Black Gold or the Devil's Excrement?

Fifty years ago, in October 1973, the OPEC nations announced an oil embargo aimed at countries that had supported Israel during the Yom Kippur War. Until that point, cheap energy had fueled nearly three decades of post-World War II U.S. prosperity. That prosperity underwent an immediate and drastic reversal with the oil crisis, bringing a deep recession, high unemployment, and rampant inflation to the U.S. economy.

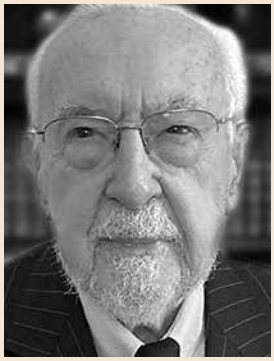
And now fifty years later, another attack on Israel, this time by Hamas, has upended expectations in the global oil market. The effects of this current attack will spool out in possibly unforeseen ways over the coming months.

Juan Pablo Pérez Alfonzo, the prominent Venezuelan politician who along with the Saudis was primarily responsible for the creation of OPEC in 1960, called petroleum "the devil's excrement" that always brings "trouble—waste, corruption, consumption, our public services falling apart. And debt. Debt we shall have for years."

How prescient were the Venezuelan OPEC founder's views? And what have we learned since the 1973 crisis? Or have we learned nothing? How should we evaluate the role of oil in our lives? Fifty years of living with excrement? Or a necessary ingredient for extraordinary prosperity that must now be replaced by renewable alternatives? And how could this most recent Middle East conflict fundamentally alter the interaction among oil, the Middle East, the dollar, and global markets?

Juan Pablo Pérez Alfonzo, *Venezuela's energy minister, returns from Baghdad after the creation of OPEC.*

Two dozen distinguished experts share their wisdom.



We need to calculate the evolution of the real value of black gold in terms of world GDP.

JACQUES DE LAROSIÈRE

Former Managing Director, International Monetary Fund, and Honorary Governor, Banque de France

First, to fully understand the oil market and its long-term trends, we need to consider the real value of this fuel.

To do this, it is not sufficient to deduct consumer price inflation from nominal oil prices. Indeed, as oil buyers become richer, we need to calculate the evolution of the real value of black gold in terms of world GDP in order to get a better idea of the purchasing power and "asset acquisition" generated by sales of this raw material. This method of calculation gives a more accurate idea of reality.

When asked at the pump, motorists inevitably reply that "petrol has never been so expensive," but this is clearly not the case.

Calculations show that from 1985 to 2005, the annual oil bill as a percentage of GDP remained below 1 percent. This means that, over this twenty-year period, the cost of oil has remained much lower than in the 1970s and 1980s, when the oil bill hovered around 4–5 percent of GDP. Today, the percentage is just over 3 percent of GDP, which is still significantly less than during the crisis and post-crisis years. It's hardly surprising that producers raise their prices from time to time to offset the effect of monetary inflation and to try to catch up with the growth of global wealth.

Added to this is the fact that energy efficiency has continued to improve, resulting in lower fuel consumption per kilometer driven.

The fact that we are advocating a carbon tax to counteract the incentive to buy fuels shows that current oil prices continue to be low and provide too strong an incentive for fossil fuel consumption.

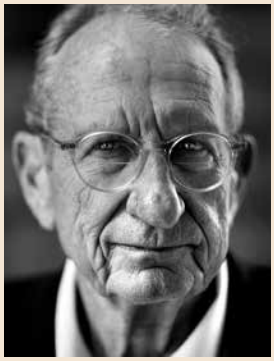
The second point to emphasize relates to the evolution of demand. In this respect, world demographics are a decisive factor.

From four billion inhabitants in 1974, the population has risen to eight billion by 2020. This doubling in less than fifty years goes a long way toward explaining the rise in demand for oil.

But we are told that the population will reach ten billion by 2050. Even if this forecast is open to question, we will inevitably see a sharp rise in global energy consumption.

How can we satisfy it? By using a resource that is available and reasonably priced, that is, in all likelihood, oil, in the absence of decarbonized alternatives that are expensive and whose availability will depend on considerable investment, the financing of which is uncertain in our world of inflation, low real interest rates, liquid placements, and a decline in productive investment.

A bright oil future is therefore likely.



It is fantasy to believe the Israeli-Hamas conflict will lead to major disruption of world oil markets.

JOHN M. DEUTCH

Emeritus Institute Professor, Massachusetts Institute of Technology, and former Director, Central Intelligence Agency, former Deputy Secretary of Defense, and former Undersecretary of the U.S. Department of Energy

It is fantasy to believe the Israeli-Hamas conflict will lead to major disruption of world oil markets such as occurred in the 1973 OPEC oil crisis. Indeed, through November 2023, there has been a modest decline in world oil prices. The legitimate concern is that the conflict sparked by the unexpected military capability demonstrated by Hamas will spread beyond Gaza. Bloody conflict between Israeli armed settlers and Hamas-supported West Bank Palestine Arabs may well increase. Hezbollah incursions into northern Israel, encouraged by Iran, will continue. But these armed encounters are unlikely to lead to direct military action by major Islamic countries, either producers such as Saudi Arabia, the Emirates, Kuwait, and Iraq, or consumers such as Turkey and Indonesia. These countries are enjoying economic growth and seeking a larger role in international affairs. They will be reluctant to risk these benefits for an expensive military confrontation with Israel or a major disruption of world oil markets. The normalization trend, stimulated by the Abraham accords, is likely to slow but will not vanish.

The more significant implication of the Israeli-Hamas war involves the future of the state of Israel. Israel's reluctance to pause their military actions to destroy Hamas in order to alleviate massive human suffering in Gaza is diminishing international support from the United States and other countries. The loss of domestic confidence in Israel's governance that was widespread before the Hamas invasion has broadened to public doubts about the previously vaunted Israeli intelligence capability, and the adequacy of the country's military posture to defend against determined Hamas-led Palestinian Arab attacks.

Undoubtedly this Israel-Hamas war has reduced near-term prospects for a two-state solution. Israeli support for a two-state solution has long been split. Some observers believe that Israeli demographic trends indicate conservative Israelis will increasingly control future elections, strengthening opposition to Palestinian integration. But the fundamental implication of the barbaric Hamas invasion of Israel and Israeli's bloody military response is that Israel must dramatically change its policy toward coexistence with Palestinian Arabs or risk becoming a failed state.

Juan Pablo Pérez Alphonzo was more right than wrong about petroleum's being "the devil's excrement."

EDWIN M. TRUMAN

Research Fellow, Mossavar-Rahmani Center for Business and Government, Harvard Kennedy School, former Assistant Secretary for International Affairs, U.S. Treasury, and former Director, International Finance, Federal Reserve Board

Fifty years after the Yom Kippur War, violence in the Middle East once again threatens to upend the global economy and financial system. As of my writing this comment, the consequences hang like the sword of Damocles over our fitful recovery from covid and the conflict in Ukraine. How many strands might that sword sever in the weeks, months, and years ahead requires a clearer crystal ball than I possess. We can be more confident about the lessons from the past.

First lesson: Juan Pablo Pérez Alphonzo was more right than wrong about petroleum's being "the devil's excrement." On balance, the eighteen OPEC-plus countries have had growth performances inferior to those of other countries. From 2002 to 2022, eight (44 percent) of these countries had negative real (purchasing parity-based) per capita growth compared with seventeen (10 percent) of all other countries included in the IMF World Economic Outlook database. The figures for the past ten years are similar, 50 percent of the OPEC-plus group and only 21 percent of the other countries. Black gold is somewhere between a mixed blessing and a curse. The reason, in brief, is that the bias in the political natural-resource based economies is toward dividing the rents rather than converting wealth from underground to productive investments above ground.

Second lesson: Monetary authorities have learned something, though maybe not as much as they should have, about responding to surges in petroleum prices. Those surges raise the price level and depress economic growth. What is the best way to steer an economy between these two rocks? Take some of the hit on growth and some on prices. In other words, target nominal GDP.

Third lesson: Some countries will be sideswiped by surges in energy prices through no fault of their own other than weak fundamental policies and underlying resilience. These countries are likely to need our help down the road, and without our help we, as well as they, will be worse off.

I do not know how the ongoing tragedy in the Middle East will unfold. The outcome will depend more on high politics than on standard economics. We can only hope that the politics don't overly impinge on economic cooperation.

Black gold may have been ecologically problematic, but it has been a strong driver of economic and social progress.

EWALD NOWOTNY

Former Governor, Oesterreichische Nationalbank, former Member of the Governing Council, European Central Bank, and Professor, Vienna University of Economics

Since 1914, when First Lord of Admiralty Winston Churchill decided to use oil instead of coal to power the British Navy, petroleum has been a central

element of political and military power. In economic terms, oil has been of fundamental importance since the last decades of the nineteenth century. While the oil crisis of 1973 had a strong short-term negative effect on economic growth and price stability, it did not curtail the economic and political role of oil in the long run.

Today, however, this role has shifted fundamentally. Oil markets have changed substantially, with the United States now a net exporter and thus much less dependent on outside supplies. As a result of modern technology and green policies, the economy has definitely become less oil-intensive. And last but not least, in the aftermath of the 2008 financial crisis, the banking sector is in a much stronger financial position today than it was in the 1970s.

At present, however, these positive structural developments are faced with two deep and dangerous military crises: the Russian aggression against Ukraine and the developments following the attacks against Israel. The Russian war has already had dramatic effects on the prices of oil and gas. The ongoing conflict in the Middle East may lead to new price hikes—also supported by discreet but effective cooperation between Russia and Saudi Arabia in the context of OPEC+. A World Bank report warned that in a worst-case scenario, oil prices could rise to US$150 a barrel. This would reduce economic activity and boost inflation.

In such a global scenario, the oil price would have very different effects across countries. Europe, which will remain a net importer of energy for the foreseeable future, would be hit hardest. This outlook has already induced a tendency among European industry leaders to steer new investments toward the United States—a tendency that is especially relevant for energy-intensive or adjacent industries such as the automotive and chemical industries, which are both key industries in Europe and especially Germany.

Germany will be particularly hard hit by energy supply issues, both with regard to quantity and pricing, which may have negative effects on its fiscal position. The country is also facing massive challenges with regard to environmental and military expenditures. As a result, Germany may not be able to uphold its traditional role as paymaster of the European Union, at least not to the same extent as in the past.

Black gold may have been ecologically problematic, but it has been a strong driver of economic and social progress—at least in advanced economies and above all Europe. Future energy perspectives are to a large extent policy-dependent, but may indicate a stronger economic—and also political—position for the United States, a weakening of Europe, and also challenging times for emerging economies, notably China and India.

The productive capacity of the fossil fuel industry has become increasingly inadequate. This will inevitably lead to an energy crunch.

CHEN ZHAO
Founding Partner and Chief Global Strategist, Alpine Macro

Many people believe that wars aways drive up commodity prices, and any conflict in the Middle East always conjures up the fear of an oil crisis and skyrocketing crude prices. In reality, this has not been the case since the 1990s. Both the First and Second Gulf Wars only caused very brief spikes in crude prices, and so has the Hamas-Israel war. Why so?

In my view, this has much to do with the shift in geopolitical backdrop. Unlike the 1970s when the Middle East conflicts often became proxy warfare between the United States and the former Soviet Union, the United States has been the sole superpower since the 1990s. A stable oil market serves America's national interest, and the United States has the financial, economic, and military power to limit the scale and intensity of any major conflict in the Gulf region. Although China is a growing economic power and an adversary to the United States, Beijing is dependent on steady oil supply from the Middle East and does not want to see any major disruption in crude supply. In other words, Beijing's interest is to see a stable Gulf region, and this is largely in line with America's interest.

Second, the impact of oil on the world economy has diminished dramatically since the 1970s. The oil dependency ratio, measured as oil consumption as a share of GDP, has dropped 67 percent for the United States and 71 percent for the OECD countries, respectively, since 1980. The same ratio for China has crashed by 82 percent for the same period. The large and sustained drop in the oil dependency ratio highlights the shift to the post-industrial economic structure in the developed world. It also underscores an aggressive move toward renewable energy around the world as well as the widespread adoption of energy-saving technologies. Simply put, oil is a much less important factor for the world economy than it was half a century ago.

Finally, while wars and conflicts in the Middle East may not cause high and rising oil prices, the excessive "greening" may. The ESG movement, ambiguous green

targets set by the major economies, and heavy-handed government interventions have suffocated meaningful new investment in the fossil fuel industry, reducing its output. However, the world economy is not yet ready to be powered by the renewable energy.

For example, global oil demand has continued to grow since the end of the pandemic crisis and is expected to keep growing in this decade, but the productive capacity of the fossil fuel industry has become increasingly inadequate to meet the growing demand. This will inevitably lead to an energy crunch, driving prices higher.

As for oil producers, knowing that the terminal value of their assets will eventually dwindle to zero, the only incentive for them is to maximize near-term profits via keeping prices as high as possible. This is a far bigger threat for sharp spikes in oil prices than wars and conflicts in the Middle East.

A global shift away from oil could help spread democracy.

JEFFREY A. FRANKEL
Harpel Professor of Capital Formation and Growth, Harvard University's Kennedy School

Although few see it this way, we are in fact fortunate at this point in history that two of the most important international goals happen to coincide. On environmental grounds, we should all decrease our dependence on oil. On geopolitical grounds, as well, western countries should decrease their dependence on the production of oil in Russia, Saudi Arabia, and other petrostates.

How? The first policy steps are to end subsidies to the use of fossil fuels, to continue the shift into renewable energy, and to reverse the phase-out of nuclear power in some countries. Ideally, nations would go beyond ending carbon emission subsidies and put a high price on emissions (and make good use of the public revenues thereby generated). This includes the imposition by participating countries of carbon border adjustment mechanisms on imports of the most carbon-intensive products from non-participating countries. Given the evidence regarding a natural resource curse, a global shift away from oil could even help a third goal: spreading democracy and shared prosperity to more countries worldwide.

If energy producers want to use their muscle, they need to do it now, in order to change the long-term political situation to their benefit.

HAROLD JAMES
Professor of History and International Affairs, Princeton, and author,* Seven Crashes: The Economic Crises That Shaped Globalization *(Yale University Press, 2023)

Carbon energy has been the basis of the amazing revolution through which over the past two centuries humans reduced the need for human or animal power, and consequently produced a surge of growth and in the end more generalized prosperity and well-being. In the nineteenth century the basis was coal, in the twentieth oil.

Because of its strategic importance, petroleum resources have been at the center of conflicts: Romania and the Caucasus were critical in the two great European wars; the oil embargo on Japan in 1941 contributed to the Japanese decision to attack Pearl Harbor; Russia believed it could gain influence through its control of energy supply chains; and in the 1970s and again today the Middle East is the focus of geopolitical tension and polarization. The 1970s and today also have in common the belief that the oil "problem" is temporary or short-lived. In the 1970s, there was a widespread belief that conventional oil resources would soon be exhausted: they weren't, as new supplies were discovered underneath the sea and new methods of extraction (fracking) pioneered. Today, the advantage of the oil producers is also believed to be a diminishing asset, as global warming will mean the need to transition to new forms of energy. So if energy producers want to use their muscle, they need to do it now, in order to change the long-term political situation to their benefit.

As at previous moments when supply shocks generated productive responses, the new pressures will accelerate the pace of innovation: in delivering cheaper green fuels, through solar panels, wind generators, but also new forms of nuclear energy, including fusion (which is looking closer to becoming a commercial reality). As prices fall here, the oil products will be relatively more expensive, and the

market will drive the green revolution. Oil can have an important use as a source of complex polymers: it is too valuable to burn.

Does that mean that oil is diabolical? We tend to think of many things we need as dangerous, or even the invention of the devil. That is also how Europeans portrayed their first experiments in paper money in early eighteenth-century France, when John Law's scheme was caricatured as the devil shitting money. And the technologies of a green revolution will also look like a mysterious or magical alchemy, and countries will fight over them. But as in many mythological constructions, such as the Faust story, in the end the devil's machinations are productive: Goethe's Mephistopheles states that he is a "Part of that force that always wills the evil and always produces the good."

The spoils of oil have empowered rotten elites to tighten their stranglehold over their citizens.

HOLGER SCHMIEDING
Chief Economist, Berenberg

Oil can be a blessing, oil can be a curse. The "black gold" powered growth in the twentieth century but is exacerbating climate change today. It has transformed countries, the oil producers even more than the oil-consuming countries. In many cases, the citizens of oil-rich countries have benefited tremendously, for instance in the Arab emirates and Norway. But in some cases, the spoils of oil have empowered rotten elites to tighten their stranglehold over their citizens, for example in Venezuela, Nigeria, and in Iran.

In political terms, the difference between good and bad outcomes is governance. In economic terms, it is prudence. Countries that have stashed away a major part of their oil revenues into sovereign wealth funds to prepare for a non-oil future and are using another part of the oil income to promote public health, top-notch education, and non-oil businesses are mostly doing well. Less prudent countries are faring worse. Some of them have fallen victim to what was once called the Dutch disease, with a temporary commodity bonanza pricing other domestic lines of production out of business only to end up in deep trouble after the end of the lopsided boom.

The Hamas terror attack on Israel and Israel's response have evoked memories of the oil crises of 1973 and 1979, which pushed the world economy into major recessions. This time, a similar spike in oil prices looks unlikely. And even if the tail risk of a reduced flow of oil to global markets were to materialize, the damage would now be much smaller.

Economies react to price signals. Even the United States, still the top oil guzzler of the world, now uses only one-third the amount of oil for each unit of its GDP that it did in 1973. With major domestic reserves, a spike in oil prices would be a temporary headache for the inflation fighters at the U.S. Federal Reserve, but only a modest setback for growth and jobs.

Per unit of its GDP, Europe is half as dependent on oil as the United States. Of course, high oil prices would hurt. But the damage would be much smaller than in the 1970s and early 1980s. Even in the unlikely risk scenario of a major surge in oil prices, it probably would not last very long. Economies can adjust, as Europe has shown when it braved the Putin spike in gas prices last winter with much less damage than feared. The process of moving away from dirty fossil fuels is well underway. A major surge in oil prices to above $100 per barrel would accelerate that process, leading to lower demand and lower prices after a while, as it did in the 1980s.

Unfortunately, geopolitical risks abound. But whereas a temporary surge in oil prices seems unlikely but not fully impossible, this particular risk seems much less scary now than it was fifty years ago.

Countries endowed with natural resources are naturally blessed. Yet poor governance can turn that blessing into a resource curse.

WILLIAM R. WHITE
Former Economic Adviser, Bank for International Settlements

Countries endowed with natural resources, including oil, are naturally blessed. Yet poor governance of the associated riches can turn that blessing into a resource curse. Contrast the experience of low-corruption Norway

with that of high-corruption Venezuela. Moreover, some endowed countries assume the resource blessing will last forever, and consume the benefits, while others invest the proceeds and consume only the return on the portfolio. Again, contrast the experience of Norway with many other endowed countries. Good governance implies acting in the interests of all the people, and not just those living but unborn citizens as well.

For many decades, the ready availability of oil and other natural resources has been a blessing, to producers but also to consumers. Moreover, the growth rate of global potential was supported by globalization and also by favorable demographics. Market-friendly reforms and a new focus on efficiency and profit maximization were further positive supply shocks. Unfortunately, most governments and central banks did not see these biblical "fat years" as temporary, requiring enhanced investment for the "lean years" ahead. Instead, most followed policies that encouraged consumption and a buildup of global debt.

Today, all the positive supply shocks experienced earlier are going into reverse. Most importantly, fossil fuels must now be phased out to mitigate global warming while higher temperatures will increasingly constrain food and other production. To counter these forces, much higher levels of investment will be required. For example, the demand for metals will rise to multiples of current supply capacity. With negative aggregate supply shocks and positive investment shocks expected, future inflationary pressures are likely to be stronger and more persistent than in the recent past. Moreover, given these conditions, lower consumption will have to play a central role in resisting these pressures.

This creates a quandary for public policy since, while the stocks of greenhouse gases and both private and public debt have been rising, the stock of public trust in democratic institutions has been falling. This reflects the fact that most of the gains during the "fat years" accrued to the already rich, rather than being more widely shared.

Given record-high private debt levels, higher rates could threaten financial instability and perhaps a deep recession. Given record-high public sector debt ratios, higher interest rates and debt service charges might trigger fears of "fiscal dominance" and higher rather than lower inflation. Either outcome would be profoundly unwelcome in itself. And even more unwelcome, either outcome could lead to political instability and a diminished capacity of the state to deal with environmental and other existential problems.

To help preempt such difficulties, steps must be taken urgently to get debt levels under better control. Measures to encourage private sector deleveraging are required, as are measures to make public sector balance sheets more sustainable. Fiscal restraint would also help resist inflation, without the dangerous side effects of still-tighter monetary policy, although restraint might itself sow political discontent. Above all, ordinary citizens must somehow be convinced that unpalatable policies are still better than disastrous ones.

How will the Israel-Hamas war affect oil markets? Probably not much.

DANIEL PIPES
President, Middle East Forum

Is petroleum a horror? Not necessarily: if handled properly—Norway comes to mind as the *beau idéal*—the income from petroleum can be a boon, making a people richer and a country more influential. Trouble is, getting it right requires great dollops of discipline, honesty, and far-sightedness, traits not found in most leaderships. It is fascinating to watch these days how Guyana, the latest beneficiary of an extraordinary petroleum bounty, navigates these treacherous waters.

What have we learned over the past fifty years? That the "oil weapon" is blunt to the point of inutility; note the Russian failure to freeze Europe. That natural gas should not be flared off but is enormously valuable; just ask the Qataris. That peak oil is (so far) a myth because a mix of conservation and new technologies keeps expanding reserves. That Moses, in fact, did not make a wrong turn (as the joke had it), for Israel has considerable hydrocarbon reserves. That the system can handle seemingly any combination of bad management (Venezuela), domestic turmoil (Libya, Iraq), and sanctions (Russia).

How will the Israel-Hamas war affect oil markets? Probably not much. As of this writing (November 8, 2023), Hezbollah has declined to participate beyond taking token steps, the Houthis cannot do much, the Syrian state has higher priorities, and Tehran does not wish to enter into a conventional conflict with Israel, much less the United States.

What is the proper role of oil? It and water are the foundational commodities of modern life, so plans to do without the one is about as unrealistic as doing without the other, at least for many years to come. Petroleum should

be appreciated as a blessing to humanity, despite the undeniable damage it does when there is too much of it relative to the population, leading to untempered arrogance (think of the shah). So yes, it rates as Black Gold.

"Dutch disease" leads to widespread corruption in the business and political sectors.

THOMAS MAYER

Founding Director, Flossbach von Storch Research Institute, and former Chief Economist, Deutsche Bank Group

Oil is both black gold and the "devil's excrement." It is black gold to countries with little prospect for the development of an industrial sector. Where would the oil-rich countries in the Middle East stand today had they not been able to extract and export oil against the goods, services, and assets of industrial countries? In 1950, before Middle Eastern countries began to export oil on a large scale, real GDP per capita in oil-rich Saudi Arabia was 34 percent higher than in neighboring oil-poor Jordan, according to the Maddison historical database. By the beginning of this decade, the difference had grown to 337 percent. Similarly, before discovering oil and gas within its borders in 1940, little Qatar was one of the poorest countries in the world. Its population's livelihood depended primarily on pearling, fishing, and trade. Today, its real GDP per capita is nearly twice that of the United States.

But oil can also be the "devil's excrement" when it impedes the development of the industrial sector—dubbed "Dutch disease"—or leads to widespread corruption in the business and political sectors. Dutch disease was first diagnosed in the mid-1970s when the discovery and exploitation of large gas fields in the Netherlands led to a reallocation of resources to the gas sector at the expense of the industrial sector. A more recent example is Russia, which the late Senator John McCain famously called "a gas station masquerading as a country. It's kleptocracy. It's corruption." Another example of Dutch disease and corruption is Venezuela. In 1950, its real GDP per capita was 44 percent below that of the United States but 138 percent higher than in Saudi Arabia. At the beginning of this decade, it was 81 percent below that of the United States and 79 percent below Saudi Arabia.

Today our need for oil persists, both as an energy source and as a raw material for the chemical industry. The demand for the former will decrease over time due to climate policy, albeit more slowly than some would prefer. The latter's use is likely to continue indefinitely. But the power of OPEC, the cartel of oil-exporting countries, will continue to erode, both as a result of declining global demand and of the emergence of the United States as the largest oil-producing country in the world. As a result, oil will no longer be the "weapon" it was in the 1970s. And leading OPEC members, such as Saudi Arabia and its direct neighbors, will become more integrated in western financial markets. Meanwhile, other oil-producing nations such as Russia and Iran pursue more bloody strategies in their fight against the West.

There is too much uncertainty—about geopolitics, new discoveries, and government green policies—to forecast the future of oil prices or of oil consumption.

ANNE O. KRUEGER

Senior Fellow, Johns Hopkins School of Advanced International Studies, and former First Deputy Managing Director, International Monetary Fund

There are two possible reasons why petroleum riches could lead to disaster: countries having or finding oil deposits spend their wealth recklessly in unsustainable ways, or abrupt shocks in demand or supply can destabilize the economy.

Turn first to reckless spending. Spain was the richest country in the world in the sixteenth century but its downfall resulted from gold because of large government expenditures, fiscal deficits, and inflation which it enabled. Jeffrey Sachs and Andrew Warner in 1995 showed that natural resource abundance was associated with lower rates of economic growth. The "Dutch disease," when high natural resource prices are associated with poor economic growth, had become part of economists' vocabulary by that time.

There need not be Dutch disease associated with primary commodity price increases or new discoveries.

Sovereign wealth funds have been started by many primary commodity exporters, perhaps most successfully to date by Norway, and investment of unusually high export proceeds (or of proceeds from sales of a diminishing supply of the natural resource) in sovereign wealth funds can prevent inflation or excessively large fiscal deficits.

The second route to disaster takes place when there are large fluctuations in prices of major natural resources. The value of oil exports exceeds that of any other natural resource, and starting in 1973, there have been large fluctuations in its price. Price increases have been followed by large increases in government expenditures and inflation in oil-exporting countries which must then be retrenched when the oil price falls, and conversely for oil-importing countries.

Until 1973, because petroleum prices had been relatively low and stable, concerns about their fluctuation were not large, and because they were relatively low, there was little incentive to explore for further deposits, find techniques to extract additional oil from existing wells, or enable consumers and producers to economize in consumption of oil products.

The oil price quadrupled in 1973. Oil consumption then constituted around 8 percent of GDP in advanced countries. The shock was large and unanticipated because of prior stability. Worldwide recession followed (and again in 1979 after the second oil price increase).

A great advantage of a market economy over government control is flexibility in responding to changes. Entrepreneurs can invest in mitigating strategies without needing the majority of the ruling party's or bureaucrats' endorsement. When they anticipate correctly, they profit and when they are wrong, they, not the taxpayers, take the loss.

In 1973, dire projections were that economic growth would be drastically constrained because of the high price and oil shortage. But the price increase induced substitution by both consumers and producers. The energy intensity of GDP in 1973 fell by more than two-thirds by 2005, and was projected by the U.S. Energy Information Administration to fall another 27 percent per household and l7 percent per business by 2040.

Petroleum producers increased their flexibility (including shutting down shale oil extraction in times of low prices) and producers of energy-using consumer goods have shifted to solar, hydro, and other non-oil sources as well as finding ways to reduce energy consumption per unit of output.

There is too much uncertainty—about geopolitics, new discoveries, and government green policies—to forecast the future of oil prices or of oil consumption. What does seem certain, however, is that adaptation since 1973 has made economies are far less rigid and able to respond more rapidly and less painfully to future changes than in earlier times.

We must expect increasing insecurity and uncertainty and prepare ourselves to become more resilient to crises.

MICHAEL HÜTHER
Director, German Economic Institute

Petroleum is a fateful treasure. In the second half of the last century, petroleum not only replaced coal as the most important fossil fuel, but also changed the processing and consumer markets with its byproducts such as chemicals and plastics.

But not everywhere where new petroleum deposits were found has a country been able to benefit from the black gold rush. Examples such as Nigeria and Venezuela show that countries can even fall into ruin if government institutions are weak, which encourages corruption and mismanagement, commonly known as the resource curse. And then there is the extreme damage to the environment and the global climate.

In the Arabian Peninsula, however, massive oil production in the 1970s transformed a fishing and pastoral region into the world's oil deposit, enabling these countries to rise to prosperity and geopolitical power.

In the 1973 crisis, the West had to learn that the dependence of the world economy on oil gave disproportionate power to autocratically governed countries. Now again, the Middle East threatens to trigger a new energy crisis, even if embargoes like those in the 1970s are unlikely. Nevertheless, a regional escalation of the war between Israel and Hamas could have devastating effects on world oil markets. China, for example, receives most of its petroleum imports from Iran.

The global commodity markets are no less fragile today in terms of geopolitical conflicts than they were in the 1970, neither for oil nor for other natural resources. Critical natural resources are often located in politically unstable regions, and monopoly markets give these countries disproportionally much geopolitical power.

Decentralized energy production with expanding renewable energy systems will change this in the case of oil in the next decades, but dependencies on other critical resources will remain. The rush for black gold in the twentieth century might turn into a rush for white or blue gold (lithium, cobalt, and so forth) in the twenty-first century.

The only solution, especially for the industrialized western states, may be to pursue a strategy of maximum diversification and increased domestic exploration of natural resources. The escalating conflict in the Middle East is the latest symptom of an ever-more-multipolar world with conflicting interests that are being fought out violently and belligerently in the absence of a hegemonic power. The Middle East will not be a peaceful region in the coming decades. The dependencies on petroleum and many other natural resources will remain. We must expect increasing insecurity and uncertainty and prepare ourselves to become more resilient to crises.

In contrast to the situation in 1973, there is no rigid West-East conflict, but a very dynamic competition between the great powers. Further developments are difficult to predict. This uncertainty requires a new quality of alliances and regional cooperation if economic resilience is to be strengthened. The world will always be less able to be shaped by a hegemon; the United States is no longer able to do this and for domestic political reasons it no longer wants to do so. At the same time, structural problems in China are increasing (demographic aging and misallocation of capital). In the medium term, this creates space for new alliances between medium-sized powers. Here lies the opportunity for influence and thus also for greater economic resilience. The economic can no longer be thought of without the (geo-)political.

A "mixed blessing" rather than the "devil's excrement."

DESMOND LACHMAN
Senior Fellow, American Enterprise Institute

In looking at oil's world economic history over the past one hundred years, a "mixed blessing" rather than the "devil's excrement" would be a more apt way to characterize its role in our economy. To be sure, Pérez Alfonzo's dire prediction about the corrosive and corrupting effect of being an oil producer has proved to be all too true. However, oil has facilitated the unprecedented post-war economic prosperity surge that has allowed hundreds of millions of people to escape poverty.

Anyone doubting that oil has been a curse to the major oil producers need only look at today's sorry political economic state of the major oil producers such as Nigeria, Russia, Saudi Arabia, and Venezuela. With the notable exception of Norway, oil has distorted these countries' economies and paved the way for corrupt authoritarian governments. Over the next decade, worse is probably yet to come when these oil-dependent countries will have to cope with oil's eclipse as the world shifts to green energy and electric vehicles.

Against its considerable damage to the oil-producing countries' political economies, one has to credit oil with its major support to the postwar period of sustained world economic growth. It is doubtful that this growth would have occurred without a cheap and abundant supply of fossil fuel. It is also doubtful that we would have had a Chinese economic miracle that lifted some four hundred million people out of poverty.

Although Pérez Alfonzo did not have climate change in mind, that is likely the real reason that oil deserves the appellation of the devil's excrement. Our fossil-driven economic growth over the past century has contributed to an existential challenge to our planet. There cannot be a moment too soon for us to wean ourselves completely off our oil dependency by making a rapid shift to green energy.

Oil wealth has been corrosive to democracy.

CULLEN S. HENDRIX
Senior Fellow, Peterson Institute for International Economics

Oil has shaped the foreign policies of major military powers and importers to a large degree for the last century, especially since the oil shocks of the 1970s. But it is becoming just as obvious oil wealth has shaped the politics and foreign policies of major oil exporters—and not for the better.

With few exceptions, oil wealth has been corrosive to democracy and the civil liberties—like freedom of association, freedom of speech, and respect for human rights—associated therewith. Oil endows regimes with plentiful

resources to invest in staving off popular uprisings and having to allow their citizens a say in the affairs of state. Politics in oil-producing countries have been less "no taxation without representation" and more "no taxation, no representation."

Prior to the 1980s, oil-rich countries didn't seem any less democratic than their peers. Oil's anti-democratic effects became apparent in the 1980s and 1990s for two reasons. First, successive energy spikes in the 1970s made higher prices the new normal: even during the famed glut of the 1980s, oil prices were still on average twice as high (inflation-adjusted) as they had been before the 1973 embargo. Higher prices meant higher revenues and more resources for oil-rich autocrats to invest in both guns (repression) and butter (social spending). Second, the end of the Cold War meant an end to both the United States' and the Soviet Union's Cold War-era programs of support for comparatively resource-poor authoritarian rulers in places like Central America and Eastern Europe. When the Cold War tide receded, most resource-poor regimes democratized. Their oil-rich counterparts did not.

Oil-exporting countries tend also to have more bellicose foreign policies. The resource rents that stave off democratic pressures also give oil-rich rulers a comparatively free hand to behave more aggressively. Oil producers may also be more conflict-prone because they expect to face fewer consequences for saber-rattling behavior. Oil producers' close relations with major importing countries and military powers (the U.S.-Saudi relationship, China's support for Iran) provide an implicit form of battlefield insurance—and come with significant moral hazard, allowing oil exporters to behave more recklessly, especially when oil prices are high.

Nowhere are these two effects—domestic authoritarianism and foreign aggression—more evident than in Russia. Glasnost, the Soviet collapse, and Russia's democratization (1985–1999) coincided with low oil prices and revenues, while Putin's consolidation of power has come during the twenty-first-century resource boom. And Russia's biggest foreign gambits—Afghanistan (1979), Georgia (2008), Crimea (2014), and the invasion of Ukraine (2022)—have coincided with high oil prices.

Given these dynamics, what can we expect as the world begins decarbonizing in earnest? A future of lower oil demand, prices, and revenues will have enormous effects on exporting countries and ultimately augur well for democracy and peace as dictators find themselves strapped for resources and with fewer foreign patrons. But the transition won't be smooth: many oil exporters have large cohorts of unemployed, restive youth. As government spending dries up and if jobs don't materialize, protests will.

There is little evidence that the OPEC group ever really affected prices as a strong cartel.

JIM O'NEILL
Former Commercial Secretary to the Treasury, United Kingdom, and former Chairman, Asset Management, Goldman Sachs International

Given the human consequences unfolding from the Middle Eastern chaos, it seems slightly churlish to talk about any financial markets, including the crude oil markets, but of course, for billions of people all over the world, their need to obtain affordable energy will remain.

I studied OPEC, its surpluses, and their disposal during the second oil price crisis in the late 1970s for my Ph.D. thesis, and in addition to making me believe that embarking on a Ph.D. in a social science is quite a challenge for any person, my biggest takeaway was that it is extremely hard to forecast oil prices. I still have today some of the research of the time, both academic and popular, much of it predicting with confidence that oil prices would rise persistently for many years—indeed, a generation—to come. In fact, what soon unfolded was a persistent era of declining and weak oil prices.

I am still unsure to this day as to why, but two reasons often crop up in my mind, both of which relate to economic theory, in particular the so-called long-term elasticity of supply and demand.

First, as Japan was perhaps the best example at the time, there was a strong improvement in the efficiency of energy consumption which reduced the previous standard assumption of a predictable amount of energy for a known amount of GDP growth. Second, as is the nature of economic forces and business, the lure of higher prices often attracts fresh marginal investment among actual and potential producers. These forces probably combined and meant the duration of the impact of the two 1970s oil price crises didn't pan out as expected.

It is also the case that there is little evidence that the OPEC group ever really affected prices as a strong cartel, and in fact, it was the marginal decisions of the largest swing producer and world exporter, Saudi Arabia, that had the biggest impact amongst them, and their decisions were often not determined by some supposed wishes of an OPEC cartel.

It is not clear to me that much has changed since, and at the time of writing it remains unclear what will happen to crude oil prices, depending greatly on the scale of war and disruption to come. Indeed, in early November, the price of Brent crude has fallen to its lowest since July and was down around 17 percent from twelve months previous. Whether this is because of the possible further weakening of the world economy, further efficiency gains of energy usage, or some supply response already occurring, I have no idea.

As we move toward an increasingly digitized knowledge economy, oil has become increasingly delinked from economic growth.

ROBERT A. MANNING
Distinguished Fellow, Stimson Center

A half-century after the 1973–1974 OPEC crisis and oil embargo, the economic and geopolitical consequences of a petroleum economy—the good, the bad, and the ugly—have intensified and are playing out in mostly predictable ways. The rise of petrostates and their sovereign wealth funds has shaped the world economy; Russian energy has stoked great power competition. Endemic greed, corruption, excess, sources of conflict, and greenhouse gas emissions from oil still shape both the energy and geopolitical landscape.

The debate over scarcity has proven resource pessimists wrong, and the quote attributed to then-Saudi Oil Minister Ahmed Zaki Yamani in 1973, "The stone age did not end because the world ran out of stones, and the oil age will not end because we run out of oil," now seems vindicated.

At the same time, petroleum products and recycled petrodollars have driven global economic growth and prosperity over the past century and continue to do so. This, even as the International Energy Agency forecasts that the world will reach "peak oil" by 2030, suggesting we are only at the beginning of the energy transition, nonetheless. Oil can still impact inflation and/or contribute to recession. But as we move toward an increasingly digitized knowledge economy, oil has become increasingly delinked from economic growth.

Oil and gas contributed to a historic shift of wealth from West to East. And it has turned Riyadh and Abu Dhabi into global actors and regional powers for good and ill. Few saw Riyadh becoming a pivotal state globally or reshaping professional sports from golf to soccer. But oil persists in being a source of conflict: from the Iran-Iraq war; the Saudi-Iran/Shia-Sunni power struggle for regional supremacy; the Sudanese civil war; to Venezuela threatening to invade Guyana to seize its oil fields.

Yet the United Arab Emirates sending a robot probe to Mars and hosting the COP28 climate meeting is emblematic of how the Gulf states are using their oil wealth to diversity their economics and prepare for a post-oil, tech-driven economy.

Oil and gas, with shale fracking technology, have enabled the United States to become the world's largest energy producer. Oil and gas have also enabled Russia to sustain itself and its brutal ambitions as a major power and global spoiler. More broadly, oil has been a source of mostly distorted growth, corruption, and power struggles for developing states such as Angola, Algeria, and Libya, and across Latin America. It has tended to bankroll authoritarian elites and their ambitions. The devil's excrement, indeed.

The current Israel-Palestine-centered war is not entirely separate from first-order sources of tension, Sunni-Shia power struggles, and the risks of escalation from Iranian proxies. But it's worth noting that oil prices have thus far remained stable, suggesting the markets have discounted the escalation risks. Instead, they see the conflict as a more deadly resurgence of the struggle to find two lands for two peoples, though the outcome will likely shape the possibilities for Saudi-Israel normalization and regional dynamics flowing from it.

Technology is the obvious answer. The problem isn't oil; it's how you deal with it.

RICHARD JERRAM
Chief Economist, Top Down Macro

Whether we have learned much since the oil shock half a century ago is a moot point. But at least the Western world is less dependent on oil as a source of energy than it was back then and this probably explains

why oil prices have not surged in reaction to conflict in the Middle East. Renewables already account for about one-third of electricity production in G7 economies. And economic activity has become less energy-intensive, as it becomes more focused on services. By some estimates, each unit of global output uses half as much oil as it did in 1973.

OPEC continues to supply close to 40 percent of the world's oil needs, or around 60 percent if we consider OPEC+, by adding in countries, such as Russia, that aim to coordinate output decisions. Compliance is a different matter, although a strong political motivation might stiffen resolve. However, that would only serve to accelerate the demand shift away from oil which would make compliance less likely for those producers without political incentives. This would make any attempt at an embargo less effective.

Maybe we should be asking what has become a substitute for oil in the twenty-first century, in terms of creating structural vulnerabilities for our economies. Technology is the obvious answer, in a broad sense. More specifically, disruption to the supply of semiconductors or rare-earth metals could have an even greater impact than the 1973 oil shock. This is a problem because intensified conflict between the United States and China, or an invasion of Taiwan, is easy to envisage. Steps are being taken to try to reduce exposure, but it is doubtful things can change quickly, if at all. We couldn't label semiconductors as "excrement," considering the transformation they have brought to our lives, but supply disruption could have even more impact than that of oil half a century ago.

For a major producer to label oil as "excrement" seems harsh. The sudden discovery of valuable natural resources is like winning the lottery, or a sports star who achieves fame and riches at a young age. They might lack the education, friends, or support network to enable them to deal with the abundance, leading to decadence, waste and, ultimately, penury. So too for a country that could lack the institutions to allow it to fully benefit from a resource boom.

Some developed countries, such as Norway, have prudently set aside much of the wealth generated by their oil exports, while allowing a slice of it to support the lifestyle of today's population. Strong, well-established institutions together with an engaged and educated electorate created the environment for success.

Less-mature, lower-income countries—such as Venezuela—often lack such a background. Elites are able to command the oil revenues for their own purposes, whether through outright corruption or via distribution to preferred domestic interests. The problem isn't oil; it's how you deal with it.

Describing oil as "the devil's excrement" seems extremely prescient.

DAN MAHAFFEE

Senior Vice President and Director of Policy, Center for the Study of the Presidency and Congress

Describing oil as "the devil's excrement" seems extremely prescient, not only considering the history of the product but also the climate crisis we face from years of dependence on oil and other fossil fuels. Few other resources and their resulting products are as integral to modern life as petroleum products. The necessities of food, shelter, and clothing are all dependent on oil products, while modern logistics would be impossible without them. For example, an electric car still requires polymers, cushioning, flame retardants, and lubricants (albeit less than a conventional powertrain), and with many U.S. utilities, plugging-in still means likely connecting to natural gas-generated power.

We have seen around the world how oil has led to dictatorships, brutal regimes, civil wars, and all the ills described by Juan Pablo Pérez Alfonzo. Yet there are also the examples of Norway, and to a lesser extent the U.S. state of Alaska, where the benefits of oil from the luck of geography and geology are shared back to the citizens. It is easier to blame the ills of oil on resource "curses" or the "devil's excrement," as curses and the devil are easier to blame than addressing our own shortcomings and poor choices.

Oil will continue to be a critical part of the modern economy, as well as the expertise from roughnecks and welders to scientists and chemists critical to any workforce—especially any nation that hopes to have industry, logistics, and manufacturing as part of their economy. Even if we are making these products in the future from biological or recycled stocks, the knowledge to do so will come from how we've worked with oil. Focusing policies solely on oil production also misses the broader value chain unlocked by petroleum products, as well as demonstrating the importance of downstream capacity in areas like refining.

As the United States continues on its pathway as an oil producer—and price player via production and the Strategic Petroleum Reserve—U.S. policymakers will need to be more clear-eyed and canny about our oil economy rather than trying to look past it for the energy transition.

First, we will remain reliant on it for some time to come; and second, the lessons of how we succeeded and failed in the oil economy will be just as important for the future transition. Otherwise, cobalt, lithium, or other resources could just as easily be the next "devil's excrement."

The hard but essential task is to cut oil demand.

BEN CAHILL
Senior Fellow, Energy Security and Climate Change Program, Center for Strategic and International Studies

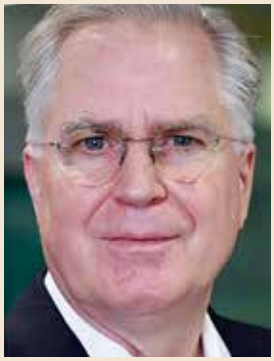
October marked the fiftieth anniversary of the 1973 Arab oil embargo. December's COP28 conference included an agreement on "transitioning away from fossil fuels in energy systems" to achieve net-zero emissions by 2050. The long-term outlook is ever cloudier, but it is an opportune time to examine structural changes in oil supply, market mechanisms, and demand.

The ghosts of the 1970s oil shocks are ever-present in energy markets. Those events created an unparalleled burden on U.S. consumers, and the consequences were far-reaching. Soaring oil prices encouraged new spending on global oil exploration, spurring a production boom in the Gulf of Mexico, Alaska, and the North Sea that led to over-supply by the mid-1980s. The oil shocks also changed consumer preferences, leading buyers to abandon gas-guzzling cars in favor of smaller and more fuel-efficient vehicles. (Recent bouts of high energy prices, by contrast, did little to stop the rise of SUVs).

Today, the Organization of the Petroleum Exporting Countries still controls a large enough share of global supply to shape markets, but a few critical factors have changed. The shale revolution in North America introduced a new paradigm by delivering more dynamic, price-responsive, short-cycle oil. Non-OPEC supplies outpaced expectations again in 2023, with U.S. crude oil production and exports reaching all-time highs despite the industry's spending discipline. Shale producers continue to confound OPEC—easing the boom-and-bust cycles that have characterized the industry for decades and reducing the pricing power of the producers' club.

The nature of the oil market has also changed, with a vast paper market that dwarfs physical trading volumes. The New York Mercantile Exchange introduced the first futures contract for West Texas Intermediate crude in 1983, and financialization of the oil market has continually deepened over the decades, improving transparency and enabling more efficient price discovery. To be sure, the oil market is prone to short-term fluctuations that often seem untethered from supply-demand fundamentals. But historian and oil analyst Dan Yergin has noted that during the 1970s shocks, buyers faced "great uncertainty, poor information, and disruption of traditional supply arrangements." The modern market has its ills, but it functions remarkably well given the scale and complexity of producing, transporting, refining, and distributing oil across the world.

Much has changed since the 1970s, but the energy crises of that era seem somehow more tangible than a future entirely free of fossil fuels. Perhaps this is human nature and an error of perspective. The evidence of a rapid energy transition is accumulating, and the International Energy Agency estimates that oil demand will peak and begin a long plateau by 2030. Others are more skeptical. There is no doubt, however, that climate change demands faster action on reducing demand for fossil fuels. Ultimately, this may be the key unlearned lesson of the 1970s: that while new supplies and more efficient markets boost energy security, the hard but essential task is to cut oil demand.



The West together with China should redouble their efforts to accelerate alternatives to fossil fuels.

STEVEN FRIES
Senior Associate Fellow, Institute for New Economic Thinking, University of Oxford, Nonresident Senior Fellow, Peterson Institute for International Economics, and Member, UK Climate Change Committee

The thrust to human endeavor from fossil fuels creates the potential for both enormous good and bad. We now take as granted extraordinary living standards developed from God's detritus, accumulations of organic remains from prehistoric life. But these deposits have also

been called the devil's excrement by a leading figure in OPEC's founding.

The metaphor initially referred to the curse of fossil fuel resources—market rents and their corrosive effects on politics and economies. To this curse, which continues its hold, add the geopolitical weaponization of energy supplies by dominant exporters and dangerous climate change largely from fossil fuels.

While energy markets deliver the goods, their structures can enable the bad. A lesson from OPEC's effective oil embargo on Western countries that supported Israel in the 1973 Yom Kippur War—and inability to impose one in the 1967 war—is the pivotal role of energy market structures. Roots of such episodic market and political power can take hold when energy demand presses against supply capacity (in 1973 but not 1967) and with concentrated supply and price-insensitive demand.

Russia clearly took note. Tight natural gas markets emerged as economies recovered from the Covid-19 pandemic. Russia's restrained natural gas supplies to Europe before invading Ukraine in 2022 and their near cessation during the war put Europe under enormous economic pressure. With the West united in supporting Ukraine, the Russian gambit aimed to split the bloc.

But Europe's strong policies to cut energy demand, boost efficiency, and accelerate renewables have so far prevailed. Recourse to resilient international markets for liquefied natural gas, especially U.S. supplies, and a mild winter also helped Europe weather the crisis.

More recently, Israel's response to Hamas's attack occurs as some OPEC+ production quotas from the pandemic remain along with voluntary cuts by some members. Oil demand today falls short of supply capacity amid growing OPEC+ and non-OPEC+ supplies and electric-vehicle fleets. These factors increasingly counter such strategic supply cuts, whether motivated by revenues or geopolitics.

The route to better governance, greater energy security, and a safer climate is clear from energy market experience. It is not a simple demonization of fossil fuels, but rather a relentless focus on accelerating alternatives to them, including through pricing their emissions, and fostering competitive energy markets. These paths closely align.

Abundant renewable resources are widely accessible with solar photovoltaics and wind turbines. With well-designed electricity systems, they are more secure than fossil resources and increasingly cost competitive. Growing electrification of road transport will also likely increase oil demand's sensitivity to price and lessen its level. Such competition can curb oil exporters' market power and rents garnered at consumers' expense.

Major energy consumers—the West together with China—should seize the energy market initiative and redouble their efforts to accelerate alternatives to fossil fuels. This would be good for global prosperity as well as the climate and energy security. Fifty years after the 1973 embargo, the need for these alternatives is greater than ever.

I fear we may be having this same conversation about the "resource curse" decades from now.

MARK FINLEY
Fellow in Energy and Global Oil, Baker Institute for Public Policy, Rice University

Oil has long been—and remains—both a blessing and a curse. Its ubiquity, energy density, cost, and ease to transport and store have made it the world's dominant source of energy for the past sixty years. But many of the features that have made it an attractive fuel have come with a cost for nations, families, and our environment.

Oil is also widely seen as a strategic commodity, given its dominance in the global energy mix and its widespread use in war-fighting equipment and in transportation more generally.

Additionally, while oil is widely available in the earth's crust, it is not evenly distributed; nor are the technical skills and financial resources needed to develop oil resources. Oil deposits generally require a substantial upfront investment to find and develop oil resources, and to refine the produced crude oil into useful products like gasoline and diesel fuel.

Combined, these factors have made oil an attractive pathway for national development aspirations, in addition to being an attractive fuel for consumers. Generally, development—at least in its initial stages—is undertaken in partnership with large corporations that have the technical skills and financial resources to develop new oil discoveries. That way, a country blessed with an endowment of valuable oil resources can have its benefit without possessing the domestic means to undertake its development.

The downside of this pathway is that the value is not created by the people in that country, and frequently is not shared with them. In this, an oil bonanza can distort the economy and slow—or reverse—the development of civil society and institutions.

Moreover, large up-front investments and long development times have made the global oil industry prone to exaggerated booms and busts in prices. And in turn, that inherent volatility has repeatedly led to the rise of groups (like OPEC today) that seek to manage investment and production—to limit price volatility and, frequently, to boost prices. The boom-bust cycle of oil prices—and national revenues—has also impeded economic development and fostered political instability.

So what's to be done? Can we manage oil to reap its benefits, or are we doomed to forever reap the whirlwind of the oil curse? National efforts to manage oil windfalls while avoiding their potential downsides are ubiquitous. A number of wealthier countries and multilateral development institutions have developed policies and toolkits for responsible development of natural resources. Unfortunately, the track record of these efforts in many resource-rich developing countries has been decidedly mixed.

For now, oil remains the world's dominant energy source. But rapid growth of electric vehicles—and increasingly ambitious climate policies more generally—could drive a large and rapid change. For example, the International Energy Agency assesses that world oil demand could fall by 80 percent by 2050 in its Net Zero Scenario. (Admittedly, that's a pathway the world is not likely to achieve without significant additional policy measures, technology, and consumer behavior changes.)

Will the fuels that replace oil in this scenario be more of a blessing and less of a curse? Extractive industries that will supply the base minerals for EV batteries and other energy transition materials will face many of the same challenges. I fear we may be having this same conversation about the "resource curse" decades from now.

The half-century-ago energy shock sparked a profound initial conservation-renewable switch only to fade.

GARY KLEIMAN
Senior Partner, Kleiman International Consultants

The half-century-ago energy shock sparked a profound initial conservation-renewable switch only to fade in later decades, until overlapping climate and geopolitical crises injected new urgency through the Russia-Ukraine and Israel-Palestinian confrontations. President Carter at the time, an engineer by training, warned of the geophysical and environmental limits of oil drilling, and the diplomatic danger of import reliance in the OPEC embargo era. He famously donned a sweater year-round with the White House thermostat dialed down, and an experimental solar panel was installed on the roof before mass production was cost-effective and viable.

Beyond these headline attempts at fossil fuel shift, the global financial market backdrop was equally important and understood only years later during the 1980s debt crisis. Money center banks in New York, London, and Tokyo recycled the huge petrodollar surpluses from Gulf and Mideast countries into so-called "Third World" lending before the term "emerging markets" came into vogue. The whole edifice collapsed under a combination of Federal Reserve interest rate hikes, commodity price correction, and oil producer economic mismanagement. Fifty years later, that same pattern looms while the ingredients are under round-the-clock instantaneous fund manager scrutiny, unlike the earlier era's more staid, information-scarce pace.

In the immediate aftermath of the Israel-Hamas war outbreak, oil prices followed an historic trajectory dating back thirty years ago to the Gulf war, as they spiked and subsequently settled lower on recognition that the underlying demand-supply imbalance was relatively intact. Distinct in the latest episode is the granular investor analysis and reaction on the economic, fiscal, and external debt implications for regional players to an extent unimaginable even during the last 2000s hostilities. For Israel, currency as well as military defense was in the spotlight as the shekel fell to a fifteen-year low against the dollar, before the well-respected independent central bank rolled out foreign exchange interventions with its $200 billion reserve pile, and convinced rating agencies that monetary discipline would be maintained with the conflict's inevitable inflation spurt. Lebanon, in a three-year depression-like meltdown, was at risk of losing one-quarter of GDP without tourism, as airlines refused to fly in if another front with Hezbollah opened on the border. Jordan's sovereign bonds sold off as the host to the main concentration of Palestinian refugees outside Gaza seemed likely to absorb another influx, while Egypt's actually rose on speculation it would be offered official debt relief if it agreed to allow large-scale aid through the southern Rafah crossing.

The energy supply question turned as much on local as worldwide dynamics, with Israel's offshore gas fields temporarily off line from security danger with pipeline commitment within the neighborhood, to Egypt and Jordan, rather than outside. These commodity and financial market changes are a departure within the perennial

backdrop of dirty energy dependence and the Mideast diplomatic imbroglio. Post-conflict solutions will have to take into account bottom line, sometimes figuratively lined with excrement, money manager views in broader anti-crisis mobilization.

Far from being "the devil's excrement," the earth's fossil fuel supply should be considered a gift from God.

MICHAEL LIND
Contributor,* Tablet, *Fellow, New America, and author,* Hell to Pay: How the Suppression of Wages Is Destroying America *(Portfolio, 2023)

Far from being "the devil's excrement," the earth's fossil fuel supply should be considered a gift from God. If not for the existence of coal, oil, and natural gas—energy-dense, portable, widely distributed, and relatively easy to recover—a smaller global population would be trapped today in agrarian poverty. Industrial civilization, mass urbanization, and the liberation of humanity from exhausting farmwork would not have been possible solely on the basis of the burning of biomass and water- and wind-power. Fossil fuels are indispensable not only for the energy that powers industry and transportation and frees people from extremes of heat and cold, but also for artificial fertilizers without which today's population of more than eight billion people could not be sustained. Even those who favor a long-term transition from fossil fuels to renewable or nuclear energy must concede that such a transition could not have occurred without a fossil fuel phase.

In addition to heating the atmosphere by being burned, fossil fuels can cause incidental pollution through spills or products of combustion that are hazardous to the environment or human health. But over-logging and inhalation of smoke and ash from wood fires are damaging as well, without the benefits that flow from cheap energy on an enormous scale. Hydro power wrecks riverine ecosystems, while solar panels and windmills require the mining of often-toxic minerals and metals and the disposal of vast amounts of obsolete equipment. Because they are so energy-dense, fossil fuels, like nuclear energy, spare vast areas of land for other purposes, including rewilding, while less power-dense sources like wind and solar and hydropower require the use of great expanses of land (catchment areas, in the case of hydro) to obtain relatively little energy.

Fossil fuels can cause political problems, to be sure. One is the dependence of importing countries and regions, like gas-importing Europe, on producers with regimes that may be hostile, like Russia. But dangerous import dependence can occur with any kind of internationally traded product or service. Russia supplies nearly a quarter of global wheat exports, and China dominates global markets in manufacturing industries, supplying three-quarters of the global production of solar energy components (modules, cells, wafers, and polysilicon).

The "resource curse" refers to the domestic political distortions that often occur in commodity-exporting economies. Unlike knowledge-intensive manufacturing economies, such countries need not invest in educated, well-paid workforces, and their politics may degenerate into dictatorship or factional struggles to capture the profits from commodity exports.

But the resource curse is not limited to countries that export oil and gas. The same pathologies have afflicted the American South in the past and Latin American countries that have specialized in exports of maize, soybeans, meat, precious metals like gold and copper, and—yes—bananas. And a successful transition from fossil fuels to renewable energy might exacerbate the resource curse in the unstable or autocratic countries in which many minerals that are essential for green tech are concentrated, like the war-torn and cobalt-rich Democratic Republic of Congo. ◆

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220 I Street, N.E., Suite 200
Washington, D.C. 20002
Phone: 202-861-0791 • Fax: 202-861-0790
www.international-economy.com
editor@international-economy.com