irish immigrant communities with no love for the British Empire, public opinion for war was mobilized in two ways: first, by the loss of American lives when the Lusitania liner, carrying a cargo of arms, was torpedoed in 1915 by a German submarine off Ireland; and, second, by the so-called Zimmermann Telegram, offering German support for Mexico if it should invade the United States to recover the territories taken from it in the war of 1846-48. The telegram was depicted as having been uncovered by British Intelligence but was almost certainly planted by Zionists.

The entry of American troops shifted the balance on the killing fields of Flanders, leading the German Government to accept a proposal by Woodrow Wilson for *Peace without Victory* leading to a cessation of hostilities in 1918 with the German army undefeated on foreign soil. However, the formal Versailles Peace Treaty of 1922 placed guilt firmly on Germany, changing its frontiers and imposing draconian reparations that damaged the economy and caused great suffering, even starvation.

The United States then began to enjoy an economic boom, having been spared the ravages of war. It was accompanied by the rapid growth of financial capital and a flourishing stock market that changed the economic structure of the country. Previously, investors had clubbed together to fund a

specific project, such as building a railway, with long term regular dividends being the prime reward. It meant that they had detailed knowledge of the project, both giving and receiving loyalty from those involved in running it. But now, so-called investments were traded on a Stock Market that was essentially short-term in nature, with valuations being based on imagery and manipulation rather than any specific detailed knowledge of the underlying investments themselves. The banks took part, and a new financial elite played the game, with the creation of money and credit increasingly divorced from the underlying assets. Some of the financiers also turned their attention overseas, seeing war-torn Germany as offering scope to acquire assets at a depressed price.

The rampant capitalism of this brief epoch of exceptional circumstances set the world on a new trajectory that was to dominate its behaviour for the remainder of the Century, being of transcendental importance. However, it over-reached itself in 1929 when the United States stock-market crashed with very significant political consequences.

The Industrial Revolution, with its financial undercurrents, had changed the structure of society with the emergence of a growing wage-earning work force, commonly living in industrial slums. While the peasants of the past had led hand-to-mouth existences, they at least lived in natural rural settings growing their own food. While they could see the disparity between their lot and the aristocrats owning the land, they may not have seen themselves exploited in the same way as did the new wage-earning industrial workers. Wages, and hence money, now determined their way of life. In boom times, all went well, but social tensions arose in economic reversals, especially when the workers found themselves unemployed, staring starvation and abject privation in the face. It led to two new opposing political directions: on one side were the Anarchists, Communists and Socialists who in different ways sought to build more egalitarian communities; while on the other, were the so-called Fascists, who saw a solution in strong central government balancing the power of the industrialists against the rights of the workers. The earlier divine right of kings had long been countered by democratic processes, whereby people were entitled to select their leaders by voting in elections. But democracy saw the evolution of political parties that in many cases were no more than cloaks for vested interests, seeking to exploit opportunities to their own advantage, with party funding being the mechanism for control.

These new political circumstances were experienced especially in Germany where the monarchy and established powers were largely eradicated by the defeat in the First World War. The so-called Weimar Republic was established as a conventional democratic process, but the main conflict was between the Communists and the National Socialist Movement of German Workers (abbreviated as NAZI) that adopted Fascist principles. It in particular sought to rediscover German grandeur, being influenced both by the writings of the philosopher Nietzsche, who identified the notion of *Obermensch*, meaning intrinsically superior people, and the new science of eugenics, which concluded that superior people could be bred in the same way as can racehorses. A combination of the Jewish role in the Communist movement, which in Germany was led by Rosa Luxemburg, a Polish Jewess, and the Zionist-cum-financial elements that were not only responsible for bringing America into the war leading to the country's defeat but also began to dominate the growing economy after the war, may have led to a new and extreme outburst of anti-Semitism.

The economic crash of 1929, which became known as the Great Depression, put a large proportion of the work force in America out of work, prompting an almost socialist response by the government of President Roosevelt in the so-called New Deal, while rampant inflation came to Germany wiping out everyone's savings and putting new pressures on its suffering people. It paved the way for the new fascist Government of Adolf Hitler that indeed made great strides in rebuilding the country, but became over-confident seeking to redraw the frontiers to integrate various German communities in Eastern Europe that had been isolated by the Versailles Treaty. At first, the British Government may have almost welcomed these moves to curtail the influence of Soviet Russia, which was inspiring the growing socialist movement in its own country, but eventually concluded that its interests were threatened and declared a resumption of war on Germany in 1939. At first, it may have hoped that this act might have led to new negotiation but early German military successes carried their own momentum leading to full scale war.

Japan had sided with Germany, and its attack on a US naval base at Pearl Harbour in 1941 was the catalyst to bring the United States into the war. The Government had advance knowledge of the impending attack from radio intercepts but had failed to alert the fleet, used the incident to marshal

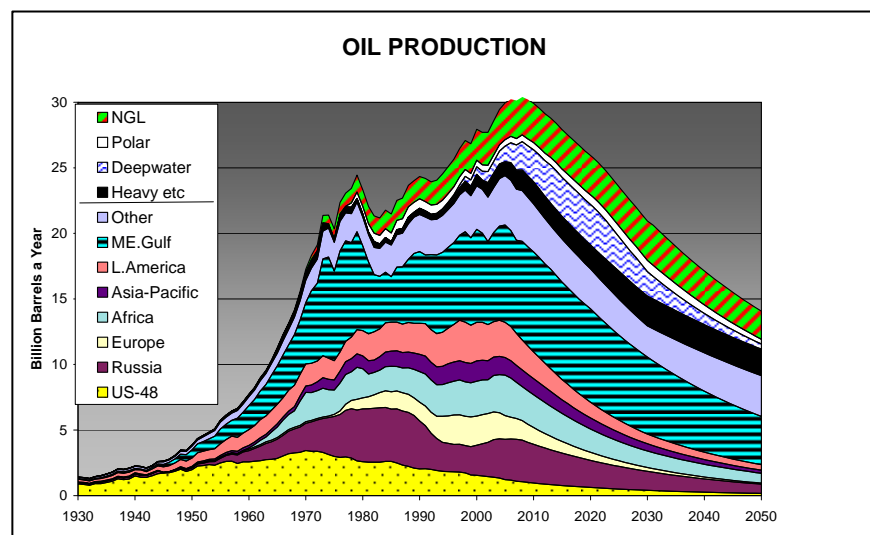
popular support for war. Its entry again changed the balance of power leading to the defeat of Germany three years later.

Although Britain won the war in military terms, it was forced to give up its empire, and surrender the pound sterling to the dollar which became the dominant currency for world trade, delivering in turn a massive return to the financial centre of New York, dominated by the Federal Reserve Bank. Russia for its part was not about to withdraw from the lands it had occupied in Eastern Europe, where puppet Communist regimes were established behind an *Iron Curtain* which denied access to western commercial interests. This led to the so-called Cold War as the former allies in Moscow and Washington now glowered at each other across a divided world. Neither the United States nor western Europe was particularly threatened in military terms, suggesting that the conflict was primarily an economic one between free-market capitalism and the draconian egalitarianism of Communism. These underlying conflicts were however cloaked in nationalism, as western countries under the leadership of America rallied to the flag, supporting a hugely profitable military-industrial complex.

The Industrial Revolution, with its partly hidden financial attributes, had been gaining momentum over all these years as manufacturing and consumerism spread throughout the world. Its energy demands grew in parallel.

Oil had been known since biblical times, having been used as mortar for the construction of Babylon, but the first wells deliberately drilled for it were sunk in the 1850s in the vicinity of natural seepages in Pennsylvania and on the shores of the Caspian. At first, it was used for lamps to replace whale oil that was becoming scarce from over-whaling, but the development of the internal combustion engine, described above, led to the rapid growth in demand fuelling transport and mechanised agriculture. It did not take long for the pioneering geologists to understand the essential factors responsible for an oilfield in terms of source, reservoir, trap and seal.

The early oil companies became very profitable, some taking a position in the Federal Reserve Bank. They expanded their operations around the world, soon identifying the prime provinces. The most important of all, located around the Persian Gulf, was identified almost exactly a century ago when a well in the foothills of the Zagros Mountains of Iran blew out, sending a plume of oil into the sky with far-reaching consequences for the world. Both the Shah of Persia and the King of Saudi Arabia effectively joined the western camp, enjoying their new wealth. But other leaders, including Col. Nasser of Egypt, Col. Gaddafi of Libya and Saddam Hussein of Iraq, later sought to build a new Arab empire to rival that of the West. It was highlighted by a brief union of Egypt and Syria to form the United Arab Republic. The Arab-Israeli conflict was clearly an important factor inflaming passions.



Oil is however a finite resource, formed but rarely in the geological past, meaning that it is subject to depletion, such that production in any country endowed with the resource both begins and ends, passing a peak in between when about half the resource has been extracted. The larger fields within any province tend to be found first, being too big to miss. The first and most important country to demonstrate this fundamental pattern imposed by Nature was the United States itself. The peak of discovery came in the 1930s with the massive fields of East Texas, and delivered a corresponding peak of production in 1970 as illustrated in the above chart.

The oil business tends to face fluctuations of so-called *boom or bust* as is well exemplified by the United States where the East Texas discoveries gave a glut leading to a collapse in price, which

prompted the Government to intervene by instructing the Texas Railroad Commission to limit production to a given number of days a month to support price and help the other producing States. Most oil in those days was moved by rail, and so the Railroad Commission was in a position to administer the policy.

The Oil Minister of Venezuela followed this precedent in 1959 when he persuaded the other major producers to agree to cut production to support price under an organisation known as OPEC. Its Arab members took it a step further in 1973 when they introduced an export embargo on the United States in response for the latter's support for Israel. It prompted the First Oil Shock, when prices rose five-fold triggering an economic recession that lasted for about a decade.

There had been earlier moves to outright nationalisation, starting with Russia in 1928 and followed by Mexico ten years later, but the main moves came later: Iran in 1951; Iraq in 1972; Kuwait in 1975; Venezuela in 1976 and Saudi Arabia in 1979. Even so, the world had ample supplies of oil and gas to allow it to expand in terms of both economic activity and population.

Oil prices weakened in the 1980s due both to falling demand from mild economic recession, prompted in part by the First Oil Shock, and the entry of new production from the North Sea and other offshore areas. This loss of revenue was adversely affecting not only the OPEC countries but the Texas constituents of President Bush Sr.

Iraq had been at war with Iran over disputed frontiers and was at the time a close ally of the United States which was opposed to the Islamic Revolution in Iran that had brought to an end the rule of its friend, the Shah. The United States now sought to raise prices, which had been undermined when Kuwait in 1985 arbitrarily added 50% to its reported reserves, on which its OPEC quota was based, although nothing particular had changed in the oilfields. An emissary, Henry Shuyler by name, was sent to Saddam Hussein urging him to use his influence to enforce OPEC quota better, evidently contemplating a minor military action to prevent Kuwait from taking Iraq's oil from the South Rumaila Field that straddles the border. April Glaspie, the American Ambassador, significantly made a statement to the effect that boundary disputes between Arab countries would be of no concern to the United States. Saddam Hussein evidently misinterpreted this to think that he had approval for a full scale invasion of Kuwait, which he successfully accomplished in 1990. This however far exceeded his mandate, and the United States reacted by mounting a successful military operation to free Kuwait. It then moved to have the United Nations impose oil export restrictions on Iraq, which had the effect of strengthening world prices to the pleasure of the Texas oilmen, although the export embargo was relaxed from time to time for *humanitarian reasons* if prices rose to uncomfortable levels.

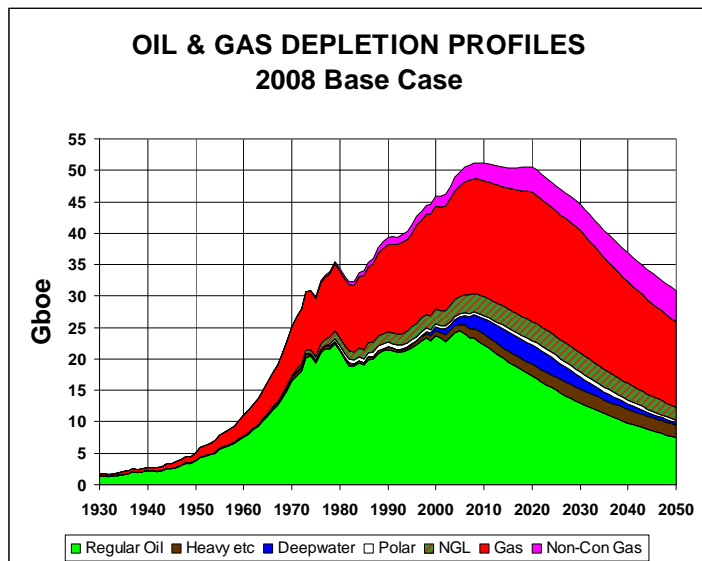
The next turning point came in 1991 with a change in the Russian Government under its more moderate leader, Mikhail Gorbachev. Although still a Communist, he sought to liberalise the regime to end Moscow's domination of the members of the Soviet Union, which promptly moved to regain their independence. The change saw the emergence of new capitalists in Russia. But ironically, the fall of the Soviets had a negative impact on the United States which could no longer justify its hegemony by depicting itself as protecting the world from a Communist threat. The change of position had a large but subtle influence on the financial hegemony of the country and the concept of so-called globalism, whereby the resources and markets of any country were supposed to be open to the highest bidder. In practice, it had led to the enslavement of much of the world. Financiers would identify a weak currency, in part colluding to sell it short on the market, before arriving with *rescue* offers of dollar loans, which were normally welcomed by the governments of the country concerned. In effect, the loans meant that the country's resources, products and profits were exported, partly to the benefit of the local elite, leaving the country itself burdened with dollar-denominated foreign debt, and its poor worse off than before. Ecuador, for example, found itself having to dedicate its substantial oil revenues in their entirety to servicing its dollar debt which naturally paid interest to the United States to the great benefit of its financial community.

The changed circumstances at the end of the Cold War began to attract the attention of Washington where sundry committees were formed to assess the future role of the country. Perhaps the most significant was one known as the *Project for the New American Century* that was formed in 1997 to plan ways to maintain the country's global influence, if necessary by military means. By now, the United States was forced to import more than sixty percent of its oil, which clearly had a critical influence on its financial and political hegemony. Exactly what these committees proposed behind closed door remains unknown but it would be logical to assume that they saw the need to strengthen

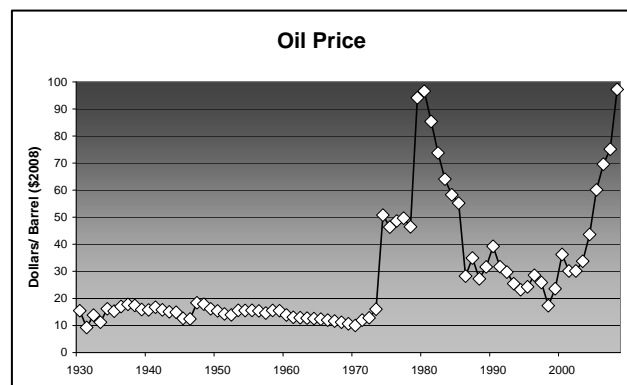
the control of oil supply from the Middle East and the Caspian, which was seen as a promising new productive area following the fall of the Soviets. It was recognised however that launching a new military intervention without justification would antagonise the international community and damage domestic political support for the Government. It needed another event such as the sinking of the Lusitania or Pearl Harbour to mobilise public support for a new war.

The events of September 11<sup>th</sup> 2001 when buildings in New York and Washington were struck by hijacked airliners led to the declaration of a *War on Terror*. Within minutes of the incident, the hijackers were identified as a group of Muslim extremists belonging to an organisation known as Al-Qaeda, a term in fact coined by the FBI in an earlier law case. It was said to be led by a wealthy Saudi by the name of Osama bin-Laden operating from an Afghan cave. Many curious aspects of the incident later attracted comment, questioning the official account. In any event, it was used to justify the invasion of Afghanistan, through which a pipeline from the Caspian had been planned, followed by an attack on oil-rich Iraq in the heart of the Middle East, which President Bush later justified with the words: *Our energy supply was at risk*.

The invasion did not however affect the underlying passage of history in any material way, although it could be said to mark the climax of the Industrial Revolution that had opened two centuries before. Its was a most remarkable chapter of history when a new supply of cheap energy from coal, followed by oil and gas, changed the world in extreme ways, being in energy terms the equivalent of billions of earlier slaves working around the clock. It saw the rapid expansion of industry, transport, trade and agriculture, allowing the population to grow six-fold in parallel. Whereas previously, most people had led simple sustainable lives on whatever their region could support, they now found themselves part of a global economic system run by subtle financial measures far from their perception. But energy supply, and especially oil supply, the most efficient of all, remained critical in setting the scene for what follows. The statistics on oil discovery and production remain weak, being themselves massaged by many vested interests, but enough is known to paint the general picture as illustrated in the graph.



Oil prices rose from \$13 a barrel in 1998 to reach \$38 in 2005, when the peak of *Regular Conventional Oil* production was passed, heralding a long term decline at just under 3% a year. The shortfall was made good by expensive oil from Canadian tarsands and deepwater fields, but was accompanied by a further surge in prices, which was no doubt noted by shrewd traders. They reacted by buying contracts on the Futures Market, while the industry, especially the national companies, kept their storage tanks full, watching them appreciate in value at no cost or effort. As a result, the upward trend gathered momentum to reach an extreme of almost \$150 a barrel in mid 2008. At a certain point, the shrewd traders evidently concluded that the surge was reaching a limit, and started selling short on the Futures Market, while the industry drained its storage to benefit from the high prices while they lasted. One trader is reported to have made \$100 million out of these manoeuvres.



The surge in prices delivered a flood of petrodollars to the Middle East, where it costs around \$10 to produce a barrel. The massive surplus was returned to western financial institutions which were encouraged to lend on ever weaker collateral. By lending to each other they were spared having to

certify the underlying collateral. But the high prices themselves triggered an economic recession, dampening demand such that prices fell back to 2005 levels before edging up to around \$75 a barrel in late 2009. The evidence suggests that the price surge of 2008 coincided with the peak of production of all categories of oil.

### The Future

A debate rages as to the precise date of peak oil production, but in general it is undeniable that the *Second Half of the Oil Age* now dawns. The high oil prices, combined with the extreme distortion of the financial system, has led to what may prove to be the World's Greatest Depression with far reaching consequences for society. Governments have been forced to rescue failing banks, building levels of debt lacking any realistic collateral. Following outdated economic principles, developed during the *First Half of the Oil Age*, they assumed that the provision of this largely imaginary liquidity would stimulate new consumerism and a return to past prosperity. The policies may indeed meet with a brief success, but if they do so, the demand for oil and gas will rise to again breach the supply limits, giving rise to another price shock followed by a deeper recession. It will be remembered that for every gallon used, one less remains, so it becomes progressively more difficult to raise production.

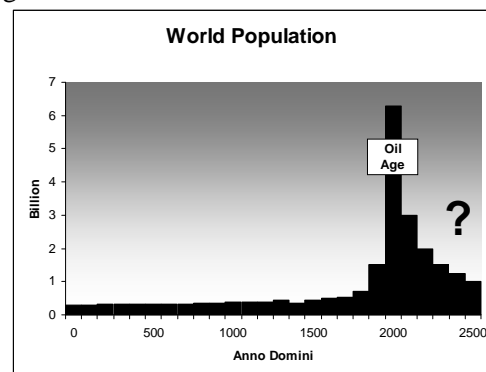
The precise timing of the next crash cannot be forecast, but on balance is more likely to be counted in terms of months rather than years. Amongst other things, it spells the end of the role of the dollar both in oil trade and as a world reserve currency. The Middle East countries have already announced plans to trade oil in a new currency they are jointly creating, as well as the Euro, Yen and Rouble. Even Latin America proposes breaking the power of the dollar with a new regional currency called the *Alba*, backed by Bolivia, Venezuela, Ecuador and Nicaragua. Iran has announced plans to open its own trading *bourse*, as has Moscow. As this builds momentum, countries with massive dollar reserves, such as China, are likely to begin to unload their holdings. China is particularly vulnerable as its economic prosperity came, so to speak, at five minutes to midnight. Its deserts encroach and water tables fall, making it increasingly difficult to feed its excessive population. It has insufficient domestic energy to support its economy, explaining why it is currently scouring the world for oil rights. It has also artificially held down its exchange rate to encourage overseas trade. In short, it operates in an insupportable environment, which itself speaks of growing tensions with its minorities.

As the world economic depression builds momentum there are likely to be growing tensions in many countries with increasing outbreaks of rioting and violence from hungry people feeling themselves to have been in some way defrauded. The first signs of this new condition have already been experienced from Athens to Mumbai. In once gentle London, there is now a toll of stabbings in gang warfare, in part reflecting ethnic tensions resulting from the previous influx of cheap immigrant labour to fuel the past prosperity.

How the United States will react remains a key issue. It may attack Iran in a last effort to support its global hegemony or it may try to withdraw from international engagements with minimal loss of face, recognising that the *Second Half* of the Oil Age will be very different from the *First Half* as economic contraction takes the place of expansion, opening a new world order.

Today 28 billion barrels of oil a year supports a population of 6.7 billion people, but by 2050 the supply will have fallen to a level able to support about half that number in their present way of life.

Climate Change, which now attracts much interest, is a related issue. The climate has changed many times in the geological past due to epochs of intense volcanic activity and differences in the configuration of the continents under plate tectonic movements. There have also been more recent changes, which it seems were due to changes in the scale of forests that absorb carbon dioxide. Apparently 50 million people perished in the Black Death pandemic of 1347, which led to fall in agriculture allowing the forests to expand prompting what was known as the Little Ice Age. Obviously, the world has seen a massive reduction in forest cover in recent years likely to prompt severe global warming.



### **The New World that Opens**

When people think of fossils, they think of dinosaurs, which were huge over-specialised animals that failed to adapt to changed natural circumstances, proving less efficient than the simple limpet that has lived virtually unchanged since the Cambrian, 500 million years ago, happily clinging to its rocks. Fossil fuels have almost dinosaur attributes, having been formed but rarely in the geological past, which means they are subject to depletion. The production in any country, endowed with the resource, starts and ends, passing a peak in between when about half the resources has been taken. Oil is perhaps an extreme example, given that it has played such a critical part in fuelling the modern economy.

For much of his history, Mankind has lived in an environment whereby privileged members of society owned the land, leaving the remainder to work it. Industrialisation, driven by cheap energy from coal, followed by oil and gas, changed that situation with the development of urban centres of population bent on making money. There was however a reaction in the form of Communism that sought to achieve a more egalitarian society, but mostly ended up as a draconian dictatorship where again the privileged exploited the rest.

Cuba however is an important exception that has a strong message to deliver because it already faced its own Peak Oil event when it was cut off from supply on the fall of the Soviets. Remarkably enough, its people rose to the occasion, and found out how to build new communities and adopt new successful agricultural methods not relying on the oil-power tractor or synthetic nutrients made from oil and gas.

A library of new books appears explaining how we can build new sustainable societies. One of the best is *Plan C : Community Survival Strategies for Peak Oil and Climate Change* by Pat Murphy, who touches on the Cuban experience.

Some analysts see little hope for a well managed equitable transition to the new age that dawns, but others are more optimistic, having faith in the ingenuity of Mankind to adapt. In fact, they wonder if the relative ease of the *First Half of the Oil Age* may have led to apathy if not idleness, hoping that the new challenges may prompt extraordinarily positive responses, carrying beneficial social implications. Among the questions to be asked are:

What will create wealth?

Will a small minority still strive for massive personal wealth?

How will world populations move?

Will the world continue to neglect poor countries?

How will business be done?

How will businesses be funded?

Who will be doing it? What will be their qualifications?

In a global context wealth cannot be created or destroyed, or can it?

The present world financial model as we know it may collapse, when?

What might be the immediate consequences?

How can we mitigate human disasters during this time?

Who are the most vulnerable?

Energy is clearly a central element, such that the development of so-called renewable energies from tide, wave, solar, wind and geothermal sources becomes ever more critical. They can be supplemented by reducing waste through more efficient energy management and by using processes such as anaerobic digestion to convert organic waste from urban and agricultural sources in methane for heating or electricity generation, with the residue being a rich nutrient returned to the land. New sustainable practices, including permaculture, can revolutionise food production, maximizing the yield from the areas under cultivation.

Far-reaching social and political changes may stimulate a new more benign way of life. It will likely see a radical reduction in the food chain, as the physical gap between food producers and consumers reduces, perhaps by a sudden proliferation of allotments. Mowing the lawn may give way to happier times tending the tomato crop. A new regionalism may affect the political structure of countries as smaller political units come to prominence, which may in turn improve the democratic process as the voters come to have closer links with their elected representatives. If conflicts arise, they may be more local than global.

It is worth commenting on the financial system responsible for the periodic economic crashes. It seems that an Austrian, by the name of Ludwig von Mises, had already in 1912 explained both how Government intervention destroys the normal market for credit based on savings, and how it encourages the creation of unsound businesses. Such moves can deliver brief surges of prosperity but tend to over-extend themselves. The much-acclaimed Maynard Keynes ignored this advice in 1936 in his proposals for stimulating the economy with false credit after the Great Depression.

History evidently repeats itself as Governments now again follow the advice of Keynes rather than von Mises in dealing with the present crisis. In fact, the trade of paper abstractions now exceeds the trade of real commodities by a factor of twenty. But this is a very different crisis from the excesses of the past because it is ultimately imposed by the depletion of natural resources, and especially energy resources, on which the modern world has come to depend.

In the future, banks may again perform a service whereby they hold people's savings which they re-lend for a well-managed realistic charge, seeing an end to manipulation, fraud and sharp practice. Investors may abandon the facile Stock Market in favour of long-term investments yielding traditional dividends. Tax changes may stimulate the new directions, seeing perhaps the reduction in chargeable allowances, which are in fact a form of indirect subsidy. For example, if energy costs were progressively disallowed as a deductible corporate expense, it would encourage the management of companies to adopt energy-saving policies, cutting the now monumental scale of waste.

At the end of the day, the issue is, as it has always been, one of net individual happiness. Many people throughout history have led simple lives, in what might seem abject poverty, but in many cases they were themselves happy enough seeing their lot as a natural condition and no cause for aggressive resentment. Curiously enough, bombs aside, war-time Britain almost set an example of a model society whereby people accepted their rations in good faith, suppressed exploitation and sharp practices, and worked to the common good. In that case, the universal mission was to defeat the enemy, but a comparable spirit might emerge as people face, not a rival military machine, but the challenges of overcoming the constraints imposed by Nature.

This is not necessarily a doomsday scenario as society can adapt in the most positive of ways once it recognises the reality of what Nature dictates. A new more benign age may dawn for the survivors. It is the difficult transition that poses the prime challenge.