



**Oil,  
Dollars,  
Debt,  
and  
Crises**

**The Global Curse of Black Gold**

*Mahmoud A. El-Gamal and Amy Myers Jaffe*

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### *The Global Curse of Black Gold*

*Oil, Dollars, Debt, and Crises* studies the causes of the current oil and global financial crisis and shows how America's and the world's growing dependence on oil has created a repeating pattern of banking, currency, and energy-price crises. Unlike other books on the current financial crisis, which have focused on U.S. indebtedness and American trade and economic policy, *Oil, Dollars, Debt, and Crises* shows the reader a more complex picture in which transfers of wealth to and from the Middle East result in a perfect storm of global asset and financial market bubbles, increased unrest, terrorism and geopolitical conflicts, and eventually rising costs for energy. Only by addressing long-term energy policy challenges in the West, economic development challenges in the Middle East, and the investment horizons of financial market players can policy makers ameliorate the forces that have been causing repeating global economic crises.

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*Foreword by James A. Baker III*



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# Contents

<i>List of Illustrations</i>	<i>page</i> vii
<i>List of Tables</i>	ix
<i>Foreword</i>	xi
<i>Preface</i>	xiii
<b>1 The Challenges of Resource Curses and Globalization</b>	<b>1</b>
Volatilities: Financial, Economic, and Geopolitical	10
Petro-States, Hydrocarbon Dependence, and Resource Curses	14
Geopolitical Conflicts and the Politics of Discontent	16
Mounting Debt and Fragility of the Global Financial System	18
Constants and Variables in the Cycle: 1970s to the Present	19
<b>2 New Middle East: Childhood 1973–84 and Adolescence 1985–95</b>	<b>25</b>
OPEC's Market Power: Economics, Politics, and Volatility	26
Middle-East Flows of Labor, Capital, and Cultural Norms	31
Oil Price Collapse and the Politics of Discontent	33
The Rise of National Oil Companies	40
Militarism, Debts, and Global Finance	44
<b>3 Road to the Status Quo: 1996–2008</b>	<b>51</b>
Changing OPEC Politics and Renewed Oil Revenues	52
The Other Black Gold: Natural Gas	60
The Economics and Geopolitics of Middle-East Discontent	65
<i>Déjà Vu</i> : Overgrown Children of the 1970s?	71
<b>4 Globalization of Middle-East Dynamics</b>	<b>75</b>
Hedge Funds and Sovereign Wealth Funds	76
Increased Financial Integration and Contagion	80
Liquefied Natural Gas and Globalized Energy Markets	85
Conflicts, Economic Sanctions, and the “War on Terror”	90

<b>5</b>	<b>Dollars and Debt: The End of the Dollar Era?</b>	97
	The Dollar as Reserve Currency	97
	Bretton Woods and Beyond: The Primacy of U.S. Debt	99
	Global Economic Growth, Interest Rates, and Debt	101
	Uneasy Symbiosis: U.S. Consumers and Asian Savers	103
	Contagion: Sequential Bubbles and Crashes	107
	The Dollar and Bets on Chinese Growth and Oil	110
<b>6</b>	<b>Motivations to Attack or Abandon the Dollar</b>	117
	America's "Exorbitant Privilege" and Geopolitics	119
	Petrodollar Recycling and the Dollar-Pricing of Oil	121
	Saddam Hussein, Ahmadinejad, and Dreams of Petroeuros	122
	The Paradox of Pegged Currencies	125
	Pegged Currencies and "The Balance of Financial Terror"	130
	The Threat of Renewed Protectionism and Mercantilism	134
	Globalization with Multiple Currencies: Bretton-Woods III?	139
<b>7</b>	<b>Resource Curses, Global Volatility, and Crises</b>	143
	Continued Regional and Global Resource Curses	144
	The Global Resource Curse	147
	Continued Global Dependence on Oil	150
	Global Conflicts, Radicalisms, and Terrorism	159
	Serial Amnesia, Greed, and Financial Crises	164
	Peaks and Troughs: The Need to Ameliorate the Cycle	167
<b>8</b>	<b>Ameliorating the Cycle</b>	171
	Technical Solutions and International Cooperation	175
	Attenuating the Energy-Markets Cycle	177
	Energy Market Regulation and Multilateral Intervention	181
	Petrodollar Recycling and International Lender of Last Resort	184
	Managing Geopolitical Conflicts	188
	<b>Conclusion</b>	191
	<i>Notes</i>	193
	<i>Bibliography</i>	210
	<i>Index</i>	216



# List of Illustrations

1.1	Dollar prices of gold and oil 1970–2009. <i>Source:</i> IMF – International Financial Statistics.	5
1.2	Gold price of crude oil 1970–2009 (troy ounces/barrel). <i>Source:</i> IMF – International Financial Statistics.	6
1.3	Crude prices and U.S. trade deficit. <i>Source:</i> IMF, IFS.	11
1.4	Brent oil prices 1860–2008, constant 2007 Dollars. <i>Source:</i> BP Statistical Review Database.	20
1.5	Chinese vs. Middle-East capital and financial outflows, in U.S. Dollars. <i>Source:</i> IMF, BOP.	22
2.1	Real per capita GDP (PPP constant 2005 international Dollars) for Saudi Arabia and the United States. <i>Source:</i> World Bank, World Development Indicators.	35
2.2	OPEC and Saudi Arabian quotas and production, millions of barrels per day. <i>Source:</i> OPEC and EIA.	36
2.3	Real per capita workers' remittance receipts for Egypt (in constant 1992 Dollars). <i>Source:</i> World Bank, World Development Indicators.	37
2.4	Saudi Arabian population and real GDP (constant 2000 Dollars) % growth rates. <i>Source:</i> World Bank, World Development Indicators.	39
2.5	Military expenditure as a percentage of GDP. <i>Source:</i> World Bank, World Development Indicators.	46
2.6	Military personnel as a percentage of total labor force. <i>Source:</i> World Bank, World Development Indicators.	47
2.7	Foreign direct investment, portfolio, and debt flows to developing countries (US\$ hundreds of billions). <i>Source:</i> World Bank, Global Development Finance.	48
2.8	Long-term debt outstanding (in trillions of Dollars). <i>Source:</i> World Bank, Global Development Finance.	49
3.1	OPEC export revenues 1996–2003, in billions of U.S. Dollars. <i>Source:</i> US DOE and Estimates.	55
3.2	Primary energy by source (in quads). <i>Source:</i> IEA.	60

3.3	Kuwait Al-Shall Real Estate Index. <i>Source:</i> S&P/IFC.	71
3.4	Saudi Arabia Stock Market Index. <i>Source:</i> S&P/IFC.	73
4.1	Stock indices of Saudi Arabia, Egypt, and Jordan. <i>Source:</i> S&P/IFC.	81
4.2	Stock market indices: Mexico, Turkey, and Malaysia. <i>Source:</i> S&P/IFC data.	82
4.3	Stock market returns: Mexico, Turkey, and Malaysia. <i>Source:</i> S&P/IFC data.	83
4.4	Growth in world GDP and energy demand. <i>Source:</i> World Bank, WDI.	84
5.1	Total reserves in millions of SDRs. <i>Source:</i> IMF, IFS.	98
5.2	Percentage of allocated official reserves held in Dollars. <i>Source:</i> IMF, COFER.	99
5.3	Total U.S. debt outstanding in Dollars. <i>Source:</i> U.S. Treasury.	100
5.4	World GDP and export growth percentage. <i>Source:</i> World Bank, WDI.	102
5.5	Money market rates. <i>Source:</i> IMF, IFS.	103
5.6	Gross national savings as percentage of Gross National Income. <i>Source:</i> IMF, IFS.	104
5.7	Mainland China Gross National Income and CPI percentage change. <i>Source:</i> IMF, IFS.	106
5.8	Shanghai Composite and Dow Jones Industrial Average. <i>Source:</i> Yahoo Finance.	107
5.9	Commodities indices (overall, energy, and nonfuel). <i>Source:</i> IMF, IFS.	113
5.10	U.S. finished motor gasoline product supplied (thousand barrels per day, 12-month moving average). <i>Source:</i> U.S. Department of Energy, EIA.	115
6.1	U.S. gold reserves in millions of fine troy ounces. <i>Source:</i> IMF, IFS.	118
6.2	Japanese Yen per U.S. Dollar. <i>Source:</i> IMF, IFS.	126
6.3	Japanese nominal GDP growth percentage. <i>Source:</i> IMF, IFS.	127
6.4	Mainland China, PR: Nominal GDP growth (%) and exchange rate (Yuan/\$). <i>Source:</i> IMF, IFS.	128
6.5	U.S. nominal effective exchange rate and percentage of official reserves in U.S. Dollars. <i>Sources:</i> IMF, COFER, and IFS.	133
7.1	Emaar Properties PSJC share price (in AED). <i>Source:</i> www.emaar.com investor relations share price lookup.	144
7.2	Production of the Big 5 Oil Companies (mm b/d, excludes production from Candian tar sands). <i>Source:</i> Baker Institute for Public Policy Energy Program, SEC.	156

# List of Tables

3.1	OPEC Production Capacity and Sales (in mm b/d)	56
3.2	Major Oil and Natural Gas Reserves by Country, 2003 (% shares)	62
7.1	Oil Demand by Region 1996–8 (mm b/d and % change)	151



## *Foreword*

The current economic and financial crisis – by all appearances, the worst since World War II – has already generated a vast amount of commentary. Some have been polemical. Some have been measured. Analysis has ranged from the well-informed to the superficial. But most have, understandably, focused on the immediate causes of the crisis. An unsustainable real estate bubble, shoddy credit standards, disastrous risk management by major banks, counterproductive incentives for managers, the rise of esoteric and unregulated financial instruments, and broad-scale failure by regulatory agencies are just a few of them. All are important. And all will need to be addressed by policy-makers and financial executives as they forge strategies to avoid similar crises in the future.

Yet there are even larger factors at work. A number of observers, for instance, have stressed the role of structural global imbalances in creating an environment conducive to the world-wide financial turmoil witnessed in 2008. Surely, the perverse Sino-American financial relationship – under which, essentially, relatively poor Chinese loan their savings to relatively affluent American consumers – played an important part in fostering the loose credit that helped precipitate the current crisis.

*Oil, Dollars, Debt, and Crises* by Mahmoud A. El-Gamal and Amy M. Jaffe addresses another structural global imbalance. Their subject is the huge transfer of resources from energy-importing to energy-exporting countries. This transfer, prompted by the rise in petroleum and natural gas prices that began in the late 1990s and sharply accelerated in the middle of the present decade, created giant reserves of petrodollars that, in turn, helped to overheat financial markets in the United States and elsewhere.

The book is remarkable on several counts. First is its timing. Begun in 2006, before today's financial turmoil exploded into public consciousness, *Oil, Dollars, Debt, and Crises* is impressively prescient in highlighting the risks associated with major imbalances in the global financial system.

Second, the book moves well beyond economic analysis to assess other factors that shape production decisions by major energy exporters. These factors include institutional weakness, domestic constituencies, internal opposition movements, and, not least, an often harsh geopolitical environment. The last is particularly salient. The world's most important energy producing region – the Middle East – is one long characterized by simmering animosities and outright conflict.

Third, El-Gamal and Jaffe detail the role of international energy markets – largely denominated in dollars – in sustaining the United States' unique role as supplier of the world's reserve currency. Ironically, the current crisis has seen a flight *to* the dollar, as international investors lower their exposure in riskier currencies. But the long-run viability of the dollar as the *de facto* reserve currency of the world (absent a sustained increase in our national savings rate) is for the first time beginning to be an open question.

Above all, the authors continually – and rightly – stress the *global* nature of the challenges confronting us. Even so large an economy as the United States can no longer be analyzed in isolation. Chinese fiscal policy matters. So do European interest rates. And so does military conflict in major energy producing regions such as the Persian Gulf. The integration of the world economy has led to substantial gains from increased trade and investment. But it has also raised the risk of financial contagion. And it has made international coordination all the more important *and* difficult. Such cooperation was hard enough when I was U.S. Secretary of the Treasury from 1985 to 1988. Today, with immensely greater capital flows, critical new players like China, and a plethora of opaque financial instruments, the task is even more daunting. The hard reality – rather than the easy rhetoric – of globalization infuses *Oil, Dollars, Debt, and Crises*.

I know and admire both the authors. Mahmoud is a brilliant scholar with an impressive background that includes work as the International Monetary Fund's desk economist for the West Bank and Gaza. Amy is one of the nation's top energy experts, with decades of experience with oil and gas markets. Together, they give *Oil, Dollars, Debt, and Crises* a richness of analytic texture rare in books of its kind. Both, I am proud to say, are affiliated with the James A. Baker III Institute for Public Policy at Rice University.

We may be certain that economists and historians will be assessing today's crisis for years to come. Indeed, the current turmoil has revealed the extent to which, seventy years after the event, informed observers still differ sharply on the causes of the Great Depression. In short, the debate about today's crisis has just begun. *Oil, Dollars, Debt, and Crises* will surely hold an early and estimable part in it.

James A. Baker, III, Honorary Chair  
Baker Institute for Public Policy, Rice University

## *Preface*

We began to work on this book in late 2006. At the time, we felt that the problem of petrodollars was not receiving sufficient attention, a short presentation by Saleh Nsouli of the International Monetary Fund (IMF) on “petrodollar recycling and global imbalances” in March 2006 notwithstanding. Discussion of global trade and financial imbalances and the sustainability of the Dollar-centered international financial system were still mainly concerned with accumulated reserves in Asia, especially China. As we show in this book, both groups who thought that the system was sustainable for another decade and those who thought that it wasn’t seemed to ignore the role of petrodollars in accelerating systemic instability.

As we started to work on the book project, we discovered a bigger problem yet: the literatures on energy markets, financial markets, and Middle-East geopolitics were highly compartmentalized, with few notable exceptions that are cited in this book. Our focus therefore turned to integrating all three domains of investigation and showing that all three spheres integrate to perpetuate, and potentially to amplify, a cycle that we were witnessing for the second time in our own lifetimes. We were both struck by the remarkable similarities between the events that we were observing in 2006–7 and those that we had earlier witnessed in 1979–80, and reached the conclusion that we are likely to see a steep spike in oil prices followed by a crash and severe global recession.

We knew enough to know that history does not repeat itself exactly. Therefore, we spent considerable effort trying to understand the cycle and its consequences, in part to address skepticism in 2007, including by Cambridge University Press referees, regarding our claims of fragility of the financial system. The book in your hand contains some of the facts and analysis that we accumulated to justify the assertions that we made in our initial book proposal. However, in the interest of brevity, we deemed it best to tone down our lengthy arguments of why “Peak Oil” theories were overstated and we were in fact in the midst of a speculative bubble in oil futures. Fragility of the global financial system hardly requires much

proof at this point in time, and indeed previous authors who have analyzed this fragility, such as Hyman Minsky, have become posthumous best sellers as their views have gained currency anew. We may, of course, have been simply lucky in making those assertions, but we leave it to the reader to decide.

If we are at least partially correct in our analysis, then the cycle is likely to repeat, with most of its characteristics intact, at least one more time. Global economic recovery from the financial meltdown in late 2008 and early 2009 may take a few years, but low interest rates, moderate oil prices, and probable avoidance of 1930s-style breakdown of international trade suggest that the recovery will be vigorous when it arrives. Our analysis, presented in the pages before you, suggests that even the best efforts in migrating to alternative fuels will not be sufficient to wean the world economies from dependence on fossil fuels during this phase of the cycle. The other forces that we discuss in this book, geopolitical and financial, are also likely to remain intact, therefore forcing the world through at least one more upswing and downswing of the cycle – the third such phase of the cycle since the early 1970s.

Many of the ways that the world has changed – especially globalization and proliferation of weapons of mass destruction – make the downswings of the cycle potentially catastrophic, especially in light of the geopolitical interactions with energy and financial markets that we analyze in this book. Consequently, we slowly converted this project to produce a “policy book” focused on those interconnections that have not been systematically analyzed by other authors. Policy books often focus on mechanics of solutions, but we explicitly aimed to show that there are cycles in such policy mechanics, for example in regulating various markets, which are themselves part of the bigger cycle. The book has therefore become what we may consider a meta-policy book, one that focuses on the general framework and urges policy makers and analysts alike to be cognizant of “unanticipated consequences” of their policy advice that may in fact be possible to anticipate.

We would like to thank the James A. Baker III Institute for Public Policy and the Institute for Energy Economics of Japan for their generous support for this research, which grew out of the Baker Institute’s study: “The Global Energy Market: Comprehensive Strategies to Meet Geopolitical and Financial Risks – The G8, Energy Security, and Global Climate Issues.” We would also like to acknowledge the following Baker Institute research staff, research assistants, and interns who assisted us in this project: Basil Awad, Jareer Elass, Ibrahim Ergen, Lauren Smulcer, Adnan Poonawala, Devin Glick, Julie Chao, and Matthew Schumann.

Mahmoud A. El-Gamal and Amy M. Jaffe  
Houston, March 2009



# I

## The Challenges of Resource Curses and Globalization

The coincidence of oil and financial crises can be traced back historically to the time of the industrial revolution. Our story begins, more modestly, with the dramatic increase in crude-oil prices in 1973 – an episode that continues to live as a vivid memory in Western and Middle-Eastern imaginations alike. For the former, this memory serves as a constant reminder of Western economies' vulnerability to market and geopolitical forces, especially in the Middle East. For the latter, it feeds nostalgic yearning for the moment when the Organization of Petroleum Exporting Countries (OPEC) cartel's market and political power reached its zenith.

As the world continues to struggle with the task of containing the economic, financial, and geopolitical ramifications of the financial crisis of 2007–9, it is important to recognize this and the previous 1970s crisis, as well as a number of others, as phases of a larger ongoing cycle. To paraphrase Mark Twain, rumors of the death of the business cycle – as well as the energy-price cycle, the financial boom-and-bust cycle, and the cycle of Middle-East geopolitical turmoil – have all been greatly exaggerated. In this book, we study the interaction of the global business cycle with these closely related energy-price, financial, and geopolitical cycles. We show that this super cycle is endogenous and self-perpetuating.

Like the human ego, this cycle is most dangerous when we assume that we have tamed or killed it.<sup>1</sup> Prolonged periods of stability and prosperity become grounds for hubris, which in turn breeds unrealistic levels of confidence and greed and compels policy makers to relax counter-cyclical regulations and policies. We argue in this book that financial and energy-sector investment cycles, as well as income distribution within and across countries, play pivotal roles in perpetuating the cycle, which can be attenuated only with proper understanding and vigilance.

We write this book to gain a better understanding of the perennial cycle and its driving forces. This is especially important for informing policies today, as globalized financial contagion and the spread of weapons of mass destruction make the cyclical swings increasingly, and potentially catastrophically, more dangerous.

Over the past four decades, the alternating ebb and flow of petrodollars have been key forces influencing financial markets. Petrodollar recycling has amplified as well as perpetuated recurring global financial and currency crises. These crises have, at times, reached severe proportions in “perfect storms” driven by three forces:

- (i) The first force is the Dollar-centered and debt-driven global finance that has emerged since the early 1970s. Thus, our story of petrodollars and financial crises is as much about the U.S. Dollar, and its role in global finance, as it is about gyrating energy prices and Middle-East geopolitics.
- (ii) The second force, to which we have already alluded, is the volatile market for oil and gas, which is governed not only by the real-economic business cycle, but also by investment cycles and financial-market speculation.
- (iii) The third factor is the continuation of Middle-East geopolitical conflicts, which are driven by self-perpetuating arms races funded by petrodollars and serving as one of the main tools for the West to recycle the latter.

*1973–80 vs. 2001–8 – Déjà Vu?*

With perfect hindsight, we may notice many striking similarities between the two crises of 1973 and 2008, which highlight the importance of understanding the cyclical nature of such perfect storms. The oil crisis of 1973 was very much the product of the three factors that we have listed: (i) sustained global economic growth accelerated the growing demand for oil and other commodities, (ii) U.S. deficit spending had just recently forced the United States to abandon the quasi-gold standard of the Bretton Woods Accord in 1971, thus ushering in a new era of inflation, and (iii) the Arab-Israeli war of 1973 served as a catalyst for OPEC to restrict supply, thus forcing oil prices to rise tenfold. Higher oil prices (1973–80), in turn, resulted in a flood of recycled petrodollars that led to an international debt crisis.

Those same forces were again coinciding and reinforcing one another in 2001–8: (i) global economic growth that started in the 1980s and continued through the millennium mark – with the briefest of interruptions by historical standards – had resulted in accelerating demand for oil; (ii) United States indebtedness was growing unchecked, putting pressure on the Dollar and jeopardizing its dominance and anchoring effect in global finance; and (iii) terrorist attacks on the United States and military invasions by the latter of Afghanistan and then Iraq in 2001 and 2003, respectively, served as catalysts to inflate oil prices fivefold. Now, as then, the higher oil prices drove a new wave of Middle-East petrodollar outflows that contributed substantially to an international credit bubble. In turn,

that bubble eventually caused an international financial meltdown the economic ramifications of which are not yet fully understood or recognized.

Left unchecked, U.S. dependence on oil in the coming years will continue to contribute to her precarious level of national debt, especially if oil prices recover their upward path with global economic recovery. In the meantime, the latest round of petrodollar inflows to the Middle East is unlikely to bring lasting economic growth and political stability to the region. Now, as in the 1970s, Middle-East economies exhibit limited absorptive capacities, and petrodollar flows have fueled real estate, stock market, and credit bubbles regionally and globally. The façade of political and social stability in some Middle-East countries, made possible in part by rising government spending on security, masks significant threats throughout the region. The latter include a potential nuclear arms race, conventional armed conflicts, sectarian strife, increasing income inequality, and continued failure to diversify regional economies. The recent rise in global terrorism is but one of the consequences of fermenting forces of regional discontent.

#### *Progressively Increasing Financial Contagion*

The forces that made globalized financial contagion possible in the new millennium will continue to influence international finance for the foreseeable future. In this regard, advances in communication and financial technology have led to financial integration at a scale that dwarfs other forms of globalization. In the 1970s, recycling of Middle-East petrodollars fueled a credit bubble of bank and sovereign loans to developing countries, especially in Latin America. That bubble crashed in the early 1980s following the rise in United States interest rates, with substantial repercussions for global finance and economics. Later crises in Asia, Latin America, and Eastern Europe in the late 1990s illustrated that similar financial shocks today would have significantly greater impact on the international financial system and economic conditions worldwide.

It is against this backdrop of today's precarious geopolitics and global finance that we seek to revisit the history of boom-and-bust petrodollar cycles that have influenced economic and political development in the Middle East, and financial conditions worldwide, since 1973. Until very recently, oil exporters have recycled petrodollar trade surpluses by investing mainly in Dollar-denominated assets. Investment in United States debt instruments has helped simultaneously to keep interest rates low and the Dollar from depreciating precipitously. This has allowed spending in the United States, financed by debt, to serve as an engine for domestic as well as global economic growth. However, continued strength of the U.S. economy and Dollar is predicated on other countries' continued willingness to hold their investments and reserves in Dollars, even in the face of mounting U.S. debts. Most observers agree today that the status quo is not sustainable.<sup>2</sup>

History, of course, does not repeat itself, and the circumstances of today's energy and financial markets are very different from those of the early 1970s. However, there is today, more than ever, a need to anticipate potential future crises and to understand the means to avoid them by managing various risk components. Toward that end, understanding the anatomy of previous crises, especially those of 1973 and 1979, is the most logical starting point. In the process, our story will focus on the three risk components that we have identified, which are likely to interact again to create the next perfect storm: Dollar-centered and debt-driven global finance, volatile energy prices, and Middle-East geopolitics.

### *The Dollar, Gold, and Black Gold*

The story of the 1973 oil crisis began on August 13, 1971 in Camp David, where President Richard Nixon met with his economic advisers, including Secretary of the Treasury John Connally, Federal Reserve Board Chairman Arthur Burns, and Undersecretary of the Treasury Paul Volcker. The Dollar had already come under pressure by market speculators. Under the Bretton Woods monetary system that had prevailed following the end of World War II, countries aimed to keep their exchange rates fixed, with balance-of-payments support and supervision from the International Monetary Fund (IMF). However, the United States, as the world's largest economy, did not have the option of devaluing its currency or getting help from the IMF. As a remnant of the gold standard that had prevailed before World War II and had made the earlier waves of globalization at the turn of the twentieth century and between the two world wars possible, the U.S. maintained convertibility of the Dollar to gold at a fixed price.

Leading up to 1971, the U.S. started to run deficits that raised doubts regarding her ability to maintain the long-standing price of gold at \$35 an ounce, and international financial speculators were already challenging that price (by selling Dollars and buying gold). In August 1971, Britain demanded that all of its Dollar reserves, \$3 billion in total, be paid in gold. Two days later, on August 15, 1971, President Nixon dropped the gold-Dollar link. The Dollar then depreciated multiple times, allowing U.S. exporters to become more competitive once again in international markets. By 1973, the Bretton-Woods monetary system was dead.

If we think of oil priced in gold, which was effectively the case under the gold standard and the Bretton-Woods monetary system, we would have expected Dollar-denominated oil prices to increase steadily after 1971. In fact, however, as the Dollar depreciated and monetary policies allowed inflation in the prices of most commodities, Dollar prices of oil remained remarkably stable, as we can see in Figure 1.1. The resulting decline in oil prices relative to gold between 1971 and 1973 is illustrated more clearly in Figure 1.2. Between 1970 and 1973, the gold price of oil (gold ounces per barrel) had been cut in half. In fall 1973, the dramatic

rise in the Dollar price of oil allowed the gold price to quadruple, overshooting the 1971 level, to which it returned briefly in 1975.

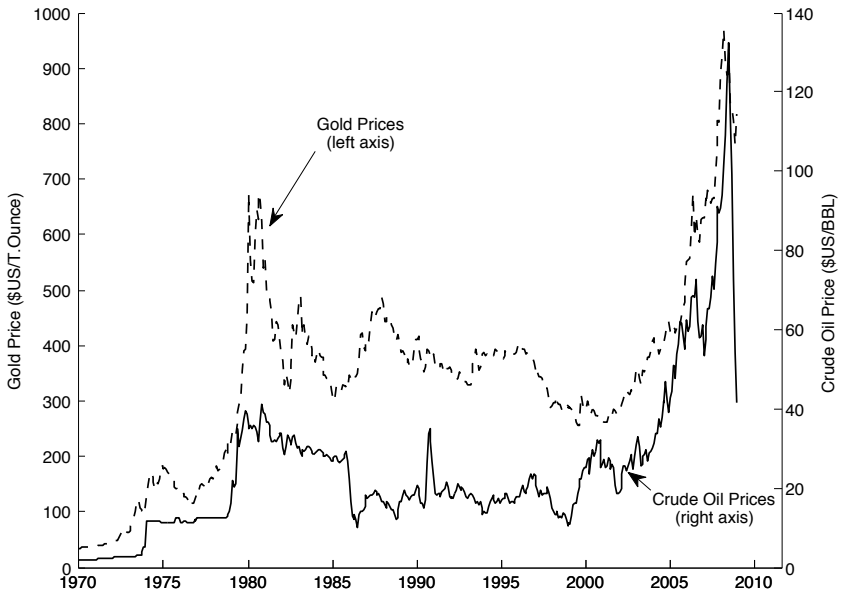


Figure 1.1. Dollar prices of gold and oil 1970–2009. *Source:* IMF – International Financial Statistics.

It is instructive to note that the same pattern was repeated before the oil shock of 1979. Inflation in the mid-1970s allowed gold prices to rise faster than oil prices, again cutting the gold price of oil in half between 1976 and 1979, leading to a major correction in oil prices following the Iranian revolution in 1979. The inflation of the 1970s was finally brought to an end when Paul Volcker, appointed as Chairman of the Federal Reserve Board by President Carter in August 1979, began a series of dramatic increases in United States interest rates, doubling them from 10 percent to 20 percent, and held them at those extremely high levels until 1982. This drove the United States and world economies into recession, which brought down gold from price levels that it did not revisit until the spike in commodity prices post 2003. It is clear from this simple narrative that the dynamics of the Dollar price of oil and the resulting petrodollar flows are governed in large part by United States economic policies that influence the real value of the Dollar.

Using gold prices to measure the real value of the Dollar, we can see in Figure 1.1 that the dramatic increase in Dollar prices of oil since 2003 is overstated

by the declining real value of the Dollar. Indeed, Figure 1.2 clearly illustrates that the gold price of oil has remained below its high in 1979 throughout this latest phase of the cycle. Countries with currencies that appreciated relative to the Dollar, for instance in the Euro zone, were thus insulated to some extent from the higher Dollar prices of oil. The declining real value of the Dollar has prompted Kuwait to dismantle the long-standing peg of the Kuwaiti Dinar to the Dollar. The possibility that other countries may shift their exchange rate pegs, and possibly their foreign reserves, away from the Dollar will be discussed in Chapters 6 and 7.

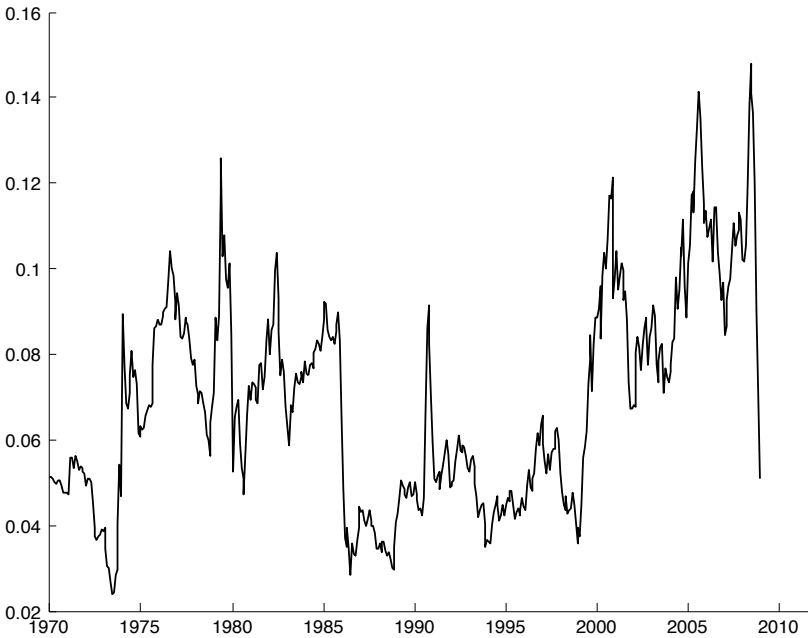


Figure 1.2. Gold price of crude oil 1970–2009 (troy ounces/barrel). *Source:* IMF – International Financial Statistics.

### *Oil Supply and Demand*

The second set of factors that must be considered in our story of Middle-East petrodollars are the forces of energy supply and demand. The seemingly sudden ability of OPEC to exercise power in 1973 cannot be explained on the basis of Arab nationalism alone, nationalistic rhetoric of an “oil weapon” notwithstanding. The forces of global supply and demand for oil were very important contributing factors. In the background, there was the secular increase in demand for energy

as the world economy reintegrated and enjoyed one of its longest periods of economic growth after World War II.

This increase in demand initially prompted the United States' regulators, such as the Texas Railway Commission, to eliminate all restrictions on production. This meant that because Texas was producing the maximum that it possibly could from its fields, no excess capacity remained as backup to be brought to the market in case of supply-shortage emergency. The resulting loss of excess capacity, in turn, eliminated a long-standing stabilizing force in global oil markets.

Another set of stabilizing forces in the global oil market, the oligopoly of large multinational oil companies, known generally as the "seven sisters," were losing market power due to the advent of independent oil companies and a trend toward nationalization of oil resources. As we shall show in Chapter 2, those forces of supply and demand coincided to give OPEC an incredible oligopolistic power to determine crude oil prices directly.

There was, of course, a nationalistic aspect to the Arab OPEC members' strategy to put pressure on the United States and the West more generally by using "the oil weapon." However, it is not clear whether these political considerations could have dominated the oil-exporting countries' economic self-interest. As early as 1974, Secretary of State Henry Kissinger announced after a series of discussions with oil-exporting Arab countries that the use of petroleum as a weapon to influence the outcome of the Arab-Israeli conflict had little merit in reality.<sup>3</sup>

In fact, some supply disruptions unrelated to the conflict appear to have contributed significantly to the oil shock of 1973–4.<sup>4</sup> Meanwhile, Saudi Arabia was secretly selling oil to the U.S. military to help fuel America's operations for the Vietnam War, even as it was publicly announcing its oil-sale boycott of America in solidarity to the Arab cause.<sup>5</sup>

Nonetheless, those other considerations did not undermine the significance of the oil-weapon rhetoric. As we shall discuss in Chapter 3, there is ample evidence that oil prices have been often influenced significantly by fear of supply disruptions, which expectations may be based mainly on political rhetoric. Therefore, our analysis of oil-price fluctuations, petrodollar flows, and the possibility of financial crises must take into account not only physical supply-and-demand considerations, but also market sentiments. The importance of the Middle East in the global supply of oil and gas thus makes its geopolitics an important component of our analysis.

### *Middle-East Sociopolitics*

Every oil-exporting country makes its supply decisions based on multiple economic, political, and social considerations. Different factors dominate at different times, but a baseline economic model may help to predict supply decisions. In this

regard, the seminal work of Hotelling can be used to explain the basic economic dynamics of oil extraction.<sup>6</sup> Hotelling argued that the owner of a nonrenewable mineral such as oil makes a decision whether to extract the resource and sell it based on a simple investment calculus: The owner has to choose between extracting the oil and selling it at the current price, or keeping it in the ground for extraction at a later date. It must therefore compare the expected present value of future prices of oil to the current price that it can fetch on the market. The analysis is thus reduced to comparison of the rate of return that the resource owner can expect to make by investing the potential oil-sale proceeds with the implicit expected rate of return that it would make were it to keep the oil in the ground for future extraction.

Keeping this economic analysis in mind, we can explain the fact that the price of oil depends not only on actual supply disruptions, but also on expectations of potential future disruptions, as discussed in Chapters 3 and 4. Expectations of turmoil, even in the distant future, mean not only higher oil prices in the future, when supplies may be disrupted, but also higher prices immediately, as the opportunity cost of extracting oil increases, other things being constant. Of course, other things are far from constant. When oil prices increase significantly, that gives incentive for energy consumers to seek other sources of energy, thus bringing prices back to sustainable levels. In this manner, the global recession starting in 2008, brought about in part by high energy prices and the associated petrodollar-flow contribution to the credit bubble, brought the latest wave of petrodollar flows to an abrupt end.

Starting with their dramatically increased revenues in 1973, however, OPEC members did not react as predicted by economic models. Instead of planning long-term strategies for optimal investment of their limited mineral wealth, those countries behaved as if their resources were inexhaustible and high prices were going to continue indefinitely. Jahangir Amuzegar, who observed the behavior of OPEC countries firsthand, described how those countries essentially consumed their mineral wealth instead of investing it:

When oil prices were on the rise, the assumption ordinarily was that they would continue uninterrupted. . . .

Unrequited oil receipts tended to introduce a new politics of rising expectations, social welfare largesse and greater state paternalism. Fiscal policy in the form of reduced taxes, increased subsidies, enhanced welfare payments or expanded public employment encouraged profligate consumerism, relaxation of fiscal discipline and living beyond one's means.

...

Exchange-rate policy, as the kingpin of other macro policies, not only influenced the sectoral composition of the domestic development model but (and more importantly) invited and reinforced an insidious rent-seeking behavior. The latter helped create a new class of