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Beyond American Petrodollar Hegemony at the eve of Global Peak Oil

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ABSTRACT

This paper examines the link between petro-dollar underpinned US hegemony with the coming global peak oil age in which volatile high oil prices will be a structural problem. Without attempting to pin down the exact timing of global peak oil, this paper assumes that global peak oil will indeed come to pass in the foreseeable future and will have significant implications on the global economy and global energy infrastructure. The paper mainly argues that sustaining American petrodollar hegemony would be a much more difficult at the eve of global peak oil due to two main reasons: First, a tendency among oil-exporting countries to accept a currency that has potential to challenge the principal reserve status of the dollar, the euro. Second, increasing reliance on alternative resources to oil, in particular natural gas is significant. Since the age of global peak oil will arrive sooner or later, US policy-making elites should understand that current international energy infrastructure is not sustainable and they need to take the required measures to increase the portion of renewables among energy resources to fuel the global economy.

Keywords: Oil Prices, Hegemonic Stability, Global Energy System.

Petrolün Küresel Zirve Dönemi Öncesinde Amerikan Petrodolar Hegemonyasının Ötesi

ÖZET

Bu makale petrodolar destekli Amerikan hegemonyası ile yüksek ve değişken petrol fiyatlarının yapısal problem oluşturacağı aşikar olan küresel zirve petrol dönemi arasındaki bağlantıyı incelemektedir. Bu makalede küresel zirve petrolünün tam olarak ne zaman meydana geleceği düşünülmeksizin, yakın gelecekte meydana geleceği ve küresel ekonomi ve enerji altyapısı üzerinde önemli etkiler doğuracağı varsayılmıştır. Gücü büyük oranda petrol ile dolar arasındaki bağdan ileri gelen Amerika'nın çıkarları var olan küresel enerji altyapısının devamlılığını gerektirmektedir. Bu çalışmanın temel savı küresel zirve petrolü arifesinde Amerika'nın petrodolar hegemonyasını sürdürmesinin daha güç olacağıdır. Küresel zirve petrolü gerçeği ve petrole alternatif enerji kaynaklarının gittikçe ağırlık kazanmakta olduğu bu dönemde küresel enerji altyapısının köklü bir şekilde değişeceğine yönelik güçlü sinyaller vardır. Bu noktada doğal gaz ve yenilenebilir enerji kaynakları temelli, hegemon gücün olmadığı, çok merkezli enerji rejiminin olacağı ve sepet para birimlerinin kullanacağı yeni bir küresel enerji sistemi oluşmaktadır. Amerikan yönetimi yenilemeyen hidrokarbon temelli uluslararası enerji rejiminin sürdürülemeyeceğini kabullenip, geleceğin yakıtını sağlayacak olan çevre dostu yeni enerji sisteminin oluşumunda gerekli adımları atmalıdır.

Anahtar Kelimeler: Petrol Fiyatları, Hegemonik İstikrar, Küresel Enerji Sistemi.

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Introduction

At a time of American sourced global financial crisis, we observe a trend of decline in oil prices, whereas, increase in the value of dollar. On the one hand, it is natural to detect falling oil prices at the verge of a global recession; on the other hand, it is paradoxical to note soaring value of a currency of a state, whose economy has been losing its credibility for a time. Without a doubt, the ongoing financial crisis accelerated shrinking confidence in American economy and its dictated global economic system. Then, why is the dollar value increasing? Does this mean that the American dollar remains as the international reserve currency, which is considered as a safe-haven for the investors at a time of global recession? Even though the economic effects of this global recession are temporary, their political implications along with the shrinking confidence in petro-dollar underpinned US hegemony will be acknowledged in the long-term. This is why there is a need for further study with regard to oil prices.

This paper examines the link between petro-dollar underpinned US hegemony with the coming global peak oil age in which volatile (high) oil prices will be a structural problem. Without attempting to pin down the exact timing of global peak oil, this paper assumes that global peak oil will indeed come to pass in the foreseeable future and will have significant implications on the global economy and global energy infrastructure. Because American power stems from its dominance over a global economy that in turn depends mainly on oil and its link with the dollar, Washington sees itself as having no choice, but to defend the global energy infrastructure, however, the process that leads to the global peak is irreversible. The paper mainly argues that sustaining American petrodollar hegemony would be a much more difficult task at the eve of global peak oil because of two main reasons. First, due to American political and economic mismanagement, there has occurred a tendency among oil-exporting countries to accept a currency that has potential to challenge the principal reserve status of the dollar, the euro. Despite the soaring oil prices, shrinking dollar cause exporters to gain less petro-dollar than they have been expecting to get. Thus, they are more than willing to accept a robust and stable currency to the payment of their oil reserves. No need to note, this inclination is more vigorous among oil-exporting countries with an anti-US strategy in their minds such as Russia, Iran and Venezuela, who have become more powerful actors on the global scene and attain increased influence and maneuvering space in world politics in line with soaring oil prices. Second, as oil prices and environmental consciousness rose, consumers would shift to alternative fossil fuels in particular to natural gas. Along with technological improvements in liquefied natural gas (LNG) and gas-to-liquids (GTL), natural gas will likely become the main challenger to take the place of oil as the primary energy resource. In that context, maneuvering space of net natural gas exporting states, Russia and Iran, will accelerate and likely to pose a tougher challenge to the US in the Eurasian landmass.

The first part of the paper clarifies certain terms such as 'hegemony'; 'hegemonic stability' and 'petro-dollar hegemony' and how they are being used to elaborate American petro-dollar hegemony. In the second part, impeding global peak oil issue is clarified. It is underlined that its principal effect will be volatile high oil prices. The third part evaluates prospects of the euro as the most likely alternative currency to the dollar in energy trade. In the fourth part of the paper, the rise of natural gas as a primary energy resource is underlined and its implications on net natural gas exporting countries, Russia and Iran, are assessed. The paper is concluded with the proposition that since the age of global peak oil will arrive sooner or later, US-policy-making elites should understand that current international energy infrastructure is not sustainable and they need to take the required measures to increase the portion of renewables among energy resources to fuel the global economy. Hence, Washington would not only take a robust step to end of its addiction to imported oil that pave the way for conflicts and resource wars, but also respond to environmental challenges.

Hegemonic Stability Theory Revisited: American Petrodollar Hegemony

According to Hinnebursh, "the Iraq war was less about some putative threat from a debilitated Iraq than it was about the US determination to *play the world hegemon*."[1] The concept of hegemony can be summarized as primacy or leadership in its most simplistic way. In order to be able to attain the position of global hegemony, a sovereign state must have three fundamental characteristics: It must possess the capability to enforce the rules of the system, the will to do so, and commitment to a kind of international system that is also perceived to be beneficial by the other major states.

The tradition that has consistently stressed on the role of US global leadership in the international relations (IR) and international political economy (IPE) is hegemonic stability theory (HST). The idea of a hegemon has captured a central reality of world politics in all of the rival schools of IR/IPE and there is a consensus among them that the hegemon is qualitatively different from other states in the system, it functions globally. HST's fundamental precept is that a hegemon is benign and necessary for the stability of international system to set out the rules of international relations and compel compliance with those rules

1 Raymond Hinnebusch, "Hegemonic Stability Theory Reconsidered: Implications of the Iraq War", Rick Fawn & Raymond Hinnebusch (Eds.), *The Iraq War: Causes and Consequences,* London, Lynne Rienner Publishers, 2006, p. 283.

by the other states. For liberals, a hegemon is required to set up international regimes that permit an open economy and provide 'public goods' such as a common currency.[2] This version of HST, in particular, considers the US hegemony as benign and argues that free-riding eroded its relative position, thereby, this version is grounded on the altruistic ideal that ignores the core traditions of realism and Marxism, which foresee large asymmetries of power to generate large unequal distributions of benefits. For realists, the anarchic world system was vulnerable to disorder without the security provided by a hegemon.[3] In contrast to its liberal version, they acknowledge that the hegemon pursues its own interests. Therefore, it frames the international economic system to fit its own advantage. This does not necessarily mean that other competitive states will not benefit from the system, but the hegemon will reserve its right to tax the beneficiaries for its services. A.F.K. Organski's version of HST supposes that hegemonic order excludes as well as includes so there will likely to be dissatisfied states or 'periphery states' that will naturally mobilize and challenge the hegemon in order to control the international system.[4]

This paper's approach is close to the realist version of HST. This does not prevent us to agree with theoretical criticisms that emphasized the possibility of a cooperative solution among non-hegemonic powers to the problems associated with creating and maintaining a liberal international economy[5] and the theory must make greater allowance for the possibility of malign hegemony.[6] In spite of its shortcomings, it is believed that HST could contribute to our analysis of today's US hegemony mainly underpinned with petro-dollars.[7]

The term dollar-hegemony is coined by Henry C.K Lui to describe American dollar, fiat currency, to become the reserve currency mainly due to the denomination of oil in dollars aftermath of the 1973 Middle East oil crisis in the post-Bretton Woods regime.[8] In 1971, the Nixon administration unilaterally took the

2 See, Robert O.Keohane and Joseph S. Nye Jr., *Power and Interdependence: World Politics in Transition,* Little Brown, Boston, 1977; Stephen Krasner, *International Regimes,* New York, Cornell University Press, 1983.

3 See, Robert Gilpin, *War and Change in World Politics,* Cambridge, Cambridge University Press, 1983.

4 A.F.K. Organski, *World Politics*, California, University of California Press, 1967.

5 David A. Lake, "Leadership, Hegemony, and the International Economy: Naked Emperor or Tattered Monarch with Potential?", *International Studies Quarterly,* Vol. 37, No. 4, December 1993, p.459-89; Duncan Snidel, "The Limits of Hegemonic Stability Theory", *International Organization,* Vol. 39, No. 4, Autumn 1985, p.579-614; and Helen V. Milner, *Interests, Institutions and Information*: *Domestic Politics and International Relations,* Princeton, Princeton University Press, 1997, p.24-25.

6 Hinnebusch, "Hegemonic Stability Theory Reconsidered", p. 283-322.

7 The petrodollar is notional unit of currency earned by a country from the export of petroleum.

8 Henry C. K. Lui, "Dollar Hegemony has to go", *Asia Times,* 11 April 2002.

decision to abolish the Bretton Woods regime, which had been established in 1945 as a fixed exchange rate regime based on a gold-backed dollar, mainly because its future hegemonic rule in global finance and politics looked uncertain under that system. By cutting of the link between the value of the US dollar and the value of the gold, Washington relived itself from the burden of maintaining a fixed par value of the dollar with the aim to restore the dominance of US capitals though turning the international monetary system into a 'dollar-standard regime'.[9] The oil crisis in 1973 did not only assist and enable US private banks to 'recycle the petrodollars'[10], but also led to US dominance over OPEC, and more importantly, assured that the US dollar would preserve its status as the principal reserve currency of the global economy. In February 1975, an oil agreement was negotiated and signed between the US and Saudi Arabia, OPEC's swing producer, ensuring OPEC to price its oil exports in US dollars. In other words, oil-importing countries through out the world would be required to pay American dollars for oil imported from OPEC members. A reliable demand for the American dollar was established regardless of other economic factors. As Krassimir Petrov argues,

> Because the world had to buy oil from the Arab oil countries, it had the reason to hold dollars as payment for oil. Because the world needed ever increasing quantities of oil at ever increasing oil prices, the world's demand for dollars could only increase. Even though dollars could no longer be exchanged for gold, they were now exchangeable for oil. The economic essence of this arrangement was that *the dollar was now backed by oil*.[11] [emphasis added]

To make it straight, the US believed that recycling petro-dollar flows and replacing gold with oil as the backer of the US dollar would sustain and reinforce its central role in the global economy, and this strategic commodity is still the main element that underpins US hegemony.

9 Peter Gowan, *The Global Gamble: Washington's Faustian Bid for World Dominance*, London, Verso, 1999, p. 19.

10 The term 'recycling the petrodollars' is coined by due time US Secretary of State Henry Kissinger to manage the about-to-be-created flood of oil dollars in the 1973 Middle East oil crisis. For an argument that addresses the detrimental role of petrodollar recycling for American hegemony see; David E. Spiro, *The Hidden Hand of American Hegemony: Petrodollar Recycling and International Markets,* New York, Cornell University Press, 1999.

11 Krassimir Petrov, "The Proposed Iranian Oil Bourse", 17 January 2006, http://www.energybulletin.net/12125.html, (Accessed on 15 February 2007).

Global Peak Oil

US Congressman Ron Paul foresees US economic collapse if the dollar hegemony is not upheld.[12] His prophecy should be stressed at the eve of the global peak oil in which the link between oil-dollar, thereby, the dollar hegemony is in jeopardy. Securing supply of oil at stable and reasonable prices is vital for the sustainability of the US led international economic system on the basis of petrodollars. Even though high oil prices could increase 'petrodollar recycling' in the short-term, continual high oil prices at a time of a weak dollar would probably cut down the artificial demand on the dollar and put its link with oil in jeopardy. In that context, it is plausible to talk about the issue of 'global peak oil'.

American geologist M.King Hubbert at a meeting of the American Petroleum Institute in 1956 first introduced the term 'peak oil'. It simply means running out of `cheap oil' or `easy oil`. Since the early days of oil production, the oil companies have chosen the oil close to surface that they could reach less costly. In other words, they have extracted 'cheap oil'. The world economic system has been shaped with the supposition that oil would be always available cheaply. When all of 'cheap oil' will be exhausted, the remaining oil will be technically difficult to reach.

Since the invention of Large Independent Mobile Machines (LIMMs) such as cars, planes and tractors, they have incrementally begun to shape our lives in many ways. To put it simply, LIMMs have become the main elements of international economic activities. "For a society in which LIMMs play a central role no other energy resource is efficient as oil. It is compact and easy to use, in its natural state it is located in highly concentrated reservoirs, and it can be transformed into a usable energy product rapidly, cheaply and safely."[13] Unfortunately, 'cheap oil', which has fuelled these LIMMs such a long time, has begun running out. "Although we will not run out of oil tomorrow, we are nearing the end of what might be called the easy oil. Even in the best of circumstances, the oil that remains will be more costly to find and produce and less dependable that the oil we are using today."[14]

The Hirsch Report, which was prepared for the US Department of Energy in February 2005, asserted that the likelihood of peak oil has been occurring and

12 Ron Paul, *Global Peace and Prosperity*, Texas, The Foundation for Rational Economics and Education, 1981.

13 Ian Rutledge, *Addicted to Oil: America's Relentless Drive for Energy Security*, London, I.B Tauris, 2005, p. 3.

14 Paul Roberts, *The End of Oil: The Decline of the Petroleum Economy and the Rise of a New Energy Order*, London, Bloomsbury Publishing, 2004, p. 47.

mitigation action should be taken soon. This report's executive summary started with the following paragraph:

> The peaking of world oil production presents the U.S. and the world with an unprecedented risk management problem. As peaking is approached, liquid fuel prices and price volatility will increase dramatically, and, without timely mitigation, the economic, social, and political costs will be unprecedented. Viable mitigation options exist on both the supply and demand sides, but to have substantial impact, they must be initiated more than a decade in advance of peaking.[15]

The report concluded that the world oil peaking would happen, oil peaking could cost the US dearly, oil peaking presented a unique challenge, the problem was liquid fuels, mitigation efforts would require substantial time, both supply and demand would require attention, it was a matter of risk management; and government intervention would be urgently required. Due to production and resource figures from many countries are unreliable, it is nearly impossible to make an accurate prediction on the date of peak oil. Nevertheless, the authors of the report made a survey to have an idea about the date of global peak oil by asking both optimists and pessimists to make forecasts. Their survey reached the conclusion that global peak oil will occur anywhere from 2005 to 2037.

Today, a great battle is ragging, largely behind the scenes, when we will reach the topping point or 'peak oil', and what will happen when we do: the 'late toppers' and the 'early toppers'.[16] The former group asserts that there is still more than 2 trillion barrels of oil or more remain to be exploited in foreseeable future. This 'late toppers' includes almost all oil companies, governments and their agencies, most financial analysts, and most business journalists. An independent petroleum geologist, Jeffrey J. Brown, states that there are mainly three groups[17] denying the reality, whom he defines as the 'Iron Triangle' that consider the reality of peak oil is a nightmare to come. [18]

The 'early toppers' is composed of dissident experts such as Colin Campbell, Chris Skrebowski, and Matthew Simmons, who have worked in the heart of the oil industry, and most of them are geologists gathered under the umbrella organization called the Association for the Study of Peak Oil (ASPO). They have

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15 Robert L. Hirsch, Roger Bezdek and Robert Wendling, *The Hirsch Report*, February 2005, http://www.projectcensored.org/newsflash/the_hirsch_report.pdf#search=%22Hirsch%20Report%20%22, (Accessed on 5 October 2006).

16 Jeremy Leggett, *Half Gone: Oil, Gas, Hot Air and the Global Energy Crisis,* London, Portobello Books, 2005, p. 24-25.

17 1) Most auto, housing and finance companies 2) Most of the mainstream media 3) Most major oil companies, major oil exporters and the energy analysts that work for them.

18 Jeffrey J. Brown, "Daniel Yergin Day", 13 July 2006, www.energybulletin.net/18111.html, (Accessed on 23 May 2007).

been joined by a growing number of analysts and journalists. This 'early toppers' think that 1 trillion barrels or less oil has left to be exploited and the topping point or 'peak oil' will arrive soon.

In our present time, what is more important than the exact time of global peak oil is we are living at the age of 'intentional production peak'. In that regard, International Energy Agency's (IEA) declaration that oil supply is lagging demand should be noted.[19] Actually, there is nothing surprising with this statement of IEA at a time of rising oil demand sourced from the East Asian countries (i.e. China and India) and Iran,[20] more importantly, OPEC's successful aggressive policy of 'binding strategy' to limit its production capacity [21] and its decision in 2000 to raise the target for its price band.[22] Indeed, there has been a supply/demand discrepancy and oil production levels are not sufficient to balance incremental demand on oil. Furthermore, the supply/demand squeeze on oil prices is going from bad to worse due to uncertainty and turmoil in oil-producing countries such as Venezuela, Iran, Nigeria, and Mexico. At this context, nominal US ally Saudi Arabia is the wildcard. According to Stephen Leeb, the president of Leeb Capital Management and editor of the prestigious newsletter *The Complete Investor*, the only factor that could decrease this rising de-

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19 Javier Blas, "Oil Supply Lagging Demand, says IEA", 10 August 2007, http://www.ft.com /cms/s/0/a38a39ae-4729-11dc-9096-0000779fd2ac.html?nclick_check=1, (Accessed on 25 March 2008).

20 Iran, one of OPEC members, currently an exporter of oil, will begin to import oil in the near future if it does not build nuclear energy plant to produce its future energy needs.

21 There are mainly two dimensions of OPEC's intentional failure. First, OPEC has been adopting 'binding strategy' to limit oil field capacity investments with the view that the future is theirs and worth waiting for with more than 78 percent of the world's reserves and a presumed natural limit to the growth of non-OPEC production. Second, within OPEC, it has been difficult for the national oil companies (NOCs), which has been dominating the upstream, to muster the capital technology, and human capabilities required to find an develop significant volumes of oil. See, Edward L.Morse & Amy Myers Jaffe, "OPEC in Confrontation with Globalization", Jan H. Kalicki & David L. Goldwyn (Eds.), *Energy and Security: Toward a New Foreign Policy Strategy,* Baltimore, The John Hopkins University Press, 2005, p.78-79.

22 Since the 1999-2000 oil crisis there has occurred rapprochement inside OPEC. The organization has developed a new dynamic that must be taken into account in predicting its future behavior and in developing the proper diplomatic and countermeasures to counteract its monopoly power. Thus, OPEC took the decision to raise the target for its price band. Critical to the newer OPEC consensus is the view that OPEC is in position to stand up to the West and that it should feel justified in doing so, because the West stood by and did nothing to help ease the debilitating suffering and destabilizing consequences of the 1998 price collapse. Thus, OPEC producers became less swayed to consider boosting production or reducing prices as favors for consumer economies battling against economic slowdown and possible recession. See, Morse and Jaffe, *Energy and Security*, p. 73.

mand on oil is a global recession, which is particularly the case at the moment; nevertheless, it is only a temporary solution.[23]

Along with those uncertainties in oil-producing countries, OPEC's 'binding strategy' and reliance on the national oil companies (NOCs) create artificially high oil prices that could pave the way for one of the biggest threats to American power: *oil price volatility*. As Paul Roberts indicates,

In the post-Cold-War era, the only risks to American primacy are the threats posed by energy disruption and, to a lesser degree, world terrorism. And in the minds of many neoconservatives, these two threats neatly intersect in OPEC's continuing control over Middle Eastern oil. The artificially high prices OPEC imposes have insulated oil-state autocrats from the winds of political change, while allowing them to fund their increasing anti-American paramilitary agendas. At the same time, and perhaps even more significantly, OPEC's self-serving and shortsighted efforts at 'price management' have brought decades of high prices and volatility that have eroded economic growth and, therefore, American power.[24]

In the conjuncture of continuous high and volatile oil prices, old rules of the international system will be no more valid. Apart from its negative effects on the proper functioning of international economy, high oil prices mean non-friendly regimes to the US such as Russia, Iran and Venezuela would become more powerful actors and acquire wide maneuver space in world politics. Moreover, net oil importer rising countries, China and India, would look for alternative options out of American hegemonic dictates at the age of fluctuating high oil prices.[25] Clearly, these potential developments would have significant negative implications for American petrodollar hegemony.

One can argue that high oil prices would increase the 'recycling of petrodollars', however, it is not actually the case at a time of 'war on terror' in which the US has been acting unilaterally by using coercive means in the post-September 11 period. At that point, the statement of the Bank of International Settlements (BIS) regarding to an unusual phenomenon should be noted: In spite of oil prices increasing 85 per cent from 2001 to 2004, overall the Saudi Arabia led OPEC bank barely rose. "Oil reserves have not been channeled into the interna-

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23 Stephen Leeb & Glen Strathy, *Ekonomik Çöküşün Ayak Sesleri* (The Coming Economic Collapse), İstanbul, Salyangoz Yayınları, 2007, p. 127-28.

24 Roberts, *The End of Oil*, p.110.

25 See, Emre İşeri, "Asian Energy Security: Anti-Geopolitics of International Energy Markets versus Asian Terrestrial Geopolitics", *Uluslararası İlişkiler,* Vol. 4, No. 15, Fall 2007, p.89-108.

tional banking system in the most recent cycle." [26] The statement of the BIS reveals that the US's unilateral coercive stance to impose global standards and to determine and police threats has triggered resistance and became counterproductive over time as G.John Ikenberry anticipated.[27]

Saudi Arabia's Prince Bin-Abd-al-Rahman reveals that oil exporters acknowledge the Achilles Heel of the US and more severe resistance acts will likely to come in the following days, "…rather than resorting to an [oil] embargo… a more effective punishment for the United States, Israel's principal source of financial and political support, would be to *change the currency in which oil is traded from the dollar to the euro,* something that Iraq has already done."[28] [Emphasis added] To clarify what the Saudi Prince has meant, we need to elaborate on the Euro-Dollar battle, followed by Saddam Iraq's attempt to denominate its oil sales in euros and Iranian oil bourse initiative at the eve of global peak oil.

Euro as Alternative Currency in Energy Trade

As Gowan argues;

> the dominance of the dollar is not simply the result of the size of the US economy. It is also and importantly the result of two other things: politics and finance… A state that controls the sources of world oil politically can ensure that oil is priced and largely paid for in its currency-in this case, in dollars-and thus can defend its international dominance.[29]

As has been explained in an earlier section, this has become the case for the US dollar in the aftermath of an agreement concluded in 1975 with OPEC about pricing its oil exports exclusively in US dollars, also known as petrodollars. Since oil is an indispensable product for all national economies (and since most countries are net oil importers), this agreement created a dependable demand for US currency on the global market, regardless of other economic factors or financial dynamics. This state of affairs has led to an artificial overvaluation of the US dollar in international monetary markets. Therefore, the value of the US dollar was incrementally (yet artificially) reinforced and preserved.

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26 Steve Johnson and Javier Blas, "OPEC Sharply Reduces Dollar Exposure", *Financial Times,* 06 December 2004.

27 John G. Ikenberry, "America's Imperial Ambitions", *Foreign Affairs,* Vol. 81, No. 5, September/October, 2003, p.44-60.

28 Editorial, "Protest by Switching Oil Trade from Dollar to Euro", *Oil and Gas International,* 15 March 2002, http://www.agitprop.org.au/nowar/20020415_ogi_switch_trade_currency.php, (Accessed on 17 March 2008).

29 Peter Gowan, "US Hegemony Today", John Bellamy Foster and Robert W. McChesney (Eds.), *Pox Americana: Exposing the American Empire*, London, Pluto Press, 2004, p. 67.

However, the fortunes of the US dollar have begun to deteriorate in the new millennium. In 1999, the euro was introduced to world financial markets as an accounting currency, and it was launched as physical coins and banknotes in 2002. Soon after its introduction to the global financial markets, the euro emerged as an alternative to the US dollar, and more importantly, as a potential rival foreign reserve currency. In its early days, the volatility of euro in value prevented it from gaining widespread acceptance as a medium of exchange in the international financial markets. Nevertheless, the exchange value of the euro eventually began to rise, and it exceeded the value of the US dollar in the early 2000s, due mainly to the slow pace of economic growth in the United States in the first few years of the millennium. During that time, many investors lost large amounts of money because of the losses incurred in the American stock markets. When investors began to desert the US markets and shift their investments to the European stock markets in 2001, the euro hiked against dollar. As of this writing in July 2008, 1 Euro was worth 1.65 US dollars. Amid debates on the coming currency crisis, mismanagements in American economy (i.e. sub-prime mortgage crisis), rising costs of American foreign debt[30] and costs of 'war on terror'[31] would likely to lead global decline of confidence in American dictated global economy and the dollar in the long term.[32] "In times of currency crisis, markets react to a declining currency value by exchanging it for something that is presumed to offer a more secure value by exchanging it for something that is presumed to offer a more secure value, which can be another currency or some money instrument, a commodity, or land."[33]

It should be noted that the introduction of the euro and its challenge to the supremacy of the US dollar have created an ideal opportunity for those countries that ideologically oppose the policies of the United States. If they choose the euro to denominate their exports and foreign currency reserves, they would have the capability to harm the American economy. This is because the sale of great

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30 As of March 2008, the total U.S. federal debt was approximately $9.4 trillion with a $ 1.4 trillion of increase since 2005.

31 Joseph E. Stiglitz calculates that the bill for the Iraq war is likely to top $3 trillion. See, Joseph E. Stiglitz and Linda J. Bilmes, *The Three Trillion Dollar War: The True Cost of the Iraq Conflict*, New York, Allen Lane, 2008.

32 History has mixed lessons for the shift of currencies and also for the dollar. The good news is that shifts between reserve currencies take place gradually. Sterling was not, as previously thought, abruptly dethroned by the dollar; the dollar in turn is unlikely to fall from grace suddenly. But history also teaches that reserve currency status is not a natural monopoly, protected by incumbency and inertia. The euro, says Barry Eichengreen of University of California, is a plausible alternative to the dollar. See, "The resilient dollar" *Economist,* Vol. 387, No. 8600, 10 April 2008, p. 84.

33 Darrell Whitman, "As Good as Gold: Oil and the Global Political Economy", Bülent Gökay (Ed.), *The Politics of Oil*, London, Routledge, 2006, p. 29.

amounts of dollar assets would increase the supply of US dollars in the international markets, and thus lead to the devaluation of the US dollar. Furthermore, these countries would accept (or perhaps even require) euros as payment for their exports, whereby; the demand for US dollars in the international markets would further decline. If non-committed countries also support this process, it is quite possible that the international monetary system that had prevailed for more than half a century could be turned upside down.

The US dollar's oil backing is a crucial element underpinning its petrodollar hegemony. Thus, the most significant factor that motivated and ultimately persuaded US policy-making elites to take the nation to war against Iraq was the fact that the Iraqi regime had begun exporting its oil in euros rather than dollars. As Petrov asserts;

> If, for any reason, the dollar lost its oil backing, the American Empire would cease to exist. Thus, Imperial survival dictated that oil be sold only for dollars. It also dictated that oil reserves were spread around various sovereign states that weren't strong enough, politically or militarily, to demand payment for oil in something else. If someone demanded a different payment, he had to be convinced, either by political pressure or military means, to change his mind.[34]

This is particularly the case in US-led war in Iraq. On November 6, 2000, the Iraqi government announced that it was no longer accepting US dollars for oil that it sold under the UN's Oil-for-Food Program and that it would switch to the euro as Iraq's oil export currency, "hence launching the so-called 'secret weapon' of Iraq."[35] This was the first time in history that an OPEC member had started to export its oil not in US dollars, but in euros, which was the only currency that had the potential to rival dollar's global dominance. The possibility of OPEC member countries exporting their oil in euros rather than dollars was a much more significant reason underlying the US government's decision to go to war in Iraq than the reasons that were publicly offered by the Bush administration (such as the non-existent WMD capabilities of the Iraqi regime and the cruelty of Saddam Hussein toward his own people). Initially, US policy-making elites did not take the announcement of the Iraqi government of its initiative to sell its oil in euros seriously; moreover, they considered this act to be unwise and ill-advised due to their presumption that Iraq's oil revenues would subsequently decline if the regime went ahead with its switch to the euro for its oil exports.

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34 Petrov, "The Proposed Iranian Oil Bourse".

35 Bülent Gökay, "Petrodollar became the Essential Basis for the US Economic Hegemony in the 1970s", 16 May 2006, http://english.pravda.ru/opinion/feedback/16-05-2006/80382-petrodollar-0, (Accessed on 30 October 06).

However, the euro's valuation against the US dollar two years after its introduction posed a serious challenge to the dominance of the US dollar. If other countries followed Iraq's example and denominated their oil exports in euros, then the euro would continue to climb, eventually surpass the US dollar in value, and it could potentially replace the US dollar as the primary international reserve currency. Clearly, this would mark the end of US global dominance in the global financial system. In that regard, the following words of William Clark should be noted:

> The Federal Reserve's greatest nightmare is that OPEC will switch its international transactions from a dollar standard to a euro standard. Iraq actually made this switch in Nov. 2000 (when the euro was worth around 82 cents), and has actually made off like a bandit considering the dollar's steady depreciation against the euro. (*Note: the dollar declined 17%against the euro in 2002.*) The real reason the Bush administration wants a puppet government in Iraq -- or more importantly, the reason why the corporate-military-industrial network conglomerate wants a puppet government in Iraq -- is so that it will revert back to a dollar standard and stay that way (While also hoping to veto any wider OPEC momentum towards the euro, especially from Iran -- the 2nd largest OPEC producer who is actively discussing a switch to euros for its oil exports).[36] [Italics in the original]

To make our point clear, we agree with Gökay's observation that, "if a significant part of the petroleum trade were to use euros instead of dollars, many more countries would have to keep a greater part of their currency reserves in euros."[37] This has several vital implications for the dominance of the American dollar, and therefore for the US's sole superpower status in the global order. The size of the US economy is not the only element that underpins the dominance of the US dollar. Political control over the world oil resources enables the United States to ensure that the sale of oil on the international markets is transacted in dollars. Hence, the United States sustains the dollar's dominance as the international reserve currency. In sum, regime change in Iraq was required not only for gaining political control over its oil reserves, but also and more importantly, to protect the international dominance of the American dollar, and thus sustain the US economic hegemony in the twenty-first century.

The United States had prepared its war plans against Iraq without approval from the UN Security Council or support from most of its Cold War allies, except for Britain and a few others, such as Portugal, Spain, and Poland. The core

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36 William Clark, "The Real Reasons for the Upcoming War with Iraq: A Macroeconomic and Geo-strategic Analysis of the Unspoken Truth", March 2003, http://www.ratical.org/ ratville/CAH/RRiraqWar.html, (Accessed on 12 December 2007).

37 Gökay, "Petrodollar".

EU powers, Germany and France, along with Russia and China, declared their fervent opposition to a US-led war in Iraq. It should be noted that the underlying basis of their opposition was far from a peaceful idealism; they had currency concerns (and plans) of their own: "One of the reasons Germany and France opposed the war in Iraq was that they knew Saddam Hussein's switch to the euro as Iraq's oil transaction currency enhanced the movement worldwide to the euro as a major reserve currency."[38]

Furthermore, Russia's giant oil company, Lukoil, and two other Russian national companies had contracts with the regime of Saddam Hussein to develop Iraq's West Qurna oil fields. France held the rights to exploit huge oil resources in Iraq. A US-led war in Iraq was particularly alarming for Beijing, in the sense that its future as a global economic power depended on securing the necessary energy resources for fast economic development. If the US invasion was successful (as no one doubted it would be), one of the most promising resources for its future energy needs, the oil fields in Iraq that China held the rights to exploit, would come under US military control. Thus, each state was looking out for its own national interest in opposing a US-led invasion of Iraq. In other words, these potential great powers were all aware of the fact that a unilateral invasion of Iraq by the United States would mean not only the end of a potentially enhanced role for the euro in world markets, but also the end of their oil dreams.

This is actually what happened in the post-war reconstruction of Iraq. Two months after the invasion, the United States terminated the UN's Oil-for-Food Program, converted the Iraqi euro accounts into dollar accounts, and declared that Iraqi oil would once again be sold in US dollars. Hence, global customers could no longer buy Iraqi oil in euros. On the issue of Iraqi oil extraction and development, it was made clear from the outset (even before the war had commenced) that only allies who joined the United States in the war would get the lucrative contrasts for the post-war reconstruction of the Iraqi oil industry. Not surprisingly, American and British oil companies were at the top of the list to get these oil contracts with highly profitable returns. The United States did not even refrain from asking foreign troops to maintain the security of the oil fields during the post-war re-construction process. [39]

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38 William Clark, *Petrodollar Warfare: Oil, Iraq and the Future of the Dollar*, Gabriola Island, New Society Publishers, 2006, p. XVII.

39 Mainly due to Shi'i, Sunni, and Kurdish ethnic groups' clashing political interests, which have taken its most manifest form in their contentions on concluding an Iraqi oil sharing agreement, it is not possible to talk about everlasting peace in Iraq. This poses a significant challenge for American global interests. For an elaborate analysis see, Mert Bilgin, "ABD'nin Irak'taki Stratejik Açılımları: Petrol, Rejim, Güvenlik ve Ötesi", (The US's Strategic Openings on Iraq: Oil, Regime, Security and Beyond), *Avrasya Dosyası,* Vol. 2, No. 2, 2006, p.153-184.

In his article entitled, *Déjà Vu–the search for Weapons of Mass Destruction this time in Iran*, Gökay claims that, just as Republican US policy-making elites offered the presence of weapons of mass destruction as sufficient justification to invade Iraq, they are now attempting to do the same thing, without proffering any clear and convincing evidence, for a prospective bombardment of Iran. Gökay argues that the Iranian regime actually poses a more serious threat to US hegemony: "Iran is about to commit a far greater offence than Saddam Hussein's conversion to the euro for Iraq's oil exports in 2000. The plan is not just to sell oil for euros, but also to create an exchange market for all interested parties, oil producers as well as those customers, to trade oil for euros."[40] Furthermore, as Mike Whitney indicates;

> Iran switched from the dollar in 2007 and has insisted that Japan pay its enormous energy bills in yen. The 'conversion' has infuriated the Bush administration and made Iran the target of US belligerence ever since. In fact, even though 16 US Intelligence agencies issued a report (NIE) saying that Iran was not developing nuclear weapons; and even though the UN's nuclear watchdog, the IAEA, found that Iran was in compliance with its obligations under the Nuclear Nonproliferation (NPT) Treaty; a preemptive US-led attack on Iran still appears likely.[41]

There are several instances that underpin Iranian oil bourse initiative. First, Iran is the second largest oil producer in OPEC and it is the fourth largest oil producer in the world. Second, its geographical positioning facilitates Iran's oil bourse initiative: Iran is geographically proximate to oilfields in the Middle East and the Caspian Sea and it is not far away from principal oil importers such as China, India, and the European Union (EU). For these oil importers, Iranian bourse initiative is in line with their interests. Iran exports 30 per cent of its oil production to the EU and remaining amount basically to China and India. By indicating Persian Gulf states are producing world's 60 per cent of oil and 25 per cent of natural gas, Tehran asserts that there is no need for oil sales in New York and London. Few principal oil exporters such as Venezuela and several major oil importers such as China and India have already declared their support for Iranian bourse.[42]

One of the most significant dimensions of Iranian bourse initiative is now on demand for oil comes mainly from the East, China.

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[40] Bülent Gökay "Déjà vu–the search for Weapons of Mass Destruction this time in Iran", 17 May 2006, http://english.pravda.ru/opinion/feedback/17-05-2006/80453-Iran-0, (Accessed on 30 October 2006).

[41] Mike Whitney, "Fragile Dollar Hegemony: Iran's Oil Bourse could Topple Dollar", 04 February 2008, http://www.globalresearch.ca/index.php?context=va&aid=7998, (Accessed on 24 March 2008).

[42] Niusha Boghrati, "Iran's Oil Bourse: A Threat to the US Economy", 11 April 2006, http://www.worldpress.org/Mideast/2314.cfm, (Accessed on 24 March 2008).

> The United States and China are now locked in an unhealthy relationship, within which soaring US imports from China are paid for by soaring US debts held by China. How long that process can go on before upward spiral tips into downward plunge, no one can say. But not forever.[43]

There are clear signals that China, which has been holding around 700 billion dollars, would like to make a change in its unhealthy relationship with the US. It divorced itself from the dollar peg in 2005 and began to diversify its large dollar reserve holdings in 2006.[44] If China decides to take one step further and diversify significant amount of its dollar currency reserves with the euro, this initiative would have significant implications in international financial markets.

As Clark argues, "Interest in the Iranian bourse will be strongest in countries whose main trading partners are within the eurozone, migration of some Russian oil futures to a euro-denominated contract via the Iranian bourse appears inevitable."[45] Alexei Kudin's, the finance minister of Russia, statement that "dollar too unstable to be reliable"[46] reveals that as the largest natural gas producer and the second largest oil producer of crude oil, Russia, which has been cutting its dollar reserves and selling its Russian Ural blend crude oil in rubles since 2006, would likely to support euro-based transactions via the anticipated Iranian bourse to enhance its relations with the EU.

> There are a lot of reasons why countries within the Eurozone and Russia would prefer to trade oil in Euros over dollars. The volatility in the US dollar and the cost of converting currencies could make Petroeuros particularly attractive. Of course there are many political barriers that need to be overcome, but oil priced in both dollars and euros appears likely over time.[47]

In the wake of financial crisis in 2008, China's concern regarding Washington's economic policies and global financial dominance has increased dramatically. According to Shi Jianxun, a professor at Shanghai's Tongji University;

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43 Leon Fuerth, "Energy, Homeland, and National Security", Jan H. Kalicki and David L. Goldwyn (Eds.), *Energy & Security: Towards a New Foreign Policy Strategy*, Baltimore, The John Hopkins University Press, 2005, p. 416.

44 "China PBOC advisor warns forex reserves face US dollar risks", 27 April 2006, http://www.forbes.com/business/feeds/afx/2006/04/27/afx2701304.html, (Accessed on 13 March 2008).

45 William Clark, "Hysteria Over Iran and a New Cold War with Russia", 15 January 2007, p. 27, www.petrodollarwarfare.com/PDFs/Hysteria_Over_Iran_and_a_New_Cold_War_with_Russia.pdf (Accessed on 24 March 2008).

46 "Dollar too unstable to be reliable–Russian minister", 21 April 2006, http://www.en.rian.ru/russia/20060421/46778404.html, (Accessed on 25 March 2008).

47 Forex Rate–Currency News, 14 February 2007, http://www.forexrate.co.uk/news/item/1056, (Accessed on 24 March 2008).

> The grim reality has led people, amidst the panic, to realize that the United States has used the U.S. dollar's hegemony to plunder the world's wealth... The U.S. dollar is losing people's confidence. The world, acting democratically and lawfully through a global financial organization, urgently needs to change the international monetary system based on U.S. global economic leadership and U.S. dollar dominance.[48]

No need to note, at the eve global peak oil, unstable high oil prices and weak dollar value would provide an additional impetus for oil exporters and countries with huge dollar holdings such as China to diversify their dollar reserves and hold substantial amounts of euros. Clearly, these developments would put the American petrodollar hegemony in jeopardy.

After Global Peak Oil: The Rise of a New Energy System

As oil prices and environmental concerns rose, energy actors started to search for alternatives in particular natural gas and renewable sources. The current trend, which imposes a transition to a post-hegemonic international energy system with multiple energy sources and suppliers, is characterized by three pressures: First, there is a powerful and varied conjunction of environmental, technological, socioeconomic and political factors weighing on the oil energy scene. Second, such conjunction seems to point to an accelerated substitution, in the near future, of oil and other fossil fuels by other renewable and cleaner energy sources. Third, these sources would be primarily based on solar energy (which also comprises biomass energies, indirectly produced by sunlight) and hydrogen, plus other less conventional renewable energies currently unfolding.[49]

These pressures evoke environmental friendly solutions degrading fossil fuels. Yet economic restraints (provoking mores use of coal) and geopolitical issues (forcing more use of nuclear) will continue to be highly effective in global energy system. In the mean time, natural gas, which embraces environmental responsiveness with security issues, is likely to become the most widely used product in two decades. Along with technological improvements in liquefied natural gas (LNG) and gas-to-liquids (GTL), natural gas will likely become the main natural resource of international energy markets.

According to global oil strategist Adam E. Sieminski;

> natural gas is a hugely abundant, low-cost, clean-burning, non-OPEC commodity that counters many concerns over dependence on oil, and as a result it is witnessing significant and accelerating growth in demand and trade. The es-

48 "U.S. has plundered world wealth with dollar–Chinese Paper", 24 October 2008, http://www.reuters.com/article/companyNewsAndPR/idUSPEK466920081024?pageNumber=1&virtualBrandChannel=0&sp=true, (Accessed on 28 November 2008).

49 Frank Bracho, "The Future of Oil and Energy: Consequences for Oil Producing Countries", *Foresight*, Vol. 2, No. 4, 2000, p. 387.

> tablishment of LNG as a globally traded commodity, and the promising investments in gas-to-liquids (GTL) technology that can turn methane into clean diesel, provide tangible and irrevocable evidence of a twenty-first-century megatrend. In addition to LNG and GTL, other nonconventional natural gas technologies-such as coal-bed methane, tight sands, and gas hydrates – could be significant sources of hydrocarbons in the future.[50]

When we consider environmental concerns regarding 'global warming' or climate change, which is primarily an energy problem, clean-burning characteristic of natural gas should be stressed. Natural gas is also significant in the sense that it will have direct geopolitical effects on emerging energy regime in the global peak oil era.

Clearly, the rise of natural gas as a primary energy resource would have significant implications on natural gas exporters such as Russia and Iran. Their proximity to energy thirsty rising countries such as China and India along with the European Union (EU), Russia and Iran offers significant advantages. For the EU, all forecasts point out that its natural gas consumption will grow rapidly and the dependence of EU countries on their main natural gas provider – Russia – will rise. Despite natural gas pipeline projects that have been under construction, the Turkey-Greece-Italy (ITGI) and the Turkey-Bulgaria-Romania-Hungary-Austria (Nabucco), significance of Russia for the EU will not curtail in the short-term.[51] Yet more pipelines starting from Caspian and Middle East to reach the EU via Turkey are needed due to economic, environmental and security reasons. Bilgin indicates that, along with environmental stresses, recent political and technological developments have increased the significance of 'inner-Caspian', comprising Azerbaijan, Kazakhstan and Turkmenistan, and Western energy corridor through Turkey (WECT) which might facilitate transportation of Caspian (Azerbaijan and Turkmenistan) and Middle East (Iraq, Iran and Egypt) gas to Europe.[52]

Iran is more than willing to enhance its ties with Turkey and India through bilateral natural gas deals in spite of objections from Washington. With a doubt, Iranian natural gas is one of the most feasible options both for India and Turkey to meet their energy needs. In the light of these arguments, it is evident that growing demand for natural gas will enlarge maneuvering spaces of natural gas

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50 Adam E. Sieminski, "World Energy Futures", Jan H. Kalicki and David L. Goldwyn (Eds.), *Energy & Security: Towards a New Foreign Policy Strategy,* Baltimore, The John Hopkins University Press, 2005, p. 47.

51 See, Emre İşeri, "The EU's Energy Security and Turkey's Energy Strategy", *Turkish Review of Eurasian Studies,* 2007, p. 5-26.

52 According to Bilgin, there are 4 main reasons that support the rise of WECT: 1) Product and purchase cost advantages. 2) Supply cost advantages. 3) System and infrastructure advantage. 4) Security advantage. See, Mert Bilgin, "New prospects in the political economy of inner-Caspian hydrocarbons and western energy corridor through Turkey", *Energy Policy,* Vol. 35, 2007, p. 6383-6394.

holders, Russia and Iran, and led them to become a tougher challenge for the US to pursue its interests in the Eurasian landmass at the eve of global peak oil. Furthermore, natural gas deals such the recent one to begin exporting natural gas to China by 2012 could be a major factor paving the way for intensified Sino-Russian strategic collaboration in the Eurasian landmass.

The EU is very much concerned with environmental restraints and security issues, which not only lead to more attributes to natural gas and renewable energy but also create a discrepancy between the USA and the EU in terms of the currency used for energy imports. That is to say; a common European energy policy, which presumes supply diversification to include Caspian and Middle Eastern countries within European energy grid through Turkey, would create geopolitical and financial effects by allowing countries such as Iran and Iraq make energy trade in euros with the EU.[53]

This analysis indicates a shift to a new global energy system with similarities and dissimilarities to previous epochs as shown in Table 1.

Table 1. Global Energy Regimes, Source: Bilgin, "Energy Supply Security".

	Energy Resources		Actors			Terms of Energy Trade
	Main	Other	Hegemonic Actor	*Competing and Influential Actors*	*Corporate Characteristics*	*Dominant Hard Currency and Other Means*
Coal Era (18th-19th Century)	Coal	Primitive use of naphtha and renewables (i.e. wood and wind)	Britain	France, Germany	1- National 2- Monopolistic 3- Dominative	Gold, Sterling
Oil Era (20th Century)	Oil	Nuclear, Natural Gas	The US	(Soviet)-Russia OPEC, the EC/EU	1- Multinational 2- Exploitative	Dollar – Barter (in USSR)
Late Oil Era (Late 20th Early 21st Century)	Oil and natural gas	Coal, Nuclear, Technological use of renewables	n/a Post-hegemonic transition	Supply Side (OPEC, Russia) Demand Side (The US, the EU, China, India) (gas-OPEC?)	1- Multinational 2- Corporate Financial 3- Speculative, manipulative	Dollar, funds, rising amount of Euro and Yen
Post-Oil Peak Era (21st Century)	Natural gas Oil	Coal, nuclear, hydrogen, renewables (High technological breakthrough, e.g. nano-technology, hydrogen, cold-fusion?)	Multi-centered	China, Russia, USA, The EU / OPEC, non-OPEC Producers' Organization, Gas Producers' Organization, (Global Environmental Ombudsman?)	1- Multinationals 2- Giant Consortia 3- Monopolistic Tendencies?	Basket of currencies i.e. dollar-euro-ruble-yuan (Rise of a new regional, Euro-Atlantic, another international currency or an Asian basket?)

The global peak oil era, as Bilgin indicates, is likely to be characterized by a shift to; 1- the rise of natural gas and renewable energy and their peak by 2030; 2- non-presence of a hegemon between 2010-2030; 3- the rise of a multi-centered energy regime in the same era; 4- a basket of hard currencies such as dollar-euro-ruble and yuan, given that a tremendous breakthrough that might

[53] Mert Bilgin, "Energy Supply Security Problems and Alternative Solutions", Working Paper, *Turkey's Strategic Vision in 2023 Project*, Istanbul, TASAM, 17 September 2008.

lead to global consequences in energy technologies (mainly on nano, hydrogen and cold fusion applications) is not expected at least until 2030.[54] This shift, going to a multi-centered global energy regime, will lead to significant consequences for the US which will need to cope with the emerging challenges outdating its former hegemonic privileges.

Conclusion

This paper scrutinized oil and petrodollar dimension of the US hegemony in a period that cheap oil will no more be available. With the assumption that volatile oil prices will become a structural problem, it is argued that sustaining her hegemony on the basis of its political dominance over oil and the flow of petrodollars will become a tougher challenge for the US at the eve global peak oil, due to two main reasons. First, American political and economic mismanagement have led several oil-exporting countries, particularly among the ones with an anti-US strategy in their minds, to consider alternative currency such as the euro to denominate their oil exports. Second, as oil prices and environmental constraints rose, demand side countries started to ask for a balanced use of natural gas, coal, nuclear and renewable sources along with oil. Supply security issues and technological improvements in LNG and GTL, did not only increase the significance of natural gas but also consolidated its geopolitical implications. In that context, maneuvering space of net natural gas exporting states, Russia and Iran, will accelerate and likely to pose a tougher challenge to the US in the Eurasian landmass. These findings strengthen that a new global energy system is about to come with new characteristics among which are; 1- more use of natural gas and renewable energy, 2- non-presence of a hegemon, 3- a multi-centered energy regime based on a basket of hard currencies such as dollar-euro-ruble and yuan. This is why US-policy-making elites should acknowledge that current international energy regime on the basis of non-renewable hydro-carbon oil resources is not sustainable and they need to take the required measures to decrease the share of this environmentally unfriendly resource and increase one of renewables among energy resources to fuel the future needs of global economy. Hence, Washington would not only take a robust step to end of its addiction to imported oil that pave the way for numerous conflicts and resource wars, but also respond to geopolitical and environmental challenges at the same time.

[54] Ibid.

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