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The First Oil Shock, Stylized Facts, Reflections and The Easterly Puzzle in a Forty-Year Retrospective

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ABSTRACT

The paper aims at understanding if the First Oil Shock has produced long-term effects to the economic system and its fundamentals, if it is still indirectly affecting the energy market and the growth rates of the Western Economies and Less Developed Countries. An historical perspective here will be used as an interpretative tool in order to discern the causes of the 1973's events and its long-term consequences on the world economy during the two decades following the First Oil Shock. The circumstances and the causes by which the shock has developed, the happenings during the conflict, and the changes in the structure of the energy market play a key role for the analysis and therefore will be deeply investigated.

There are no four-lane highways through the parks of industrial progress. The road may lead from backwardness to dictatorship and from dictatorship to war
Alexander Gerschenkron (1962: p. 29)

It is a peculiar fact that the literature on economics and economic history contains so little discussion of the central institution that underlies neoclassical economics - the market
Douglass North (1977: p.710)

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Introduction

Forty years ago, in October 1973, during the day of the Yom Kippur, started the fourth Arab-Israeli conflict. The Yom Kippur War lasted twenty days, from the 6th till the 24th October, the implications that followed would have shaped the global economic and political scenario for the incoming years and they are still playing – nowadays – a crucial issue on the energetic policies of the Western Economies. Few events have produced, in history, deep and enduring economic consequences on the trajectory of the global economy and on the wealth of nations and on their populations such as the first oil shock did.

The oil price jump, although it is the most astonishing aspect of the story, is not the most relevant from an economic point of view. The drastic mutation of the energy market and of its shaping forces, that is "the structural change", is the most crucial and important aspect.

Nevertheless it is not the only one. In fact the oligopoly of the Seven Sisters ended. The Western corporations were no more the owners of the oil wells, but they became, since then, simple dealers of the extraction quotas granted by the contracts with the hosting countries, the Arab states. Moreover the old style of foreign politics of the Western industrialized economies inherited by Great Britain and that consisted in governing through "an indirect rule" - make the local governments of its wide colonial empire rule and administrate according to the exclusive interest of England - ceased to be implemented and to be hegemonic. In 1973 this neo-colonial heritage swayed strongly, even the most moderate Arab country - Saudi Arabia - tried to back out of this trap.

The goal of the paper is twin.

By one side, I report and analyse the circumstances and the causes by which the first oil shock has developed, and for which it has become a critical historical juncture in which has flown different factors. In this part I focus the attention on underlining those factors and changes that has most contributed to crumble the international equilibrium, concerning not uniquely the oil market, but also the political framework of the international relations between OECs and OECDs and also the growth trajectories of the industrialized economies and the least developed countries.

On the other side, revising this historical turning point forty years after its inception - therefore knowing as history went on till nowadays - let us critically appraise the whole evolution enjoying a privileged perspective. Precisely this perspective let us better specify those stylized facts and with them promote considerations on the meaning that

singular historical events have respect to our current believes concerning economics, politics and history. I have been encouraged in doing this historical analysis by the standpoint advanced by Hodgson, who claims the relevance of the historical specificity of the economic theories and models[1]. These considerations will follow in the last paragraph.

1. The Six-Day War as a forerunner

Before starting with the events that go from 1970 until 1973, we must remember briefly a crucial point that modified the political positions of all Arab states: the 1967 Arab-Israeli War, also called the Six-Day War. The hate between Egypt and Israel was born from the Nasser's decision to take the control on the Suez Canal in the 1956. A military plan was built to regain the Aqaba Gulf. It was planned by Great Britain, France and Israel, which were afraid of Nasser's growing power. But the strategy failed because they undervalued the reaction of the international community and of the United States that condemned the attack and ordered to cease-fire. The victory gave to the Egyptian premier still more influence on the Arab people and made easier the circulation of his view.
Nasser's idea was to create a United Arab Republic, and oil would have played a crucial role in establishing/determing their rights. For the first time the Arab countries understood how big was their potential and after ten years they would have blackmailed the developed countries with that weapon.
The burst of the Six Day War was in the air from many years; in fact Israel represented what in the Middle East was the symbol of the Western exploitation. In June 5 1967 Israel attacked the Egypt treacherously and in six days it conquered the Arab side of Jerusalem, the occidental side of the Jordanian, the Gaza strip and the Hills of Golan. The Arab countries, always divided cause of the different ethnic group, religious believes, economic interests, this time, shocked by the events, combined their forces and set an embargo to Europe, Japan and the United States asking the liberation of the occupied territories.
The quantity of stopped oil was huge: 80% of the Japan and Europe's imports came from Arab countries. But however this hadn't the expected result. On one hand, the United States increased their domestic production to the maximum level and used their strategic stocks to sustain their own demand and the European countries; on the other hand,

[1] G. M. Hodgson, *How Economics Forgot History. The Problem of Historical Specificity in Social Science*, Routledge, London and New York, 2001

Venezuela and Iran, that didn't follow the Arab action, increased their level of production and so in few weeks the embargo failed its purposes. This was a great failure from an economic point of view: there weren't heavy consequences on the hit countries, but it was the first step for the consolidation of the Arab League and the fine tuning of the mechanism for a future oil blackmail.

2. The main causes of the first oil crisis

The first oil shock was a mix of different events, no one dominates the others and each one gave its important contribute to the highest increase of the oil price in history. The first point I want to underline is the role that the United States played with their economic policies and their change of position about the security of the Middle East. The substitution of a rough material with another one has been always determined by economic reasons, and not by political purposes. This time, these two aspects fitted together neatly.

In the United States after a high growth of the oil production till 1970, in the 1971 the decrease of the oil price was stopped thanks to the end of the overproduction. The economic policies of regulation made by Nixon, the incumbent president, aggravated the situation. He gave an incentive to the oil consumption, putting an upper limit to the oil price and so the companies, seeing their profit decreasing, were discouraged to develop new oil wells. The cost of drilling 'at home' and in Venezuela - safe sources of oil - increased and contemporaneously the investments became always more convenient in the Middle East and in North Africa. Hence the discovery of new oil wells in the American countries halved and the growing internal demand led to a route change.

In the 1971 the Texas Road Commission agreed with the use of the whole unused oil capacity that represented the majority of the West's oil reserves. This contributed heavily to make the United States and the Europe in the years that followed to be more easily blackmailed.

In the same year another event contributed to create a still more adverse situation. Nixon unilaterally cancelled the direct convertibility of the dollar to gold that essentially ended the existing Bretton Woods System of international financial exchange. This economic measure was done cause of the growing inflation and the unbearable balance of payments and trade balance deficit. The Arab oil producers saw decreasing their profits heavily because the oil was paid in dollars and the dollar after the crash of the Bretton Woods' system devaluated respect to all the other currencies.

This gave to the Arab countries the excuse to increase the posted price of oil and thus starting a bull market. In fact one important agreement in January 1972 about the price policies and the government revenue was the Geneva agreement for the link of the oil price to the dollar devaluation. The reliance on the Arab oil worsened in 1973 with the quotas abolition on the imports, settled in 1959 by the premier Eisenhower. This measure had a great impact on the American economy, because it made to be possible exploiting the huge quantity of oil coming from the Middle East. Thus the domestic demand increased a lot, favoured by the low price. Consequently it led to bigger consumption and so to a constant price growth affected by a high volatility.

As Maugeri writes, "between December 1970 and September 1973, official oil prices jumped from $1,21 to $2,90 per barrel, while spot values topped $5,00".[2] The North America's oil consumption went from 15.9 m b/d in the 1970, to the 16.4 m b/d in the 1971, to the 17.6 m b/d in the 1972, to the 18.6 m b/d in the 1973, that is an increase of 17 % in three years.[3]

I want remember that the United States were the first producer of oil in those years, arriving at the top in 1970 with 11 million barrels per day without including Alaska and Hawaii. So consuming 18,6 m b/d and producing only 11 m b/d, they had to import 7,6 m b/d. This gap represents the oil imports coming from the Opec producers. In fact we can see, as Ian Skeet reports that the increase of oil production happened thank to overproduction of Saudi Arabia and Iran. Between 1970 and 1973 Saudi Arabia increased by 100 % its production and Iran by 55% of its production, passing respectively from 3,8 m b/d in 1970 to 7,6 m b/d in 1973 for the first, and from 3,8 in 1970 to 5,9 in 1973.[4]

The economic power of the Opec[5] members was growing rapidly. The control of the oil resources owned by the most important American oil companies on the Opec territories was, year after year, decreasing. We can note, as Boyce reports, that the oil company payments to the Middle East countries had a great increment since 1962. The annual increment was about 15% since 1962 to 1970 and by that moment there was a still higher

[2] L. Maugeri, *The age of oil: the mythology, history and future of the world's most controversial resource*, Westport, Praeger, 2006, p. 108

[3] I. Skeet, *Opec: twenty-five years of prices and politics,* Cambridge, Cambridge University Press, 1988, p. 83

[4] Ivi, p. 83

[5] The Organization of the Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental Organization, created in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. The five founding members were later joined by other members. Today the organization has 12 members. The other members are Algeria, Angola, Ecuador, Libya, Nigeria, Qatar, United Arab Emirates.

rate. Between 1970 and 1971 it was 54% and between 1971 and 1972 about 37%. It produced a vertiginous profits fall of the oil companies, which had to bear always more costs and risks.[6]

The first attack to the oil cartel of the majors, called “the Seven Sisters”[7], was done by the Libyan government under the colonel Qaddafi in 1970. He wanted a posted price higher and a different division of the profit. The old agreement called “fifty-fifty” set that the 50% profits had to go to the company and the 50% to the country. The colonel succeeded in changing the situation to his favour, getting the 55% of the quotas and increasing the posted price about 30%. In addition, as Boyer reports, the gains were as follow: a basic increase of 0,30 $ per barrel and 0,2 $ per barrel increase in posted price each year for five years.[8] He was helped by the fact that on the Libyan territory there was only a big company, the Occidental, which did its fortune with the discovery of an oil well very rich that gave nearly 1/3 of its profits. So it was easy to oblige the company to accept the new contract terms because there were menaces of heavy production cuts. The government wanted tocut back production by over 45%, about 360,000 barrels per day.[9]

As Maugeri writes, “however, while Libya’s success was the decisive spark that set of an unprecedented chain reaction in the post-war oil order, it was the preceding twenty years of overproduction and low prices that had created the conditions for the shocking conclusion of the Golden Age of Oil ”.[10]

In fact in the same year Reza Pahlavi, the Iran president, asked the same treatment to the majors and in December he would have got it. Moreover he got also that the Gulf countries would have separated agreements from the Mediterranean countries. The USA government let the things happen without doing nothing because the new political strategy of Nixon in the Middle

East was to contrast the Soviet Union no more with the direct intervention, but financing a local state, Iran, with the increase of the oil price. Hence, continuous adjustments were done to the contracts due to the growing rivalry between Iran and Libya so as arriving, in February 1971, at the Teheran agreement for the Gulf States, and in March 1971 at the Tripoli agreement for Libya.

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[6] R. Boyce, *The Opec agreements and economic development*, thesis of bachelor, McGill University, Faculty of graduate studies and research, Master of arts, a.a. 1974, p. 18

[7] The Seven Sisters are: British Petroleum (ex AIOC), Gulf Oil, Shell and the four American corporations Standard Oil of New Jersey (Exxon), Standard Oil of New York (Mobil), Texaco and Chevron.

[8] Ivi, p.29

[9] Ibidem.

[10] Maugeri, op, cit, p. 102

In fact the posted price for the Iran oil was around 1,73 $ before the Teheran agreement and after it, it raised up to 2,170 $, increasing the state revenue per barrel of 0,386 $, passing from 0,829 to 1,215 dollars.
The price increment in Libya was even higher. It passed from 2,53 $ to 3,450 $ after the Tripoli agreement, and the revenue shifted from 1,214 $ to 1,932 $, that is an increment respectively for price and revenue of 20% and 32% for the Gulf States, and 26% and 37% for the Libyan oil.[11]
These two agreements put the basis for the future bull contracts and brought to less control by the Occidental countries on the posted price, on the produced quantity, and on the duration of the concessions, therefore giving new force to the producing countries.
In conclusion: by that time the *Seven Sisters* had no more the direct ownership of the oil wells and let the oil-producing countries decide freely the market policies. This situation led to the recognition of the Opec states and of their power to negotiate on the international market.
Two different ways of thought in the Middle East rose about how the relationships between the importing countries and the exporting countries should have been. The first minister of Saudi Arabia, Zaki Yamani, tried to convince the other Opec members to adopt a long run policy that concerned a ordered supply's development with small but constant price's increments. This would have sanctioned the role of the oil-producing countries as crucial implying high future rates of growth and the possibility to avoid new energy crisis. But this perspective was not so tempting for some Opec states, which preferred to nationalize their wells acquiring the 51% of the concessions given to the foreign companies and so as to gain the control over the production.
This political line was followed by Algeria and Libya between the 1970 and 1971, and by Iraq in the 1972. Only after the Kippur War other countries as Kuwait, Venezuela and Saudi Arabia nationalized their oil wells, hence giving the final stroke to the occidental companies. This subversive policy against the foreign companies was due also to the low life conditions of the people, which rebelled against the occidental world, first cause of their misfortunes, asserting their economic independence. As Livia Ilie writes, one of the main causes of the first oil crisis was "the manifestation of economic nationalism in the

[11] R. Boyce, *The Opec agreements and economic development*, cit., p. 16

Third World States, in order to gain equality position in their relationship with industrial powers".[12]

The high pressure of some very influential fringes and the people's discontent led also the states that had good relations with the West to become fundamentalist and to consider the United States as a common enemy. The only way to affirm their independence was to use the oil as a weapon, increasing the oil revenues, either through production or the price growth. One way to combine these two aspects was the spot market. It was a separate market from which the oil was sold according to the posted price with long run contracts. The operators that used this market were those independent industries or free buyers that either because they were remained without oil, or because they were afraid of sudden supply's fallings, were disposed to buy the oil at a double price. In fact, as Maugeri writes, "the irrationality of the oil market only made things worse"[13]. This market wasn't so big, it owned only 3% of the total sales. Nevertheless this let the Arab States realize that the consumers were so reliant on the oil that they could have set any price. The continuous growth of the oil demand seemed to be unstoppable, an exponential curve, even if the prices kept on rising. In fact, as said before, the increase of the North American consumption was about 2,7 m b/d, an increase of 17% between 1970 and 1973, but also the Western European and Japanese consumption increased. Respectively, between the same years, there was an increment about 2,4 m b/d, about 19% of the European Consumption, and 1,5 m b/d, almost 37% for Japan.[14]

This point of view was strengthened also by the fact that, as Ian Skeet writes, "the alternative energy sources, such as coal and nuclear, were not coming on stream as quickly as had been imagined some years before".[15] So the oil producing countries started to think that the oil demand was relatively rigid. This convinced definitely the Opec states, which owned the 74% of world oil reserves and the 38% of the world gas reserves that the time had come for the revenge.[16]

The political and economic strengthening of the Opec countries started with the Geneva agreement of January 1972, for which the members got an increase of 8,49% in the posted price due to the dollar devaluation in August 1971. Then they got another increase

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[12] L. Ilie, "Economic considerations regarding the first oil shock, 1973 – 1974", *MPRA paper n. 6431,* December 2007, p. 4

[13] Maugeri, *The age of oil, cit.,* p. 107

[14] Skeet, *Opec: twenty-five years of prices and politics,* cit., p. 83

[15] Ibidem.

[16] Ivi, p. 239

of about 6% on 1 April 1973 as compensation for the dollar devaluation of about 11,1 % against gold in February.[17] But this was felt as insufficient by the Opec members.
A new formula was thought after a protracted negotiation, the Geneva Two in June 1973, the revised Geneva agreement. It was very important because it created the conditions for the political cohesion of all the oil producing countries.
For the first time the agreement covered not only the Gulf countries, but also Libya and Nigeria. However the economic reason was relevant: the posted price passed from 2,467 $, under Geneva One, to 2,886 $ under Geneva Two for Iran and from 2,479 $ to 2,899 $ for Saudi Arabia and from 3,462 $ to 4,226 $ for Libya. It is an average immediate rate rise of about 11,9 %, and an increment of 14% in the government revenue[18]. As Ian Skeet observes: "on this basis, (*the Geneva Two*) received a wider degree of specific individual member support than any other agreement reached by Opec with companies".[19]
Nevertheless, by the end of the year, the circumstances had changed so fundamentally that application of the Geneva formula by Opec was discontinued. From that moment, "the balance of advantage had switched from oil consumers to oil producers"[20]. As conclusion the perfect storm was already in motion, with all its components raising expectations of a major energy crisis.[21]

3. The crisis prelude

The sparkle that brought about the first world oil crisis was the sudden breast of the Kippur War. Anwar el-Sadat, the Nasser's successor, had received a country morally destroyed with a high military expenditure. The people had a low standard of living and under the Nasser's government the nation had experienced no economic improvement. Sadat as first thing, tried to change the old domestic and foreign policy. The only way to do this, was to chase away the Russian counselors and to repress the left-wing movement. To prevent an insurrection against him, he had to find powerful allies, and he found them in the Islamic countries. To fortify this ally, he proceeded to release the leaders of the Muslim movement previously imprisoned by Nasser, and to appear as a strenuous enemy of Israel. After taking the control on its territory and after having

[17] Ivi, p. 82
[18] Boyce, *The Opec agreements and economic development*, cit., p. 17
[19] Skeet, *Opec: twenty-five years of prices and politics, cit.,* p. 82
[20] Ibidem.
[21] Maugeri, *The age of oil, cit.,* p. 108

eliminated its opponents within the country, he was ready to consolidate his power retaking the lost territories in the Six Day War. As Maugeri writes, “in preparing his war strategy the Egyptian president focused on oil, which he perceived as key factor in his chances of success”.[22]

In fact he was sure that, the only way to win the war, was to constraint Israel to stay alone during the conflict, and the way to leave the United States out from the conflict was that the Arab countries used the oil weapon.

In May 1973 Sadat made an alliance with king Faisal, premier of Saudi Arabia, been always politically neutral about the Gulf countries’ issues, and in particular with the Israeli-Arab conflict. Saudi Arabia had always kept separated the economic affairs and the political purposes in order to avoid the two aspects collided; this time the Saudi monarchy couldn’t stay neutral because the radical forces did pressure to the government, cause of its old relationship with the United Stated, and also because king Faisal was afraid of a conspiracy for the control of the Middle East by Israel and the Soviets. At the end of May in Geneva, king Faisal met Aramco, the American company that owned the concessions on the Saudi territory, warning that as Maugeri reports, “ the Saudis risk becoming more isolated in the Arab world, and they cannot permit this to happen, and therefore American interests in the area must be removed"[23]; if not “ you will lose everything ”.[24]

The American government didn’t believe in the Saudi words, and ignored the help request of the oil companies, which tried also with an "on the field" analysis to explain how serious the situation was. The underestimation of the problem was realized only after that the precarious oil situation precipitated; in fact Kissinger then declared that thinking that the Arab world could have succeeded in doing a foreign policy united, using the oil weapon without having, behind this strategy, the Soviet support, would have been impossible.

During the Jewish festivity of Yom Kippur in October 1973, the fourth Arab-Israeli conflict broke out. After few days Golda Meir, the first Israeli minister, informed Nixon that his state was collapsing, and asked resources and armaments to continue the war. The United States tried with a secret action, an airlift, to transport all the armies, but the mission was discovered. The Arab countries immediately reacted, and six of them (Saudi Arabia, Iran, Iraq, Kuwait, the United Arab Emirates, Qatar) met at Kuwait City on 16

[22] Ivi, p.110
[23] Ivi, p. 111
[24] Ibidem.

October and decided a unilateral increase of the Arabian Light oil from $2,90 to $5,11 per barrel.[25] This day was the end of one chapter and the beginning of another one, the switching of the price management from the Seven Sisters to the Opec states.

4. The shock and its feeding

The day after, another meeting was held by Oapec[26], a delegation formed exclusively by Arab producing countries. The countries involved in the decision were: Saudi Arabia, Kuwait, Libya, Egypt, Algeria, Syria, Abu Dhabi, Bahrain and Qatar. They decided to "institute a program of production cuts, starting at 5% of the September volume and increasing by 5% per month, until such time as total evacuation of Israeli forces from all Arab territory during the June 1967 war is completed and legitimate rights of the Palestinian people are restored".[27]

On October 20 the embargo was applied to the United States and South Africa, and then it was extended to the Netherlands and Portugal. Iraq preferred to follow a harder policy that consisted in nationalizing the US and Dutch holdings and joining the embargo. Iran instead of decreasing the production, cause of the high rivalry with Saudi Arabia, increased the production. The cutbacks and the embargo were significant, both for the oil consuming countries, which tried to take unilateral and cooperative action to end this situation, and for the oil producing countries, which saw a price escalation to levels never been imagined. The effect of the production cutbacks of the Arab Opec countries should have been about 4 million b/d in November as compared with September. But contemporaneously the increment in the oil production of Iran and other states, about 900,000 barrel per day, brought the real cutbacks to 3.1 m b/d, about 5.5 % of the world consumption.[28]

The real economic impact of the embargo was not so remarkable, but from the psychological point of view it was annihilating. In fact, as Maugeri writes, "it was not loss of supply, but fear of possible loss that drove up the price"[29]. The countries that were unaffected by the embargo, sold to the subjected countries the oil in secret. Another thing that reduced the strength of the action, was that the oil market was like a sea, anyone

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[25] Ivi, p. 112
[26] Organization of Arab Petroleum Exporting Countries
[27] Skeet, *Opec: twenty-five years of prices and politics,* cit., p. 100
[28] Maugeri, *The age of oil, cit.,* p. 113
[29] Ibidem.

could buy and resell it; in fact the western companies did their best to spread the burden among all countries.

What worsened the crisis was the power of the information that made people blind to the facts, helped by the ignorance and confusion, which amplified the effects, feeding the panic worldwide. The fatal hurt happened when in the mid-December Iran held an auction for 475,000 b/d and obtained a price of $17.04/bbl.[30] Nigeria followed the Iranian auction, and obtained a price of $20.[31] This created lot of euphoria in the air. All the members of the Opec saw the first embargo's fruits. They obtained from Japan and ECC a statement of political support, and they were optimistic about the political request demanded to the United States and Israel.

In fact in October, Kissinger, the new Secretary of the United States, tried through negotiations to make a military and political peace between Israel and Egypt, and to stop the Arabian oil embargo, although he wasn't so worried by the double up of the oil price. The United States were more concerned about the political instability in the Middle East as the main risk factor. Only a month later they would have changed their perspective. The strength of the oil producing countries was rising quickly. Many other delegations wanted to attend at the Gulf Committee, like Algeria, Indonesia, Libya, Nigeria and Venezuela.

When the double up of the oil price occurred in October, another amazing transformation of the oil scene would have taken place in few weeks. On December 23 it was formally announced that the new-posted price should have been of $11.651 and that the government would have taken $7 out of the total amount.[32] In addition the Arabian Light 34 API was formally described as the marker crude, that is, the base from which calculating differential values for other crudes. By now the industries and the states that needed the oil more, were inclined to pay any price, and according to this issue the United States set a new diplomatic goal: no more the end of the embargo, or the peace, but the oil price increment.

To summarize: from 1 October to 1 January there was an increase in the posted price of 387%, in the buyback price of 391%, in the average government revenue of 467%, and in the average company cost of 443%.[33] The October price increase, although massive in historical terms, was necessary in order to rebalance supply and demand, which had been

[30] Skeet, *Opec: twenty-five years of prices and politics,* cit., p. 101
[31] Ibidem.
[32] Ivi, p. 102
[33] Ivi, p. 104

held down by competitive forces for many years, while the December increase was due to supply manipulation. It was the reply to the price increment, about 300%, of wheat, sugar and cement, commodities that the Arab countries imported from the Western countries. The will of the Gulf countries was clear, they wanted to become richer and richer, this was their revenge. These two shifts were a traumatic experience for everybody, but for the Opec, as Skeet says, "it was as if they had found the crock of gold at the end of the rainbow; for a brief moment it seemed as if their troubles were over and all would be solved by a continuous stream of dollars".[34]

The situation became confused also for the companies that saw in the price increment a great fortune, an exponential increment of the profits. The companies' margin passed from 69 cents on 1 October to $1.20 on 16 October and to $1.53 on 1 January, on the assumption of 60% government participation. At 25% the company margin was $2.88. Nevertheless they were left to themselves and in addition, they were attacked by both sides, by the oil producing countries and the American government.

In fact due to these high profits, the companies' operations came under intense scrutiny from the press, analysts, and finally the Senate. Heavy anti-oil industry sentiment was running in the country, because they were accused to have plotted the first oil shock in ally with the Arab countries for the windfall of profits gained. The oil corporations received the first attack from their homeland. The most concrete blow they received, came from the oil producing countries. In addition to the meeting of December 23, in 1974 January 7, the Opec's 37th Conference took place.

The main points established during the Conference would have modified deeply the existing contracts with the Seven Sisters:

- The future price changes made by the Opec would take into account currency or inflation effects.
- The 1:1.4 relationship of market price to posted price was dropped. The market price was set as 94%-93% of the posted price, the price that companies paid to "buyback" the crude.
- The average government revenue was split into two flows: royalty (currently 12.5 %) and tax (currently 55%) on non-equity oil and realization minus production cost on equity oil. The companies' average cost was made up of tax paid cost of

[34] Ivi, p. 105

> equity crude (either 75% or 40%) plus the actual cost (93% or 94%) of "buyback" crude, 20% or 55% of total production.[35]

Although the average cost increased considerably, the companies' revenue was still really high. The equity oil cost was 75 % of the total production, about $7.12. The "buyback"[36] oil was 93-94% of $11.651, that is, around $10.835. So the company average revenue was $3/bbl.[37] The Arab Countries started to think how they could increase the equity cost. They found a solution by increasing the level of participation, the royalty rate, and the tax rate. The companies' average cost between January 1 and June 1 (1974) passed from $7.900 to $9.391, and contemporaneously the government average revenue went up from $7.927 to $9.354. The participation level from 25% passed to 60% in six months, the buyback quantity passed from 20% to 55%, and the buyback price increased slightly about 94.8%; but on October 1 turned down to 93% and remained at the same level.[38]

On November 1, the governments' royalty arrived at its maximum, 20%, and the tax rate touched 85%. By that moment the average governments' revenue exceeded the threshold of $10, arriving at $10.125, and the companies' average cost was $10.245.[39] The margin of the oil companies by then would have been very small, about 22 cents.

The end of the Seven Sister as producing and extracting oil companies came with the end of the concessions and the production sharing agreements. The companies were no more the owner of the land, they had only production quotas and they had to bear all the costs and the risk of the exploitation plans. The costs had to recover capital and operational expenditures, that is, a fixed cash flow based on the relative price. The oil profits represented the remaining money that was divided between government and company, with a formula 80%-20%. With these innovations however, as Maugeri says "what did not change at all was the fundamental oligopolistic command of the oil market"[40]. It passed definitively in the hands of the Opec from those of the Seven Sister, which continued to own the midstream and downstream activities - refining and marketing.

[35] Ivi, p.103
[36] The price at which the companies re-sell the oil to the oil producing country.
[37] Skeet, *Opec: twenty-five years of prices and politics,* cit., p.108
[38] Ivi, p.110
[39] Ivi, p.115
[40] Maugeri, *The age of oil, cit.,* p. 119

5. Consequences and conclusions

In 1974 the Yom Kippur War was won by Israel, and the Arab countries didn't get satisfaction of any of the conditions demanded. The cutbacks were eliminated silently, but however the prices remained at the same level. The shock provoked huge losses and gains. The embargo led to a massive increase in the price of refined products. Between 1972 and 1975, the consumers paid on average 57% more on gas, and as Ilie writes, "the high increase in energy price recorded is considered to be the cause of the 1974-1975 economic recession".[41] The global economic growth slowed down to 4.0% annually till 1985, when between 1960 and 1973 it was about 5.1%. The oil consumption grew at a rate still lower, around 3.1 %, in comparison to 6.7% between 1960-1974.[42] This brought the curtain down on the most extraordinary period of development ever registered by the advanced countries, opening the door to a severe stagflation that hit the non-oil producing countries. The extra cost to the OECD-countries of oil imports in 1974 over 1973 was of the order of $40-50 billion.[43] Europe imported the inflation from the United States, and contemporaneously fell in recession. The prices of the goods were very high, and the wages didn't adjust according to the growing inflation. The people made pressure to the governments, which decreased the currency value to sustain the exports. This led to a decline of productivity and investments. Many political measures to solve the energy issue, and to contrast the Opec power were taken into consideration, but no one resulted to be the right one. Also a governmental association of oil importing countries was established, the international energy agency. It had the goal to find common plan for the development of alternative energies, and to define common policies for the Western economies. But it hadn't a great success in the initial years, cause of the difficult relations between Americans and Europeans. On the contrary, Europe tried to build a new policy with the Arab countries, differentiating himself from the United States. In addition to the great problems concerning the developed countries, the non-oil developing countries were facing even harder problems. The economy of these states was highly dependent on their export revenues, thereby vulnerable to external shocks. The high inflation and the slow growth of the developed economies, caused by the price rise for oil and raw materials, and the growth of trade barriers in the Western World, led to a low demand for imports of the primary commodities exported by the non-oil developing countries. The rate of economic growth between 1967 and 1972 was around 6.1%, while during 1975 it decreased to 4.1%, a net loss

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[41] L. Ilie, *Economic considerations regarding the first oil shock, 1973 – 1974*, *cit.,* p. 2

[42] P. Jabber, "Conflict and cooperation in Opec: prospects for the next decade", *International Organization,* volume 32, issues 02, 1978, pp. 323

[43] Skeet, *Opec: twenty-five years of prices and politics,* cit., p. 103

of two points percent.[44] There was a severe decrease of employment. Contemporaneously, the heavy fluctuations in the exchange rates created instability in the financial system, which made the interest rates go up strongly, feeding the deficit of the balance of payments. Between 1974-1978 for the non-oil LDCs it was, as P. Hallwood and S. W. Sinclair write " worse terms of trade with exporters of manufactures were experienced; worse terms of trade with the oil exporters were found; and below-trend export volume growth was also observed".[45] The only countries that took advantage of the first oil shock were the oil producing countries. The Iranian revenue passed from $ 1.1 billion in 1970 to $ 17.8 billion in 1974. The growth of Saudi revenue was still more remarkable. In the same years it passed from $ 1.2 billion to $ 22.6 billion. The Opec had the expectation of receiving over $100 billion of revenues in 1975.[46]

Those inflows of revenues were committed to capital and infrastructural projects. These countries had a high economic growth, pushed by the increasing revenue expenditure. The main purposes that the governments set to themselves were to increase the average level of education and health, to enhance transportation, and to build up a great arsenal. In few years they succeeded in having strong economic basis, and with the help of an average saving rate about 40% and an investment rate about 25%[47], they secured to have a constant economic growth in the years that followed.

The importance of gaining oil resources to satisfy the own energy requirement remained a crucial point both for all the developed states and for the developing countries. Every government tried, after the unexpected events of the first oil shock, to have safe oil stocks. Another pursued way was to substitute the oil with alternative energies, like photovoltaic energy, nuclear energy, gas, but they were not so convenient despite the heavy increment of the oil price.
Many governments tried to rise against the Arab monopoly, but by that time, all the Western countries were too reliant on the imported oil to succeed in changing the situation to their favour. Just this dependency brought them down in a stagflation spiral during the second oil shock, which was caused by the Islamic-Khomeinist revolution in the 1979-1980 and the war

[44] P. Hallwood and S. W. Sinclair, "Opec and the non-oil developing countries in the 1970s", MPRA paper n. 24463, August 2010, p. 6
[45] *Ibidem.*
[46] Skeet, *Opec: twenty-five years of prices and politics, cit.,* p. 150
[47] S. A. Basher and S. Fachin, " The long-run relationship between savings and investment in oil-exporting developing countries: a case study of the Gulf Arab states", MPRA paper n. 29077, February 2011, p.20

between Iran and Iraq. This was the last blow before a period of quietness called counter-shock that last ten years, till 1990 when Iraq invaded Kuwait.

6. Reflections, stylized facts and a puzzle

The first reflection must concern the complexity of the political-economic system of international relations that surrounded the first oil shock determining the greatest leap in the history of the price of a commodity. None of the general economic theories or combinations of general concepts is able to reduce and make the history of the events, just above mentioned, have a deterministic character. Nevertheless, also the attempt to investigate the relative predominance relationship of the political factors on the economic ones and vice versa would not be exhaustive.

The economic interests as well as the political affairs, also including the recourse to war, weave together in this historical reconstruction endlessly. Here it is possible, at most, to find some simple "on-and-off" links between economics and politics according to the conclusive remarks of Hirschman: "There are stories, intricate and often non repeatable ... that look more like tricks history has up its sleeve than like social-scientific regularities, not to speak of laws"[48].

The second reflection concerns the more restricted field of economics because it falsifies the foundation of its theoretical models. Mainly the neoclassical one that considers the economy as a natural entity with its universal rules, a theoretical position known as "fundamentalism of the market". If there is a lesson to be learnt from history about the first oil shock, is that the Market is a social institution and for its rules all the economic players are ready to fight by any means, even by war; rules that define restrictions, legitimate behaviours and establish or modify the property rights on the natural resources management.

Before and after the months that followed October 1973, OPEC has succeeded in rewriting the rules of the game for the energy market, using the crude oil as a weapon to make the western economies, and not only, accept this new economic and regulatory framework. The demand and supply mechanism is, in fact, unable to explain (almost anything of) the dynamics on the crude oil price settlement: the function of price discovery left and accredited to the market forces is almost a blind man's buff.

As Adelman states:

[48] A. O. Hirschman, "The On-and-Off Connection Between Political and Economic Progress", *The American Economic Review*, Vol.84, No.2, Papers and Proceeding of the Hundred and Sixth Annual Meeting of the American Economic Association, May 1994, p.347

> There is no way to explain the price upheavals by higher demand, deficit supply, changes in discounting, or political objectives. The only story that makes sense is that the sellers achieved some degree of market control: monopoly[49].

This point of view let us wonder if markets, according to the *laissez-faire* concept should be totally autonomous economic systems, therefore more efficient than those implemented with the use of force, which tries to regulate the terms of trade to their own advantage. It is a methodological debate that started at the beginning of the XX century and that has been progressively forgotten[50]. Monopolies and quasi-monopolies are not only categories that are useful to classify market shapes different from the "free perfect competition", but they are also economic categories that express different degrees of economic power based on the ownership of the goods and on the position of the contractor. These are "social data" that as well as the natural, technological, and psychological ones play a key role in the determination of the terms of trade[51]. The story here revised of the first oil shock reveals without any doubts how these social data act, how these powers behind the presumed transparency of the markets and their claimed efficiency play a pivotal role in the market economy[52].

The third reflection this story suggests, concerns the global inequality, both for costumers and countries. The bargaining power of the Seven Sister at the beginning of 1973 was remarkable. Not only they were, in economic and industrial terms, the owners of two third of the world crude oil production, but they have also improved with the passing of time their own collusive skills so as to affect effectively and directly the foreign politics of the respective states, especially Great Britain and the United States.

For example, already in 1936, after the Mexican oil industry's nationalization, they managed to boycott Mexico to export abroad its excess production, so as destabilizing its economy. In 1953, the British Iranian Oil Company - then become British Petroleum - succeeded in

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[49] M.A. Adelman, *Genie out of the bottle. World Oil since 1970*, The Mit Press, Cambridge, Mass. p. 3.

[50] The starter and protagonist of this debate was the Austrian marginalist economist E. von Bohm-Bawerk. He asserted that "just as natural phenomena are governed by immutable eternal laws, quite independent of human will and human laws, so in the sphere of economics there exist certain laws against which the will of man, and even the powerful will of the state, remain impotent; and that the flow of economic forces cannot, by artificial interference of societal control, be driven out of certain channels into which it is inevitably pressed by the force of economic laws", ("Control or Economic Law", Ludwig von Mises Institute, Auburn, Alabama, 2010, p.7; first appeared in the *Zeitschrift für Volkswirtshaft, Sozialpolitik und Verwaltung*, Volume XXIII (1914): 205–71).

[51] See E. Preiser, "Property and Power in the Theory of Distribution", *Economic Papers*, n.2, 1952, pp.206-220

[52] This research program has been developed by Douglass North. See: *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, Cambridge Mass, 1990 and *Understanding the Process of Economic Change*, Princeton University Press, Princeton, 2005. For some aspects the North's research program is still forced into a neoclassical framework. For instance when he shares the assumption that efficient institutions are naturally selected. Much more suitable to the case of oil price bargaining after the 1973's oil shock seems to be the concept of efficiency as 'Positive Principle' for group and organizations' decisions proposed by P. Milgrom and J. Roberts (*Economics, Organization and Management,* Prentice Hall, Englewood Cliff, New Jersey, 1992) where "efficiency is always defined relative to a specific set of individuals and options" on a basis of "outcome-by-outcome comparison" (*ivi*, pp.24-25).

persuading not only the government of Great Britain, but also the government of the United States to intervene jointly to overthrow the Iranian premier Mossadeq, who hadn't renewed the exploitation contract to the AIOC and had nationalized the sector. The military coup gave to the Shah Reza Pahlavi a full control over the entire business[53].

The point this story has been teaching till now is really clear: the inequalities between actors - both individuals, corporations or states - are the resulting outcome of not only the economic factors' crossroads (productivity, initial endowments, and technology), but directly of the political ones[54].

At different levels, between individuals of a country or between states, the extreme income inequalities undermine social and political stability. We have seen, in fact that it has been easy for the Arab leaders such as Nasser, Sadat and Qaddafi, to deploy the sentiments of the poorest and less well-off parts of the population against the imperialistic claims of the rich Western world.

The fourth reflection concerns the role that the *worldviews* play in the economic international relations and the rank in terms of priorities, countries assign to them. Development economics was born in the second post war period thanks to the American activism, the single winning country without a colonial history. Its manifest is considered the famous "IV point" of " The Speech on the State of Union" that the American president Truman has made on 20th January 1949:

> Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas.....The old imperialism - exploitation for foreign profit - has no place in our plans. What we envisage is a program of development based on the concepts of democratic fair dealing.[55]

The vision (the ideology) of the colonial period in the sign of the dichotomy "civilization/barbarism" is now replaced to the new binomial "development /underdevelopment". While the former was an antithesis, the latter introduces the idea that a substantial continuity is feasible, where the underdevelopment represents a condition of

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[53] After the nationalization, the AIOC association filed an appeal to the International Court of Justice of Hague, while the Great Britain did the same thing to the Security Council Resolution, but both entities recognized the Iranian rights over its oil reserves. Then the Great Britain started to intensify its diplomatic activity to convince the United States to implement a military coup. The president Truman rejected this plan, but the following premier Eisenhower agreed with the condition that the exploitation of the Iranian oil would have been divided equally between all the Seven Sisters. Hence in the summer of 1953, a secret military operation - called AJAX – planned by the Great Britain and the US government began. The operations, with their headquarter in Cyprus, were under the supervision of the CIA, and they aimed at overthrowing the Democratic Iranian regime. Even with some difficulties at the beginning, the military coup turn out to be successful. The premier Mossadeq was condemned to death, nevertheless the sentence never taken place. See: Stephen Kinzer, *All the Shah's Men: An American Coup and the Roots of Middle East Terror,* Hoboken, John Wiley and Sons, 2003.

[54] J. E. Stiglitz, *The Price of Inequality. How Today's Divided Society Engenders Our Future*, Penguin Books Ltd, London, 2012, p. 66.

[55] H. S. Truman, "Inaugural Address", 20th January, 1949, www.trumanlibrary.org/calendar/viewpapers.php?pid

development not yet achieved. The proposal of the United States will prove itself to be successful because this "development program" will allow the United States to affirm its anticolonial hegemony. But the old imperial style of the Great Britain concerning the "indirect rule" was in fact updated, as it is evident looking at the role the United States has had before and after the events of the First Oil Shock[56].

The fifth reflection concerns the economic impact the two oil shocks (1973 and 1979) has had on the global economy in the long run. The economic system has been suffering a deep impact due to the collateral effects - which protracted for long time - of these two subsequent pivotal events affecting the energy market. The result was not a "zero sum game" but a "negative sum game", where the profits of the winners (the OPEC countries) were lower than the losses of all the other countries.

Without any doubts the first and the second oil shocks brought a permanent inflows of revenues to the oil producing countries, where some people became extremely rich. The Saudi Arabian revenue from 1973 to 1982 was more than $ 200 billion and it represents the 50% of OPEC total surplus, as reported by Spiro[57]. Nevertheless these huge inflows of revenues (petrodollars as they have been called) were not transformed automatically into investments that accelerated the economic development of these countries or into a mechanism of "trickling-down" towards the poorest part of the population. Saudi Arabia placed the 45% of its new revenue in the banks of the Eurodollar area, but it also placed the 30 % "in the hand of the U.S government"[58] buying American Treasury bills on the basis of a secret add-on agreement allowing Saudi Arabia Monetary Agency (SAMA) to buy Treasury Bond outside the channel of the competitive auctions[59].

The currencies of the OPEC countries appreciated due to the oil exports so as leading all the other exports suffer strongly by this appreciation. This problem is well known to the economists as "the natural resource curse"[60]

[56] For several decades between developed and less developed countries were set typologies of agreements very similar to the so called 'unequal treaties': the kind of treaties with whom Great Britain was used in nineteenth century to impose free trade to its colonies (Ha-Joon Chang, *Kicking Away the Ladder. Development Strategy in Historical Perspective*, Anthem Press, London, 2003, pp.51-54). Notorious and most harmful for developing countries was the "Multi-Fiber Arrangement", enacted in 1974, right in the first oil shock, to limit the export of textiles and clothing only to the developing countries (it not applied to the industrial countries except Japan). See: Jan S. Hogendorn, *Economic Development*, HarpersCollins, New York, 1995, p. 523.

[57] D.E. Spiro, *The Hidden Hand of American Hegemony. Petrodollar Recycling and International Markets*, Cornell University Press, Ithaca, New York, 1999, p.128

[58] *Ibidem.*

[59] D. Basosi, *Finanza & Petrolio. Gli Stati Uniti, l'Oro Nero, e l'Economia Politica Internazionale*, StudioLT2 Edizioni, Venezia, 2012, pp.132-133

[60] See: M. Humphreys, J. Sachs and J. E. Stiglitz, *Escaping The Resource Curse*, Columbia University Press, New York, 2007; on the topic see also G. Covi, "A Case Study of an Advanced Dutch Disease: the Russian Oil", *MPRA Paper*, No. 46670, 2013.

After the second oil shock of 1979 the oil import expenditures of the LDCs (non oil producing) were equal to the amount annually received as "Official Development Assistance". The recycling of petrodollars was a matter of interest only for a little group of newly industrializing countries (NIC). The LDCs in general had little access to the Euro-banking markets. They survived with the funds of ODA or by restricting their imports. The conditions for another type of shock were already set in place, "the LDCs Debt Crisis of 1980", which started with the rise of the interest rate decided in August 1979 Paul Volcker just appointed as chairman of the Board of Governor – the 'Volcker Shock'[61].

While in 1970 the total external debt of the less developed countries amounted up to 68,4 $ billion, in 1980 this debt became 635,8 $ billions, an increment of almost 929%, and at the end of the 80s it grew up to 1,182 $ trillions[62]. During the 80s, "the lost decade" of the LDCs started to take place; in fact almost all the countries of this group - even those oil exporting countries such as Nigeria, Mexico, and Venezuela - experienced negative growth rates. The other factor affecting their growth was the slow down of the developed economies, which reduced their imports demand of goods from the developing economies.

Secondly, there was a strong increase in the inflationary pressure due to the high oil prices. The former and latter conditions - the economic slow down and the high inflation rates - gave birth to a phenomenon - "the stagflation" - previously unknown that suddenly put out of use the traditional Keynesian policies implemented to tackle usually the crisis.

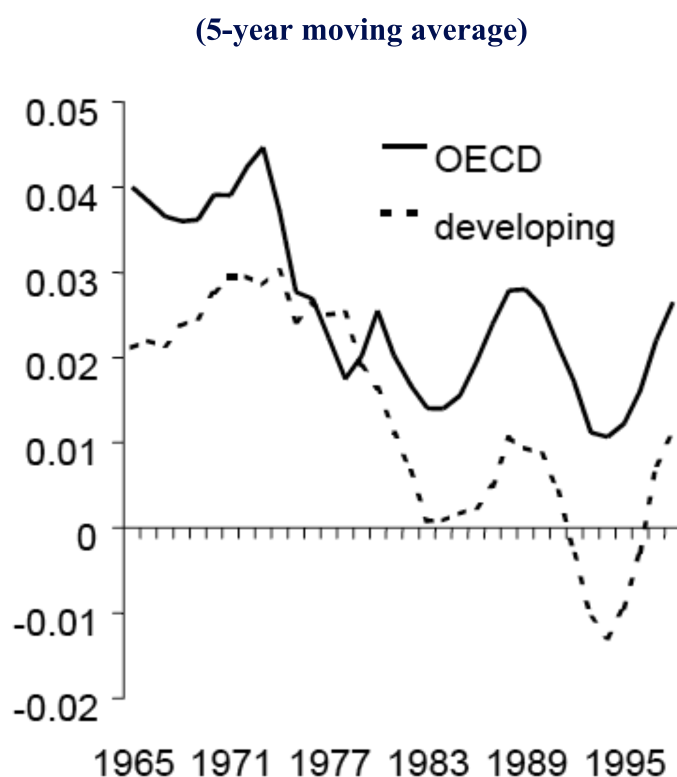
The sixth reflection concerns "the puzzle" identified by William Easterly, who emphasizes that the two oil shocks might have affected more radically the structure of the global economy, producing effects with a longer term horizon than a couple of decades.

[61] When Paul Volcher was appointed, in August 1979, as chairman of the Board of Governors of the Federal Reserve System, the rate of interest of Fed Funds was 10,50%. After one year, at the end of 1980, it had flown to 22%. In 1970 the price of an ounce of gold was $ 35; in the 1980 (January) it was $ 875 (N. Ferguson *et al. 2010)*

[62] IMF, *World Economic Outlook*, 1988, Washington D.C. The LDCs debt burden will reach 2,140 at the end of 2000 (IMF, 2001)

Fig.1 - Per capita growth in OECD and Developing Economies

(5-year moving average)



Source: W. Easterly (2001, p.148)

In fact, Fig. 1 shows that the majority of the developing economies by the mid of the 70s and during the 80s have experienced a strong decrease in the 5-year moving average growth rate, which became negative at the beginning of the 90s. Although a partial U-turn happened from the mid 90s, the growth rates never came back at the levels before the 1973, the year of the First Oil Shock. And for the OECD rich countries the "Roaring Nineties" end with the bursting of the ICTs bubble[63].

If we extend this analysis to the period 1980-98, we discover that the median per capita income growth in developing countries was 0.0 %, as compared to 2.5 % in 1960-79. Easterly defined this as a real "puzzle", just because the "developing countries growth should have increased instead of decreased according to the standard growth regression determinants of growth"[64].

[63] J. E. Stiglitz, *The Roaring Nineties*. W.W. Norton & Company, New York, 2003

[64] W. Easterly, "The Lost Decades: Developing Countries' Stagnation in Spite of Policy Reform 1980-1998", *Journal of Economic Growth*, n. 6, 2001, p. 135. The standard variables, which enter in the regression test in Easterly's article concern the financial depth, real overvaluation of the currency and initial condition of health, education, fertility, infrastructure etc. that generally all improved in the second period. Similar observations had been done also by P. R. Krugman, and A. J. Venables, "Globalization and the Inequality of Nations," *Quarterly Journal of Economics*, 1995, pp. 857–880.

Fig 1 synthetizing the results of this empirical research, is astonishing in rendering clear how the two trends - that of the developed economies and that of the developing countries - chase downwards and how this path just began in the 70s, the years of the story here recalled.
If not even a sophisticated econometric tool succeeds in finding the solution to this "puzzle", maybe this could be one of the cases where - granting the Hodgson's suggestion given in the introduction – the historic specificity of the event contains the explanation of what came after. The intensity of the event and the drastic change of the market of a strategic energy resource could have introduced into the economic system a hysteresis, leading to a change of paradigm, a "new inception". If it is so, events such as the first oil shock would demonstrate that our economic systems are not deterministic: there is no way to know the system's state without looking at the history, it is necessary to know the path that the system followed. As Acemoglu and Robinson write: "History and critical junctures shape the path of economic and political institutions"[65]. From this point of view, development and growth rate are path dependent.
According to this statement, only the "K-Waves", the long waves of Kondriatev's cycles might define a guide to propose hypotheses on when the final crossing of the depressing effects of the two oil shocks will take place[66]. Or maybe better, the topic could be worth pondering in the framework of a recent contribution of R. Gordon, contrasting the assumption that the process of economic growth will persist forever[67]. In the case of the U.S. he identifies six "headwinds" that are in process of dragging the long term rate of growth of the US to half or less of the 1.9 % annual rate experienced between 1860 and 2007[68].
The oil shocks of the Seventies have stricken the world economy in an irreversible way, as argued in the paper. Some groups of countries more than others were able to implement counterbalancing measures, according to differences in resources, policies and hegemonic power. Surely the consequences are embedded in the actual long-term rate of growth of single countries or group of countries, together with the influence of other factors.
The paper has been trying to apprize the *force* of the 'headwind' called 'first oil shock'. We have dug up the history of the first oil shock, realizing that a shock to the bases of our economy has enduring and cross-sectional effects. Undervaluing the long-term consequences

[65] D. Acemoglu and J.A. Robinson, *Why Nations Fail: The Origin of Power, Prosperity and Poverty*, Profile Books, London, 2012
[66] See: V. Barnett, *Kondratiev and the Dynamics of Economic Development*, Macmillan, London, 1998; A. van der Zwan, "On the Assessment of the Kondratiev Cycle and Related Issues", in Kuipers S. K. e Lanjouw G. J. (Eds), *Prospects of Economic Growth*, North Holland Pub., Amsterdam.
[67] R. G. Gordon, "Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds", NBER Working Paper No. 18315, August 2012
[68] The six "headwinds" identified by Gordon include: demography, education, inequality, globalization, energy/environment, and the overhang of consumer and government debt.

of such a de-stabilizing event has been a mistake. Energy among the possible inputs of the global production function is the resource, which our economic system has been feeding most, and thanks to it we have reached this level of technology and prosperity. Therefore understanding how this (re)source impacts the long-term growth is essential to pursue a sustainable trajectory for the global economy. According to this point it is necessary defining *binding* energy policies[69] for the global economy so as to prevent future market collapses or energy crises just because they own the fatal characteristic of being endemic. The difference between an energy crisis and a financial crisis is that the latter is systemic, hence if you re-organize the economic system, it starts to work again, from a lower level, but with same rules and same possibilities. In the former scenario, the economy would lose its fundamental input - energy - with the impossibility on coming back on track, implying a drastic change in the shape of the production possibility frontier. The management of such an important resource as crude oil is, and of similar resources producing energy - gas, solar, nuclear, coal and wind - is a matter of all the states belonging to this planet called Earth, and it has to be left neither in the hand of few companies - as it happened before 70s with the Seven Sisters - nor to the competitive and long-term blind market forces.

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[69] The focus here is not on which energy policy must be implemented, but on the binding effect these policies must have for each country. There can be some degrees of freedom due to the different situations each country is facing. For example the binding effect must be related to the country's share of industrial production on the total, to its level of consumption and exploitation efficiency.

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