The Letort Papers



THE STRATEGIC IMPORTANCE OF THE GLOBAL OIL MARKET

Leif Rosenberger

Strategic Studies Institute
U.S. Army War College, Carlisle, PA

U.S. ARMY WAR COLLEGE
SSI
STRATEGIC STUDIES INSTITUTE

The United States Army War College

The United States Army War College educates and develops leaders for service at the strategic level while advancing knowledge in the global application of Landpower.

The purpose of the United States Army War College is to produce graduates who are skilled critical thinkers and complex problem solvers. Concurrently, it is our duty to the U.S. Army to also act as a "think factory" for commanders and civilian leaders at the strategic level worldwide and routinely engage in discourse and debate concerning the role of ground forces in achieving national security objectives.

The Strategic Studies Institute publishes national security and strategic research and analysis to influence policy debate and bridge the gap between military and academia.

The Center for Strategic Leadership and Development contributes to the education of world class senior leaders, develops expert knowledge, and provides solutions to strategic Army issues affecting the national security community.

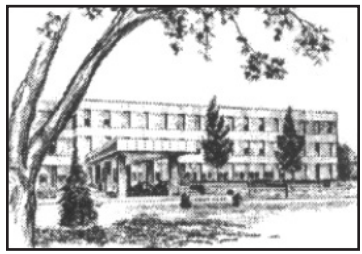
The Peacekeeping and Stability Operations Institute provides subject matter expertise, technical review, and writing expertise to agencies that develop stability operations concepts and doctrines.

The Senior Leader Development and Resiliency program supports the United States Army War College's lines of effort to educate strategic leaders and provide well-being education and support by developing self-awareness through leader feedback and leader resiliency.

The School of Strategic Landpower develops strategic leaders by providing a strong foundation of wisdom grounded in mastery of the profession of arms, and by serving as a crucible for educating future leaders in the analysis, evaluation, and refinement of professional expertise in war, strategy, operations, national security, resource management, and responsible command.

The U.S. Army Heritage and Education Center acquires, conserves, and exhibits historical materials for use to support the U.S. Army, educate an international audience, and honor Soldiers—past and present.

STRATEGIC STUDIES INSTITUTE



The Strategic Studies Institute (SSI) is part of the U.S. Army War College and is the strategic-level study agent for issues related to national security and military strategy with emphasis on geostrategic analysis.

The mission of SSI is to use independent analysis to conduct strategic studies that develop policy recommendations on:

- Strategy, planning, and policy for joint and combined employment of military forces;
- Regional strategic appraisals;
- The nature of land warfare;
- Matters affecting the Army's future;
- The concepts, philosophy, and theory of strategy; and,
- Other issues of importance to the leadership of the Army.

Studies produced by civilian and military analysts concern topics having strategic implications for the Army, the Department of Defense, and the larger national security community.

In addition to its studies, SSI publishes special reports on topics of special or immediate interest. These include edited proceedings of conferences and topically oriented roundtables, expanded trip reports, and quick-reaction responses to senior Army leaders.

The Institute provides a valuable analytical capability within the Army to address strategic and other issues in support of Army participation in national security policy formulation.

Strategic Studies Institute
and
U.S. Army War College Press

THE STRATEGIC IMPORTANCE OF THE GLOBAL OIL MARKET

Leif Rosenberger

June 2015

The views expressed in this report are those of the author and do not necessarily reflect the official policy or position of the Department of the Army, the Department of Defense, or the U.S. Government. Authors of Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press publications enjoy full academic freedom, provided they do not disclose classified information, jeopardize operations security, or misrepresent official U.S. policy. Such academic freedom empowers them to offer new and sometimes controversial perspectives in the interest of furthering debate on key issues. This report is cleared for public release; distribution is unlimited.

*****

This publication is subject to Title 17, United States Code, Sections 101 and 105. It is in the public domain and may not be copyrighted.

*****

Comments pertaining to this report are invited and should be forwarded to: Director, Strategic Studies Institute and U.S. Army War College Press, U.S. Army War College, 47 Ashburn Drive, Carlisle, PA 17013-5010.

*****

All Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press publications may be downloaded free of charge from the SSI website. Hard copies of this report may also be obtained free of charge while supplies last by placing an order on the SSI website. SSI publications may be quoted or reprinted in part or in full with permission and appropriate credit given to the U.S. Army Strategic Studies Institute and U.S. Army War College Press, U.S. Army War College, Carlisle, PA. Contact SSI by visiting our website at the following address: *www.StrategicStudiesInstitute.army.mil.*

*****

The Strategic Studies Institute and U.S. Army War College Press publishes a monthly email newsletter to update the national security community on the research of our analysts, recent and forthcoming publications, and upcoming conferences sponsored by the Institute. Each newsletter also provides a strategic commentary by one of our research analysts. If you are interested in receiving this newsletter, please subscribe on the SSI website at *www.StrategicStudiesInstitute.army.mil/newsletter.*

*****

The author would like to thank Commodore Richard Menhinick, the Director of the Combined Strategic Analysis Group (CSAG) at U.S. Central Command (CENTCOM), for reviewing this manuscript and for the opportunity to do research for Azimuth Check #15 which culminated in CSAG Strategy Paper #7 on February 12, 2015, on the impact of global oil market trends, growing U.S. oil independency, and the Central Region's oil regimes and their implications for the wider region.

ISBN 1-58487-686-7

FOREWORD

In the past year, oil prices have plummeted. At first glance, the U.S. economy as a whole appears to be a big winner. Newspaper headlines talk about "America's oil independence." In Carlisle, PA, we can gas up our cars in late-March 2015 for less than $2.50 a gallon. That means more money in our pockets for consumer goods. Therefore, consumers are big winners and are rejoicing. Is it time for a victory parade?

Not so fast, says Dr. Leif Rosenberger, the Chief Economist at U.S. Central Command. As someone who has spent 3 1/2 decades connecting economics and security as a scholar, educator, and now a practitioner in the U.S. Government, Dr. Rosenberger reminds us that, in economics and international business, appearances can be deceiving. He points out that shale oil producers in the United States are learning a bitter lesson about the cyclical nature of the international oil market. The more they produce, the more oil prices fall and the more their profits get squeezed.

Dr. Rosenberger argues that low oil prices have created the worst slump that the global oil industry has faced since 1986. Oil companies in the United States are fighting for survival. They are forced to cut capital spending to the bone and lay off thousands of their employees. In contrast, state owned oil groups in the Middle East can dip into their sovereign wealth funds or oil stabilization funds and weather the storm. Saudi Arabia feels it can price the oil producers in the United States out of the market.

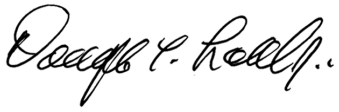
Why is this a strategic issue? At a time when the United States is seeking cooperation with Saudi Arabia and the rest of the Gulf Cooperation Council (GCC) to counter the Islamic State in Iraq and Syria

(ISIS), the United States and Saudi Arabia are in a de facto price war. Dr. Rosenberger makes the argument that the coalition will struggle if the United States and the GCC are determined to run each other's oil companies into the ground. Dr. Rosenberger is especially concerned that the U.S. corporate approach to cutting costs and capital spending could result in a lack of oil production in 4 or 5 years. This short-sighted corporate mismanagement may well create conditions for a dramatic rise in oil prices, possibly hitting as high as $200 a barrel. Instead of this chaotic boom and bust cycle, Dr. Rosenberger argues for more energy cooperation and price stability.

He concludes that the time to set up institutions to avert these counterproductive price wars or to create energy banks to mitigate them is long overdue. Therefore, he recommends the creation of a bank as a lender of last resort for oil companies. However, a bank that bails out oil companies in distress is not all that is needed. Dr. Rosenberger persuasively argues that what is also needed is an early warning system for the oil industry.

Therefore, if strategists are going to be successful, they need a clear understanding of the forces that determine the supply and demand for oil. Such an understanding will help them shape national policy on matters with potentially unprecedented consequences. What is needed from world leaders is an unprecedented level of cooperation in the formulation of a long-term international oil strategy. One consequence of failure could be resource-driven conflicts that might have been avoided had policymakers understood the nature and extent of the world oil supply and taken steps to deal with it.

The real danger is to relegate the world oil supply to the backwater of strategic studies. Strategists need to understand that the world oil supply is a global challenge that bears most heavily on the peace and prosperity of the international system. World leaders have an unprecedented opportunity to move this global issue to the top of their agendas. If they fail, their successors may have to deal with the problem "when it comes to visit" as a major and enduring crisis in the not too distant future.



DOUGLAS C. LOVELACE, JR.
Director
Strategic Studies Institute and
U.S. Army War College Press

ABOUT THE AUTHOR

LEIF ROSENBERGER worked at the Central Intelligence Agency (CIA) and the Defense Intelligence Agency (DIA) from 1980 to 1986, and in the Strategic Studies Institute (SSI) and the Department of National Security and Strategy at the U.S. Army War College (USAWC) from 1986 to 1998. He was the Chief Economist at the Pacific Command (PACOM) from 1998 to 2008. He has been the Chief Economist at U.S. Central Command (CENTCOM) since 2008. At the CIA and the DIA, he was a pioneer in tracking terrorist financing after the bombings in Beirut in 1983. He ran the 24-hour alert center on counterterrorism in the Pentagon and was the first U.S. analyst to expose external support to the Philippine New People's Army. At USAWC, he held the General Douglas MacArthur Academic Chair of Research. He was promoted from Associate to Full Professor of Economics in 1993. He remains an SSI Adjunct Professor. At PACOM, he authored two books on Asian economies that received the highest 5-star ratings from the Australian National University. Admiral William Fallon brought him from PACOM to CENTCOM where he has been a policy entrepreneur, initiating the New Silk Road Initiative, which transformed U.S. economic policy in Afghanistan. Admiral Jeffrey Harley appointed him as Chief of the New Silk Road Task Force, a 1-star equivalent position. Secretary of State Hillary Clinton made the New Silk Road Initiative U.S. policy. Dr. Rosenberger has also been a prolific writer. In addition, he is an accomplished educator. He taught the core curriculum and international economics at USAWC. He taught International Business in the Executive MBA Program at the University of Hawaii in 2006 and received the

highest student evaluation. He spent his sabbatical year of 1997 as a Visiting Scholar on Economic Faculty at Harvard University, funded by a U.S. Secretary of the Army Research & Study Fellowship. He was chosen as PACOM Professional of the Year and U.S. Federal Employee of the Year in 2006 and 2007. General David Petraeus awarded him the Joint Civilian Service Commendation Medal. Admiral Fallon awarded him the Chairman Joint Chiefs of Staff Joint Meritorious Civilian Service Medal. He won four faculty writing awards at USAWC. In 2008, Access Asia ranked him its top expert out of 700 specialists on the Asian economy. Dr. Rosenberger graduated from USAWC in 1989 and won the student writing award; holds a B.A. with honors from Harvard University; an M.A. from Boston University; and a Ph.D. in international relations from Claremont Graduate School, where he held the Merit Fellowship as the top ranking student. He also passed five doctoral exam fields in international economics, international politics, and U.S., Soviet, and Chinese foreign policies.

SUMMARY

This Letort Paper will explain why the confluence of four major factors: 1) rising oil supplies, 2) weak oil demand, 3) financial shifts on Wall Street, and 4) a strong U.S. dollar far outweigh the geopolitical risks in the Mideast and put downward pressure on oil prices. This Paper analyzes the concomitant factors that are now putting upward pressure on oil prices, as well as those that continue to keep oil prices relatively low.

On the supply side, lower oil prices in part reflect booming U.S. oil production. The real "game changer" is the recent discovery of 30 more years of unconventional oil. The global oil market is now "swimming" in one trillion more barrels of oil that was not included in the world oil supply a few years ago. This new oil supply mostly breaks down into three types of unconventional extraction of oil: Brazil's deep water oil, U.S. shale oil, and Canada's oil sands.

On the demand side, there continues to be a sluggish global economy. For instance, Japan, Germany, and Italy are all suffering from near economic contraction. China's growth is rapidly slowing down and is a far cry from its double digit growth in the past. Meanwhile, the U.S. economy was also weak after the global financial crisis. In an effort to boost gross domestic product growth, the federal government (Fed) under Ben Bernanke loosened the monetary policy (increased the growth of the money supply), which in turn caused oil prices to rise as a hedge against expected inflation and a weak dollar, but runaway high inflation never happened. So now the Fed (under Janet Yellen) is planning to tighten monetary policy by reducing (or tapering) the pace of growth of quanti-

tative easing, which, in turn, will strengthen the U.S. dollar. A stronger U.S. dollar buys more oil and therefore lowers crude oil prices.

In sum, the major factors that determine average oil prices have all been pointing in a downward direction. In fact, in 2015, there is likely to be a growing surplus of oil on world markets created by rising oil production in the United States, Canada, and a few other countries. The result has been falling oil prices. Low oil prices have created winners and losers. Winners include the global economy as a whole, and consumers, especially U.S. consumers, and net oil importing countries. Losers include oil investors, net oil exporting countries, oil producing companies, and the workers that have been laid off by these oil exporting companies and countries. This Paper discusses why the winners are benefitting, why the losers are suffering, how the winners and losers are responding, and how their responses will affect oil prices down the road.

THE STRATEGIC IMPORTANCE OF THE GLOBAL OIL MARKET

PART I: INTRODUCTION

The global oil market in early-2015 is not what it used to be. In the past, environmentalists used to warn everyone that the world would soon run out of oil. Not anymore. If there is one thing that is certain these days, it is that the world has plenty of oil. Thanks to breakthroughs in energy technology, the new game changer is the recent discovery of 30 more years of oil supply (or one trillion more barrels of oil) than oil experts said existed only a few years ago. This new oil supply involves unconventional oil extraction of shale oil in the United States, oil sands in Canada, and deep water oil in Brazil.

In the past, Saudi Arabia was the swing producer. If the Saudis cut oil production, prices rose. Not anymore. When Saudi Arabia cut production in August 2014, oil prices actually fell. Rising U.S. oil production more than offset Saudi cuts in oil output. As a result, it is now clear that U.S. shale oil producers are now the swing oil producers.

In the past, geopolitical risks from military conflicts like we are seeing today in the Middle East would often cause oil prices to rise. Not so much anymore. Short of a major oil disruption in the Mideast, low oil prices now reflect an oil glut outweighing weak demand for oil. Geopolitical risk is a minor driver.

In the past, Wall Street used to worry about inflation. This was particularly true after the global financial crisis when the federal government (Fed) bought a trillion dollars' worth of global assets to boost weak global demand. That spooked Wall Street, which felt

the Fed was creating runaway inflation. As a hedge against inflation, Wall Street investors bought vast quantities of oil in the futures market. That distorted the market and drove oil prices sky-high, but investors guessed wrong. Inflation never happened. Long positions in high oil prices were unwinding, and that lowered oil prices.

In the past, economists also used to worry about inflation.[1] Not anymore. On a global basis, serious economists are no longer worried about inflation. The new worry is deflation and weak demand in Japan and the Eurozone, and a rapid Chinese economic slowdown. That, in turn, weakens the global demand for oil.[2] In contrast, the combination of the U.S. economy being on a roll and the expectation that the Fed will tighten its monetary policy in the 3rd quarter of fiscal year 2015 has strengthened the U.S. dollar and lowered oil prices in U.S. dollars.

This Letort Paper will explain why the confluence of four major factors: 1) rising oil supplies, 2) weak oil demand, 3) financial shifts on Wall Street, and 4) a strong U.S. dollar, far outweigh the geopolitical risks in the Mideast and put downward pressure on oil prices. In December 2014, global oil prices had fallen about 50 percent from their peak in mid-July 2014. However, oil prices are rising again. Brent crude oil jumped 21 percent in early February from its closing low of January 13. Oil had not risen this fast since March 2009. Why is this happening? Is this rise sustainable? This Paper will also analyze the concomitant factors that are now putting upward pressure on oil prices, as well as those that continue to keep oil prices relatively low.

When oil prices dropped significantly in the past, the Organization of Petroleum Exporting Countries (OPEC) would simply cut their production to bolster

the price. So why did OPEC not do the same thing again? Actually, Saudi Arabia announced that it cut oil production by 400,000 barrels a day in August 2014. There was no increase in oil prices as non-OPEC oil production surged to more than offset Saudi cuts in a world swimming with an oil supply surplus. U.S. oil production hit a 28-year high in August. Libyan oil production surged from 200,000 barrels a day to 800,000 barrels a day several months ago.[3] As a result, prices actually fell because rising oil production outweighed Saudi cuts in output. What is more, growing budget deficits in many OPEC countries in recent years make it far more difficult to cut oil production because these countries can no longer afford the loss of their oil revenues.[4]

Where Is All This New U.S. Oil Production Coming From?

In large part, lower oil prices are the result of booming U.S. oil production. Horizontal drilling and hydraulic fracking have raised U.S. crude oil output by more than 65 percent in the past 6 years. Between 2011 and 2013, the United States raised its output by 2.2 million barrels of oil a day, more than the entire increase in global demand. Innovation has made Eagle Ford in south Texas, Bakken in North Dakota, and Permian Basin in West Texas the industry's equivalents of Silicon Valley.[5]

Warren Henry, Conoco's head of investor relations, is bullish on Bakken's production, and compares it to Saudi Arabia in the 1950s. In February 2014, EOG Resources announced a 45 percent increase in its oil reserves in Eagle Ford (from 2.2 billion to 3.2 billion barrels). Official U.S. data supports these up-

beat assessments: U.S. Government Energy Information Administration (EIA) has recently published rising output from new wells in Eagle Ford, Bakken, Permian, and the Niobrara formation of Colorado.[6]

In many ways, the United States is taking on the role of "swing producer" that was once played by Saudi Arabia. This rising U.S. oil production acts as financial offsets to geopolitical risk. Even if more geopolitical disruption occurs in the Central Region, rising U.S. oil production serves to soften the blow from these disruptions and keep downward pressure on oil prices.

Of course, the United States is not alone in boosting its oil output. Libya boosted its oil output from 400,000 barrels a day in July 2014, to 740,000 barrels a day by September 9, 2014. In addition, a few other countries like Canada, Brazil, and Mexico also have plans to boost production and help the United States meet demand, but there is still a great burden of expectation riding on the U.S. output.

What Does the Demand for Oil Look Like?

The other factor driving down oil prices is weak demand. For instance, in June 2014, oil refineries in Europe ran at sharply lower rates. At the end of July 2014, producers of West African crude, which normally sells to the United States and Europe, had trouble finding buyers. As a result, crude oil stockpiles rose significantly. Crude oil and refined product supplies rose 9.5 million barrels by September 1-5, 2014.[7]

This weak demand for oil reflects a sluggish global economy. For instance, Japan, Germany, and Italy are all suffering from economic contraction. In addition, China's imports fell for the second straight month in

August 2014 and its gross domestic product (GDP) growth is the slowest since 1990.[8] While China is still growing at 7.4 percent in 2014, that is a far cry from China's double digit growth in the past.

What Does the Long View Look Like?

However, the real "game changer" is the recent discovery of 30 more years of unconventional oil. The global oil market is now "swimming" in one trillion more barrels of oil that was not included in the world oil supply a few years ago. This new oil supply breaks down into three types of unconventional extraction of oil: deep water oil, 317 billion barrels; shale oil, 345 billion barrels; and oil sands, 388 billion barrels.[9]

In the past, petroleum had a monopoly on transportation. Not anymore. Trucks, buses, and ships are starting to use natural gas instead of gasoline to fuel their engines. In addition, older engines are being retrofitted. In Brazil, one-third of the cars are already using fuel other than petroleum. To sum up, the combination of 30 more years of unconventional oil supply and weaker demand for oil is putting downward pressure on global oil prices over the next 5 years.

Why did Monetary Policy Drive Up Oil Prices?

After the 2008 financial crisis, the Fed (under Ben Bernanke) needed to boost GDP growth. The Fed cut interest rates and printed trillions of dollars' worth of new currency via "quantitative easing (QE)." This huge growth of the money supply increased the desirability of hard assets such as oil (and other commodities) as a hedge against the expected risk of a falling U.S. dollar and rising inflation.[10]

How did Financial Markets Affect Oil Prices?

Since the global financial crisis in 2008, institutional investors have poured into the crude oil market, which caused prices to soar 140 percent from their post-financial crisis lows.[11] Large institutional investors that placed a record bullish bet on high oil prices typically capture the middle part of large market moves. Not surprisingly, as late as June 2014, money managers, including hedge funds, continued to place record bets on rising U.S. and Brent oil prices.[12]

Institutional investors are often wrong at important market turning points. The massive inflation and a weak dollar that they expected to occur as a result of the Fed's loose monetary policy turned out to be ill-advised and unlikely to occur in the near future. The increasing awareness that this assumption was off the mark is shaking up Wall Street.

Meanwhile, the actual producers and users of crude oil (the Exxons and British Petroleums [BP]) use the futures market as a form of insurance against adverse price moves. These commercial hedgers are considered to be the smart money because they are the physical crude oil market and have firsthand info about the future supply and demand trends we cited previously.

Commercial hedgers now have a record 445,492 net contract short positions in the crude oil futures market, which indicates that their greatest concern is a sharp decline rather than an increase in crude oil prices. Commercial crude oil hedgers are well aware of the bearish points discussed earlier, which likely explains why they are hedging and betting on a coming crude oil bust.

The impulse to sell has been growing for weeks. Traders have watched oil producers shift their hedging and trading of future contracts that are years away. That is a good sign that producers see supply coming on strong without demand to absorb it for a long time.

Many traders have unwound their bets on high oil prices they made back in June 2014.[13] On August 5, 2014, their cumulative bets on rising oil prices on the New York Mercantile Exchange (NYMEX) fell to the lowest level since January, and bets on higher prices for Brent Crude hit the lowest level since February 2014.[14]

Speculators are the least bullish on U.S. crude oil prices in over 17 months. Money managers have cut their net-long positions for West Texas Intermediate (WTI) by 9.2 percent in the week ending on September 2, 2014. The same week ending September 2, net-long positions for Brent crude oil dropped to their lowest levels since July 2012.[15]

How Will Changes in Monetary Policy Affect Oil Prices?

As stated earlier, the U.S. economy was weak after the global financial crisis. In an effort to boost GDP growth, the Fed (under Ben Bernanke) loosened the monetary policy (increased the growth of the money supply via QE), which in turn caused oil prices to rise as a hedge against expected inflation.

However, runaway high inflation never happened. So now the Fed (under Janet Yellen) is planning to tighten monetary policy by reducing (or tapering) the pace of growth of QE, which in turn will strengthen the U.S. dollar. A stronger U.S. dollar buys more oil and therefore lowers crude oil prices (which are traded in dollars).

In addition, the European Central Bank (ECB) is fighting slow economic growth throughout the European Union (EU),[16] and is finally cutting its interest rates and considering its own QE, which consists of selling the Euro and buying large amounts of foreign assets, thus weakening the value of the Euro. This large QE at ECB and tighter money at the Fed will send the U.S. dollar even higher and oil prices even lower.

How Do All These Factors Affect Future Oil Prices?

To sum up, the major factors that determine average oil prices have all been pointing in a downward direction. In fact, in 2015, there is likely to be a growing surplus of oil on world markets created by rising oil production in the United States, Canada, and a few other countries. The result has been falling oil prices.[17] On a yearly basis, the world oil supply is about two million barrels a day above demand, according to the January 31, 2015, *The New York Times*. While all four factors listed thus far are still responsible for low oil prices, the major new development remains the United States, Canadian, and Brazilian surge in nonconventional oil production.

Low oil prices have created winners and losers. Winners include the global economy as a whole, consumers, especially U.S. consumers, and net importing countries. Losers include oil investors, net oil exporting countries, oil producing companies, and the workers that have been laid off by these oil exporting companies and countries. This Paper will discuss:

a) Why are the winners benefitting?

b) Why are the losers suffering?

c) How are the winners and losers responding?

d) How will their responses affect oil prices down the road?

In January 2015, the leading economists attending the World Economic Forum—including many Nobel Prize winners—argued that the global economy would be a big winner from the low oil prices. They said the economy would receive a significant boost from low oil prices in 2015. How significant? They compared it to the monetary policy equivalent of the Fed's huge quantitative easing. The International Monetary Fund (IMF) calculates that the 55 percent reduction in oil prices from its mid-2014 peak boosts global GDP by over 1 percent. Since the global economy as a whole is still relatively weak since the global financial crisis and the great recession, this macroeconomic "shot in the arm" thankfully prevents the deflating global economy from slowing down even more.

PART II. U.S. QUEST FOR OIL INDEPENDENCE

At first glance, the U.S. economy as a whole is a big winner from low oil prices. Newspaper headlines read, "America Near Energy Independence," or "America: The New Saudi Arabia." U.S. consumers are also winners. The benefits of low oil prices in the United States are readily apparent on Main Street. Until recently, regular gas in Tampa, FL, was under $2 a gallon as of late-January 2015. More broadly, the nation's 200 million drivers will save an average of $750 this year, thanks to lower gas prices. Combined with lower heating bills, this will put an extra $20 billion in the pockets of U.S. consumers. All that extra money translates into more consumer spending that fuels U.S. economic growth. *Oxford Analytics* calculates that the U.S. economy would grow a full percentage point faster than when oil prices were at their recent peak in mid-July 2014.

Is it time, therefore, for a victory parade? Quite the contrary. In economics, appearances can be deceiving. If we dig a little deeper, we discover that all is not well with U.S. oil producers. U.S. shale oil producers are learning about international business. They are also learning that the international oil market is cyclical. Back in mid-2014, oil prices peaked at $115 a barrel. During this Phase One, the market share of U.S. shale oil producers was on the rise. Profits were high. It seemed like the best of times. Unfortunately, those heady days were short-lived.

Before long, U.S. shale oil producers were in a painful Phase Two and the victim of their own success. The more they produced, the more oil prices fell, and the more their profits got squeezed. U.S. oil production hit 9.2 million barrels a day in January 2015—a 31-year high. Unfortunately, this surge in oil production was totally mismanaged and helped to create a huge oil glut.[18]

To be fair, U.S. shale oil producers are not the only ones creating this glut. The Bank for International Settlements correctly argues that heavy financial trading on oil futures is also to blame for pushing down oil prices and creating this boom and bust cycle. In 2005, daily oil futures volume in oil was only 3.4 times global demand. In 2015, daily oil futures volume in oil is over 20 times global demand.[19] In addition, a strong dollar and a weak global economy were also weakening oil prices. That said, there is no question that in early-2015, the extraction of U.S. shale oil is fuelling an oil glut. The crude oil market is now over-supplied by as much as 2 million barrels a day. As a result, crude oil inventories are now at an 80-year high for this time of the year.[20]

In early-January 2015, the price of oil plunged below $50 a barrel—and nearly a 6-year low.[21] Can

this surge in U.S. oil production last? That question turns on the so-called break-even cost of U.S. oil. The critical question, therefore is: How low do oil prices have to go before U.S. shale oil cannot make a profit and is priced out of the market? Some estimates put the break-even cost for U.S. shale at $60-$70 a barrel. Other estimates say the break-even cost is $50 a barrel. Actually, the question is difficult to answer because the cost of shale oil varies, depending upon where it is produced. U.S. shale oil producers in Eagle Ford, TX, can compete with the Saudis at a lower break-even point than U.S. shale oil producers in Bakken, ND, or Permian Basin, TX.

The volatility in the market makes it difficult to locate the oil market's floor at this point. However, one thing is clear: The oil sell-off is already having an impact. While a durable price recovery may not be imminent, signs are mounting that the tide is turning. The most tangible price effect is on the supply side. In this sense, a low oil price is performing its role in discouraging more supply. While there is no evidence yet of an actual reduction in overall global oil production, there is plenty of evidence of cutbacks in spending and investment that will ultimately affect the supply in the future.[22] For instance, in 2014, discoveries of new oil dropped to their lowest level in at least 2 decades. That translates into tighter world oil supplies and upward pressures on oil prices in the future.[23]

With prices falling below $50 a barrel, a business as usual approach is a nonstarter because this would put oil companies in the red. U.S. oil companies have been forced to adapt to the new low oil price environment. Toward that end, oil companies have been cutting their budgets and postponing or cancelling "cash negative" new projects, while, at the same time, trying

to be more efficient in squeezing the most out of their fields already in production.[24]

In this regard, the market is especially excited that BHP Billiton and BP both cut their number of rigs by 40 percent.[25] The drilling rig count in the United States has fallen 24 percent in the last 4 months from a high of 1,609 to 1,233.[26] In early February, Baker Hughes, the oil services group, announced that the number of its rigs drilling for oil in the United States fell to the lowest level since December 2011, and down 29 percent from its October 2014 peak. HIS Energy reported that daily utilization rates for its state-of-the-art ultra-deep-water rigs hit a 15-year low in January 2015.[27] In addition, Conoco and Occidental both cut capital spending by 33 percent.[28]

Traders on Wall Street took this 40 percent drop in the number of active rigs drilling for oil and the large cuts in capital spending by major oil companies as two positive indicators that actual cuts in oil production and higher oil prices are on the way. As a result, Brent crude oil jumped 21 percent in early February from its closing low of January 13. Oil had not risen this fast since March 2009. Is this rally the start of a bull market?

There is no question that the conditions that will ultimately propel oil prices higher are now visible, but it will take a while to unwind the two million barrels a day of oil glut. U.S. oil production is still 9.2 million barrels a day—a 31-year high. Oil inventory is still at an 80-year high for this time of the year.

In addition, signs of a demand response to low oil prices remain elusive. On Wall Street, many traders tend to harbor negative sentiment towards betting on high oil prices after losing billions the last time that bet failed. So many traders can be expected to push down

oil prices, at least for a while. On Main Street, drivers do not commute twice a day to work just because gas prices are lower. In addition, fuel efficiency standards are being tightened in many major car markets. As we will see in Part IV of this Paper, the demand for oil remains weak in many net oil importing countries.

In assessing the corporate response to low oil prices, the good news is the oil companies are maintaining market share and providing their shareholders with dividends. The bad news is low oil prices forced Schlumberger to cut 9,000 jobs and Brent Hughes to cut 7,000 jobs. At a time when the skill-sets of older oil technicians are in short supply, this approach is arguably short-sighted.

In this regard, Eni Chief Executive Officer (CEO) Claudio Descalzi is correctly concerned that the corporate approach to cutting costs and capital spending could result in a lack of oil production in 4 or 5 years and a dramatic rise in oil prices. This short-sighted corporate mismanagement will arguably create the conditions for a dramatic rise of oil prices, possibly as high as $200 a barrel. Instead of this boom and bust scenario, Descalzi persuasively argues that we need stability.[29] If countries like Norway have an oil stabilization fund to stabilize oil prices for that country, why not have a United Nations (UN) global stabilization fund to stabilize oil prices for the world? Instead of oil prices triggering boom and bust, we could have international financial buffers to soften the blows. Descalzi recommends a "central bank of oil, like we have in the financial system, to give stimulus and to stabilize [prices]."[30]

How bad is the situation? BP Chief Bob Dudley argues that low oil prices have created the worst slump the oil industry has faced since 1986. Wood McKen-

zie analysts go a step further and warn that low oil prices pose the biggest threat to oil and gas industry earnings and financial solidity since the financial crisis of 2008.[31] In this regard, it is important to understand that oil is used as collateral in many transactions. In fact, the U.S. shale revolution was largely financed by debt that must now be repaid. As a result, lower oil prices could easily spill over into financial turbulence.[32] The cuts that oil companies are now making to survive could hurt other companies and other areas of the economy.[33]

The great New York Yankee catcher Yogi Berra would call this "déjà vu all over again." Back in the summer of 2007, the price of mortgage bonds and related derivatives fell. U.S. Fed Chief Ben Bernanke dismissed it as an isolated problem. He said these would be relatively small losses on subprime mortgages and limited to $25 billion.[34] Well, guess again. The financial losses were 100 times higher and spread to the whole financial system.

Chris Flanagan, head of Securitization at Bank of America Merrill Lynch, recently compared the trajectory of the Brent crude oil price to the index of subprime mortgage derivatives in 2007. He found the patterns almost identical to the origins of the global financial crisis. As Flanagan puts it, "We may have seen this movie before."[35] Similarly, Timothy Lane, deputy governor of the Bank of Canada, told an energy conference in Wisconsin that central bankers are "alert to the possibility that financial linkages could transmit stress from oil markets to the financial system."[36]

So is it time to press the panic button? No. That is because there are a number of reasons why low oil prices will arguably not trigger another financial crisis. First, as we said earlier, oil prices have a positive

macroeconomic impact on the global economy. Second, the regulators are not asleep this time. Canadian banks are doing stress tests to see what happens if oil falls to $35 a barrel. Third, regulators have already forced financial institutions to build up bigger financial buffers to soften the blows that the stress tests are creating.[37] Fourth, regulators are on the lookout to make sure oil is not used as collateral for nonoil related financial deals. Fifth, aside from oil companies, 2014 was a good year for stock market earnings. Sixth, the economy is diversified, therefore, the strong revenues behind the nonoil companies reflect the underlying strength of a U.S. economy that does not just depend on oil sales. That said, there is no reason for financial complacency.

PART III. IMPACT ON OIL REGIMES IN THE CENTRAL REGION

Now let us look at Saudi Arabia and the other Gulf Cooperation Council (GCC) oil producers and compare them to U.S. oil producers. Saudi Arabia and the other OPEC oil producers in the Middle East are in a bitter price war with U.S. and Canadian oil producers.[38] OPEC members told BP CEO Bob Dudley that Saudi Arabia and its partners wanted to "fundamentally test" the oil market to see if U.S. shale oil producers who had led America's output boom could continue pumping crude oil at lower prices. Bob Dudley's comments point to a battle of wills ahead as Saudi Arabia and its oil partners wait to discover if their decision not to cut oil production knocks out higher cost production in the United States and Canada. [39]

Who is winning this price war? In this battle of wills, the United States and Canada flinched first.

North American drilling activity is dropping off more sharply than elsewhere in the world. For instance, Baker Hughes saw a 15 percent drop in the number of rigs drilling for oil in the U.S. from October 2014 to January 2015. In contrast to the United States, Middle East state-owned groups are much more resilient. In fact, Mideast oil companies have very few reductions in oil rigs. For instance, there was a drop of just one oil rig in Saudi Arabia, from 67 in October to 66 in December.[40]

This sharp difference becomes clear if we look at Schlumberger, Halliburton, and Baker Hughes, the three largest international service companies that support oil and gas producers with activities such as drilling, completing, and analyzing wells. All three say their activities are dropping off much more sharply in North America than in the Mideast. Spending by Schlumberger's customers, which include both the major and smaller companies, is dropping by 25-30 percent in North America. Similarly, Halliburton is reportedly cutting spending by 25-30 percent in the United States. By contrast, corporate spending in the Middle East has not fallen much at all. A survey of oil companies' capital spending intentions published by Barclays earlier in February 2015 paints a similar picture. Capital spending in the Mideast has only been cut by 1 percent. In contrast, U.S. capital spending is on track to fall anywhere from 14 percent to 30 percent.

The faster downturn in the North American industry is in part explained by the higher costs of U.S. and Canadian shale production compared with oil from the Middle East. However, there are particular features of the U.S. shale industry that enable it to react faster. First, the individual investments are small, making it more flexible. Second, the small and medi-

um-sized companies that have led the U.S. shale boom have been running large cash deficits and relying on constant inflows of debt and equity capital to finance their spending. Third, the production decline rates for shale wells are much steeper than for conventional oil: daily output can fall 65 percent in the first year.

As we move from the costly unconventional extraction of oil in the United States and Canada to the less costly conventional oil in the Central Region, a key question is: Are countries in the Central Region with largely conventional extraction of oil also at risk from low oil prices? The short answer is that some of them in the short run are less affected from low oil prices than others. The Saudis, the United Arab Emirates (UAE), and Kuwait are arguably in the best shape to ride out the low oil prices. In contrast, Libya and Iran are more vulnerable.

Why the differences? Some of the OPEC countries are in a better financial position to withstand the impact that low oil prices are having on their national budgets. Qatar and UAE became less vulnerable by diversifying their economies and not relying on oil as a "one trick pony." As a result, they were able to reduce their break-even price for a balanced budget. The other way these countries became less vulnerable was by saving their wealth rather than squandering it. For example, UAE's sovereign wealth fund in 2013 was $773 billion, or a massive 190 percent of GDP.

Of course, many of the OPEC countries have spent lots of money on national development plans and extensive welfare systems. As a result, a country like Saudi Arabia is now running a budget deficit, but the Saudis have $753 billion in reserves to cover government spending commitments for almost 3 years. Similarly, Kuwait has $548 billion in reserves and assets

to stem the tide. However, Kuwait is less threatened by low oil prices because its fiscal break-even price for a balanced budget is so low—circa $60 a barrel. The point is, all the countries can weather the storm of low oil prices for a prolonged period of time with no ill effects.

Admittedly, Bahrain and Oman—two of the smaller, more financially modest GCC states—have a more difficult time with the low oil prices. However, both of them have up to a $10 billion line of credit with the GCC if they need it. Bahrain and Oman are also using the low oil price environment as an opportunity to rein in their fiscally wasteful fuel subsidy systems. Oman has doubled its gas prices and Bahrain also has plans to reduce fuel subsidies.

Iran is another Mideast country vulnerable to low oil prices. Iran's break-even price for a balanced budget was $125 a barrel. With oil prices currently under $50 a barrel, Iran has been struggling to balance its budget. To make matters worse, Iran is still facing sanctions that limit both the quantity of its exports as well as access to credit. Its foreign exchange rate has plummeted, which makes its imports even more expensive. As a result, Iran is also burning through its foreign reserves. How much? The good news (for Iran) is that Iran has diversified its economy and now depends less on oil. A weaker exchange rate will also stimulate these nonoil exports.

Finally, what if low oil prices remain relatively low for 5 years or longer?[41] This could happen if the U.S., Canadian, and Brazilian unconventional extraction of oil keeps accelerating, sanctions against Iran continue, OPEC refuses to cut its production, and all the major economies in the world go into an extended period of deflation and recession. Libya and Iran, already in bad

shape, would get worse. Iran might follow Libya into civil war. Qatar and UAE would exhaust donor aid and see their budget deficits rise. The Saudis, UAE, and Kuwait would be the last to feel the heat, but even these three countries would face rising social unrest.

During the last Arab Spring, petro-states stayed politically popular at home by dipping into their budget surpluses in order to placate their potentially rebellious populations with lavish social spending. That kept any internal protests manageable. The "perfect storm" would be for a future Arab Spring style societal disruption to occur after the petro-states have used up their oil stabilization funds, sovereign wealth funds, and GCC loans offsetting financial losses from low oil prices. At this point, many of the petro-states would be saddled with high budget deficits and thus lack the ability to use social spending again to placate their potentially rebellious populations. That will make social unrest and political instability even more likely. While the chances of the confluence of all of these negative factors happening simultaneously is remote, this perfect storm cannot be ruled out. At the end of this Paper, I recommend an early warning system (EWS) of last resort to address this social, political, and financial nightmare.

PART IV. IMPLICATIONS FOR THE WIDER CENTRAL REGION

We have now explored the international oil market as a whole and compared and contrasted the impact of low oil prices on the producers of oil in the United States and the Central Region. In other words, we looked at the oil suppliers, but what about the countries in the Central Region that are net importers of the

oil? As a group, do these buyers offer any signs of a demand response to low oil prices? The short answer is that these net importers of oil in the Central Region behave much like their counterparts in the rest of the world. That is because the usual benefits of lower oil prices—such as increased household disposable income and reduced input costs—have been largely offset by weak underlying economic conditions.

If we break down the economic factors of this net oil importing group, the rise of Daesh has disrupted traditional trade routes and caused economic growth to plummet in many of these countries. Internally displaced people and refugees have also been a burden on many of these countries. Many of these countries have also increased taxes to pay for higher military spending to fight Daesh. That equates to less purchasing power for oil for consumers in these net oil importing countries.

In addition, these countries share the same behavior of many of their net oil importing counterparts in the rest of the world. Their weak foreign exchange rate against a strong U.S. dollar at least partially dilutes some of the benefits of importing oil at lower prices. In addition, oil producers have less income and tend to buy less from these net oil importers as a result. Oil producers like Russia also have less money to pay for guest workers from Central Asia. They either send the guest workers back home to Central Asia or they cut their wages. Either way, these countries have less money to spend on oil. Finally, subsidy cuts and mounting deflationary concerns, like the other factors mentioned, have kept the demand for oil weak thus far. We will drill down in these two areas in the succeeding pages.

Of course, no two countries in the Central Region have exactly the same problems. As a result, some countries benefit more from low oil prices than others. Countries most dependent on oil imports gain the most from low oil prices. The cost of their oil imports fall, thus improving their balance of payments.

On the international front, lower oil prices helped to improve the terms of trade of net oil importers. Many were financially vulnerable because of their high current account deficits and their weak foreign exchange rates. In essence, low oil prices are an involuntary transfer of financial resources from oil producers to formerly financially vulnerable countries cited previously. That enhances financial stability of these countries in their balance of payments.

Even so, what is the impact of low oil prices on the fiscal balance sheets of some of the financially vulnerable net oil importers? For starters, many of these countries have previously been running high budget deficits because of high fuel subsidies when oil prices were high. Lower oil prices provide net oil importers a golden opportunity to slash fuel subsidies.

Egypt has taken full advantage of these opportunities. Egyptian President Abdel Sisi has pushed through cuts in fuel subsidies—steps no previous Egyptian government dared to make—and is planning to do more. Cheaper oil, therefore, serves to make otherwise painful subsidy cuts less risky. These economic reforms paved the way for GDP to rise with such a boost that Egypt's GDP was almost 7 percent in the 4th quarter (September-December) just as Sisi confronts an Islamic opposition that is trying to exploit socio-economic unrest. On the monetary side, low oil prices are also beneficial and helped Egypt reduce inflation from 11.8 percent in October to 10.1 percent in

December 2014. Lower inflation in turn afforded the Central Bank of Egypt (CBE) an opportunity to announce a 50-basis-point cut in interest rates on January 15th to support growth. The move was the first change in interest rates since the CBE implemented a 100-basis-point increase in July 2014.

In contrast, Pakistan is struggling with fuel shortages. The banks recently refused to extend further credit to Pakistan State Oil (PSO), the state-owned fuel importer, to pay for imports beyond its existing credit of $2 billion. PSO has also failed to collect money it was meant to receive from privately run electricity generation companies, who in turn are owed large payments by government-owned power distribution companies. This long-standing fuel problem in Pakistan became a crisis when the Pakistan government made the mistake of trying to maintain tight control of spending on oil imports to keep within spending limits agreed to with the IMF under a loan program.

PART V. WINNERS AND LOSERS OUTSIDE THE CENTRAL REGION

While this Paper focuses on the U.S. oil producers and oil producers in the Central Region, low oil prices have also had an impact on other countries around the world. If we look north, it is clear that Canadian oil producers face similar problems as U.S. oil producers. Like the weak U.S. shale producers, over half of Canada's total oil production now comes from costly Canadian oil sands that are at risk from low oil prices. In fact, Canadian oil sand producers have some of the world's highest energy production costs. Estimates put the break-even cost for Canadian oil sand producers between $75 and $85 a barrel. Lower prices, there-

fore, dent profits. That forces some operators to cut back on spending plans and put new projects on hold. As in the United States, larger operators can absorb lower profit margins by spreading risk among their global operations. In addition, the impact of the fall in global oil prices on Canada has been softened by a stronger U.S. dollar and a lower differential between the price of cheaper Alberta crude oil and U.S. West Texas Intermediate (WTI) crude oil.

If we look south, we see that Mexico has a diversified economy and is less vulnerable to low oil prices. Even so, its oil output has declined, and it is now opening up its economy to foreign direct investments to increase its oil production. Its problem is timing. A low oil price environment normally discourages oil discovery and exploration. Thankfully, Mexico has a hedging strategy and an oil stabilization fund to protect its budget, but a prolonged period of low oil prices could eventually hurt Mexico as well.

If we look further south, Venezuela appears to be in the worst shape of all the OPEC countries reeling from low oil prices. It has a break-even oil price for a balanced budget of $100 a barrel, in part because of huge fuel subsidies that result in gas prices at the pump of only 5 cents a gallon, the cheapest in the world. With oil prices currently half that amount, the government is struggling to make ends meet, but there is not much hope in the short run. The government made no attempt to diversify and now is 95 percent dependent on oil in its one trick pony economy. Not surprisingly, GDP is contracting at 2.5 percent and its inflation rate is 60 percent. To make matters worse, it has only $20 billion left in reserves to balance its payments. In early-December 2014, Venezuela's President Nicolas Maduro finally cut government spending by 20 percent. Unfortunately, it is too little, too late.

Of the three major countries (the United States, Canada, and Brazil) responsible for the oil surge and subsequent oil glut, Brazil is arguably the least vulnerable to low oil prices. Brazil's Petrobras officials claim its offshore deep-water pre-salt oil is profitable anywhere within a range of $41 to $57 a barrel. That said, even Petrobras would also find it tricky at times to sustain its discovery and exploration in a prolonged period of low oil prices. As for Argentina, its economy has struggled with an inflation rate of 38 percent in 2014. The good news is that Argentine consumers certainly benefit from lower priced oil imports. The bad news is that Argentine businesses are hurt by low prices for their food exports.

While this Paper has focused on OPEC countries in the Central Region, there are plenty of non-OPEC oil producers that are also at risk from low oil prices. Russia is arguably the most at risk. It made no attempt to diversify its one trick pony economy, so it now almost totally depends on oil. In addition to low oil prices, Russia's aggression in Ukraine means it also has to struggle with economic sanctions. Not surprisingly, Russia is now reeling from rising budget deficits, a weak ruble, and a 4 percent contraction in GDP. Fortunately for Russia, it has a financial buffer—$430 billion in reserves to balance its payments. Nevertheless, any prolonged period of low oil prices would put even this financial buffer at risk.

If we move west of Russia, we see that low oil prices are more of a mixed bag for Western Europe. West European consumers benefit from low oil prices. However, a weak Euro foreign exchange rate against the strong U.S. dollar dilutes some of the benefit of importing lower priced oil. In fact, Western Europeans are not getting enough of a boost from low oil

prices to overcome the recent IMF downgrade of their prospects for GDP growth in 2015. In addition, the EU used to be a big oil producer. However, EU oil production has fallen by 50 percent since 2002. The EU now imports 85 percent of its oil supply.

Interestingly enough, Norway's problem is similar to Mexico's problem: falling oil output. It must shift its focus from the North Sea and the Norwegian Sea to the more promising Barents Sea. Unfortunately, the low oil price environment is already causing Statoil to delay the Johan Castberg discovery and to cut spending plans on other costly projects as well. That said, Norway is still in relatively good shape with a breakeven price for a balanced budget and an $838 billion sovereign wealth fund to ride out low oil prices for a while.

If we "pivot" to Asia-Pacific, we see that Australia is a major commodity exporter when it comes to iron ore, coal, and liquefied natural gas, but a net importer of oil. Unfortunately, the rise of U.S. energy production and China's economic slowdown has significantly contributed to Australia's falling commodity exports, thus worsening Australia's current account deficit in its balance of payments and pushing down the Australian foreign exchange rate against the U.S. dollar. On the positive side, cheaper imported oil is a boost to household spending power in Australia. In fact, cheaper imported oil prices have already benefitted Aussie consumers to the tune of $2 billion to $3 billion. That said, a weaker Australian foreign exchange rate dilutes some of the benefits of cheaper imported oil.

If we head north, we see that Japan, like the EU, is a net oil importer. As a result, Japanese consumers benefit from low oil prices. However, like the EU, the weak foreign exchange rate of the yen against the

strong U.S. dollar also dilutes some of the benefit of importing lower priced oil. And like the EU, Japan is not getting enough of a boost from low oil prices to overcome the recent IMF downgrade of its prospects for GDP growth in 2015.

In addition, the Bank of Japan (BOJ) and the ECB were planning to roll out large quantitative easing programs to fight off deflation, but now lower oil prices are already deflating prices. Will low oil prices derail the BOJ's and the ECB's plans to counter deflation? That depends on how long low oil prices will last. If oil prices remain low and the BOJ and the ECB dither, low oil prices could accelerate deflationary pressure already weakening GDP in Japan and the EU. At a minimum, the uncertainty over how low oil prices will go and for how long complicates monetary policy at the BOJ and the ECB.

China is also ambivalent about low oil prices. On the one hand, China has been trying to move its economy from an over-reliance on exports and investments and towards a more balanced economy that puts more emphasis on consumer spending at home. However, China is the fourth biggest oil producer in the world and low oil prices result in less revenue for the government. China's inflation rate is just 1.6 percent, close to a 4-year low. If oil prices continue to remain low, the Chinese central bank would soon share the same concerns about deflation as the BOJ and the ECB.

Finally, Africa is another region affected by low oil prices. For instance, Libya is especially vulnerable to low oil prices. Libya's fiscal break-even price for a balanced budget is $111 a barrel, one of the highest in OPEC. With oil prices currently half that price, it will not take long for Libya, an OPEC country plagued by

civil war and now saddled with the cost of two rival governments, to burn through its $104 billion in reserves. Nigeria is another African country negatively affected by low oil prices. Because of instability, corruption, and policy uncertainty, Nigeria faces a double whammy: stagnant oil production plus low oil prices for this smaller amount of oil. As a result, revenue has plummeted, and Nigeria has been forced to lower its oil price assumption to $65 for its budget.

CONCLUSION

If we look at the global oil market from a U.S. perspective, it is clear that it costs more for shale oil producers in the United States than for conventional oil producers in Saudi Arabia. The challenge, therefore, is the sustainability of this U.S. output. For their part, almost all U.S. shale oil producers put on a brave face. They claim there will be no actual reduction in U.S. shale oil production. However, it is fair to say that some U.S. shale oil producers will find the low oil price environment more threatening than others.

In any event, it stands to reason that the rate of growth in shale oil output will at least slow down the longer the low oil price environment continues. In fact, as we have seen, some U.S. shale oil producers are already scaling back their spending plans for additional drilling. Therefore, we can expect a slower rate of growth in U.S. shale oil production even if there is no actual reduction in U.S. oil production. In essence, U.S. shale oil producers are in a de facto price war with the Saudis. At the November 2014 OPEC meeting, the Saudis persuaded the rest of OPEC not to cut production. The Saudis are betting that low oil prices are more threatening to the upstart U.S. shale oil pro-

ducers than to their national budget and those in the rest of OPEC. In other words, the Saudis feel they can price U.S. shale oil producers out of the market.

Are the Saudis right? The amazing growth rate of U.S. shale oil producers will likely slow down. However, U.S. shale oil producers are "hard-core" and appear committed to maintaining their production gains and market shares of the past few years. They will fight to avoid any actual reversals in these gains. That said, there will be casualties as in any war. Bigger, more efficient U.S. shale oil producers will force out or absorb weaker U.S. producers, but this "creative destruction" happens every day in America's free market.

In 2015, upward pressure on oil prices from the drop in oil rigs, the fall in capital spending, etc., will slowly but steadily lead to a slowdown in the amazing growth of U.S. oil production. Even so, there is unlikely to be any sharp reduction in U.S. oil output that would cause oil prices back to their mid-2014 peak. That is because it takes time to unwind the surge of ongoing U.S. oil production, which is at a 31-year high. Commercial oil stocks now have a 44-day inventory, the highest level since 1931. Downward pressure comes from signs of a growing market in floating storage. The steeper curve from the low spot market price to the higher future market price also attracts Wall Street traders to opt for "contango,"[42] or arbitraging crude oil. This "storage play" involves buying oil at low prices in the spot market and putting it into storage, while, at the same time, selling a forward derivative contract (at a higher price) to lock in a profit. All of this prolongs the sell-off.

In the short term, expect price volatility from a market that reacts up or down to every buy or sell signal. By the second half of 2015, upward pressure on

prices will gain momentum and strength. Rebalancing the oil market may begin to occur in the second half of 2015, but the market is not likely to clear until 2016. However, this rebalancing does not necessarily equate to the *status quo ante*. Quite the contrary, it is clear that the market is exploring uncharted waters. The oil market is undergoing both a historic structural change with new technology (from unconventional extraction of oil) as well as a cyclical change.[43]

In addition, this analysis shows that countries that refused to diversify their economies are the most vulnerable to a low oil price environment. Those oil exporting countries like Saudi Arabia, which took advantage of high oil prices to create oil stabilization funds or sovereign wealth funds, are not threatened by the current low oil price environment. They can tap into these financial buffers to stabilize their economies and ride out the low oil price environment without much difficulty. U.S. companies are in a weaker position, but they can still compete with the Saudis by using profits from their global operations to offset losses in their shale oil operations. They can also benefit from mergers and acquisitions of smaller and weaker companies with more localized operations. Finally, this analysis shows that populism is a recipe for financial disaster. Populist countries that squander wealth with fuel subsidies have no way to cope with a low oil price environment.

RECOMMENDATIONS

At a time when the United States is seeking cooperation with Saudi Arabia and the rest of the GCC to counter Daesh, the United States and Saudi Arabia are in a bitter price war. The Saudis feel they can price

U.S. shale oil producers out of the market. U.S. oil companies are responding. The coalition will fail if the United States and the GCC are determined to run each other's oil companies into the ground. A successful wartime alliance will fail if it rests on a reservoir of U.S.-Saudi animosity and resentment in the oil market. The time to set up institutions to avert these price wars or to create energy banks to mitigate them when they come is long overdue.

At the World Economic Forum, Total CEO Patrick Pouyanne said Total is scaling back its oil operations. As Pouyanne put it, "I can come back in 1 year—when prices come back."[44] That may work for Total, but a lot of oil companies will be out of business in 1 year unless they get some help. In this regard, Eni CEO Claudio Descalzi says the main problem is the availability of financing for these oil companies fighting for survival. Descalzi recommends a central bank for oil to stabilize oil prices and avoid boom and bust cycles.[45]

Descalzi makes a persuasive case on the need for such a bank as a lender of last resort for oil companies. However, a reactive bank that bails out oil companies in distress is not all that needs to be created. What also needs to be created is an international oil institution that is pro-active as well. Why is this necessary? If a tropical storm begins to gather hurricane-level strength off the coast of Florida, the Federal Emergency Management Agency warns us. If a ballistic missile is launched somewhere in the Middle East, a shared EWS can immediately alert affected nations while that missile is still airborne. But if a global oil crisis is lurking around a corner and threatening the U.S. oil industry . . . nothing happens.

Instead of a triggered warning that allows for avoiding catastrophic consequences, the oil crisis simply hits oil companies, taking down countless individuals' livelihoods with it. If the current threat to U.S. energy companies has taught us anything, it is that we need an international energy EWS that can alert policymakers to pending financial crises in the international oil industry. In large part, the failure of our global financial institutions to sound alarm bells well before the boom and bust of U.S. oil companies is the result of a flawed mind-set that says this time is different.

Failing to give credence to the commonalities of oil crises, economists and institutions of this mind-set instead conclude that we cannot predict crises because a different, exceptional factor is in play each time. That has left the International Energy Agency (IEA) and other organizations reacting to, rather than trying to avert, crises. In contrast, many economists and institutions have been able to predict and warn of recent economic crises. Their alarm flowed from their use of a "signals approach." They looked at numerous financial crises in the past 2 decades and saw disturbing early signs of financial vulnerability common to all of them. Most importantly, they saw many of these same financial risks that lead to boom and bust cycles.

The same EWS is even more urgently needed now. Fortunately, IEA does offer general warnings. Even so, a much greater shift toward a signals approach and toward a more comprehensive EWS is needed in the international energy industry.

- An oil EWS would monitor economic indicators that history reveals are precursors of boom and bust oil cycles.

- An oil EWS would take into account extenuating economic circumstances and political factors that affect energy risk. Qatar's large public borrowing requirements, for instance, would be considered a dangerous economic indicator if we did not also factor in the Qatari government's investment in doubling the production and export of liquid natural gas.

By accounting for all these indicators and factors, an EWS would identify a coherent story line of rising financial vulnerability for oil companies where appropriate. Each economy's circumstance is different, but there are commonalities that allow us to be more effective in predicting oil crises. By communicating simple but comprehensive story lines to policymakers, an oil EWS would do more than simply ring alarm bells. Economies generally crash in the same fashion as dominos fall. By identifying key factors and decision points along the way as economic trends unfold, an energy EWS would provide guidance—allowing policymakers and oil companies to work together to change the alignment of dominos, as it were, and avert financial crises. For instance:

- An oil EWS would encourage U.S. oil companies to diversify their product lines so they could become less vulnerable to low oil prices. The role models are Chevron and Exxon Mobil. They have refining and chemical businesses that provide financial buffers to offset financial losses in oil production when oil prices are low.
- An oil EWS would also encourage net oil importing countries to take advantage of the opportunity to reduce their fuel subsidies in order to strengthen their fiscal balance sheets. For

those net oil importing countries that have already eliminated fuel subsidies, now is a golden opportunity to redirect financial resources into the education and training of their domestic workforce and boosting national savings.

We have the historical knowledge needed to implement an energy EWS—most logically at the IEA. However, we need economists who know their financial history and who are committed to a "signals approach" rather than economists who keep saying "this time is different." Nothing short of a wholesale culture change in our global financial institutions is required, one that recognizes that the urgency of the times demands an early warning of oil crises—and that we are capable of providing it.

ENDNOTES

1. That said, inflation is still a problem in a few isolated emerging market economies.

2. Some of this weak demand also reflects more efficient factories, which require less energy to run them. Demand for oil is also relatively weak because trucks, buses, and ships have shifted to natural gas and other alternatives.

3. Nicole Friedman, "Oil's Descent Deepens as Demand Fears Grow?" *The Wall Street Journal*, September 11, 2014.

4. Jesse Colombo, "Nine Reasons Why Oil Prices May be Headed for a Bust," *Barrons*, June 9, 2014.

5. Ed Crooks, "US Shale: What lies beneath," *Financial Times*, August 26, 2014.

6. *Ibid*.

7. Friedman, "Oil's Descent Deepens as Demand Fears Grow?"

8. *Ibid*. While China is still growing at 7.4 percent, that is a far cry from China's double digit growth in the past.

9. Colombo.

10. *Ibid*.

11. *Ibid*.

12. Nicole Friedman, "Oil Prices Tumble as Demand Flags," *The Wall Street Journal*, August 13, 2014.

13. *Ibid*.

14. *Ibid*.

15. *Ibid*.

16. Average GDP growth in the Eurozone in 2014 was below 1 percent (0.8 percent). GDP growth in France (0.4 percent) and Italy (0.4 percent) pulled it down and GDP growth in Germany (1.4 percent) and Spain (1.3 percent) lifted it a bit. See *The Economist*, February 7, 2015. However, the International Monetary Fund (IMF) said there was a good chance that the German economy would contract in 2015.

17. For an alternative view that geopolitical upheavals could drive oil prices up in the future, see Anjli Raval, "Oil Investors Bet on Future Supply Risks," *Financial Times*, August 21, 2014. Another factor that could put upward pressure on prices in the future is the oil skills shortage. See Guy Chazan, "Terrifying Oil Skills Shortage Delays Projects and Raises Risks," *Financial Times*, July 16, 2014.

18. Not to be outdone, Iraqi oil production surged to a 35-year high despite the war against Daesh. Neil Hume, "Oil advances on U.S. slowdown hopes," *Financial Times*, February 2, 2015.

19. Neil Hume, "BIS Says Financial Flows Partly to Blame for Oil Collapse," *Financial Times*, February 7, 2015.

20. Anjli Raval, "Oil Rallies as Producers Cut Drilling and Spending," *Financial Times*, February 6, 2015.

21. See Gregory Meyer and Anjil Raval, "Brent Crude under $50 a Barrel," *Financial Times*, January 7, 2015.

22. International Energy Agency (IEA) Report, January 16, 2015.

23. Ed Crooks, "Discoveries of New Oil and Gas Reserves Drop to 20-Year Low," *Financial Times*, February 15, 2015.

24. Christopher Adams and Michael Kavanagh, "BP Chief Warns of Oil Industry Slump," *Financial Times*, February 3, 2015.

25. Jamie Smyth and James Wilson, "BHP Cuts Shale Investment Amid Drop in Oil Price," January 21, 2015.

26. Neil Hume, "Crude Climbs as Oil Majors Cut Spending," *Financial Times*, February 3, 2015.

27. Christopher Adams and Michael Kavanagh, "Oil Projects Worth Billions Put on Hold," *Financial Times*, January 14, 2015.

28. Anjli Raval, "Oil Rallies as Producers Cut Drilling and Spending."

29. Andrew Hill, "Davos 2015: Oil Chiefs Feel Chill Wind of Uncertainty over Price," *Financial Times*, January 21, 2015.

30. *Ibid*.

31. Christopher Adams and Ed Crooks, "Battered Energy Groups Brace for Spending Cuts," *Financial Times*, January 25, 2015.

32. See Sandile Tshazibana, "Oil's Collapse May Fuel the Next Financial Crisis," February 1, 2015.

33. John Authers, "Cost of Cheap Oil on U.S. Earnings Revealed," *Financial Times*, January 30, 2015.

34. Gillian Tett, "Finance Can Cope with Cheap Oil," *Financial Times*, January 15, 2015.

35. *Ibid*.

36. *Ibid*.

37. *Ibid*.

38. See Yaroslav Trofimov, "Analysis: Oil Price Drop Adds New Element to Middle East Tensions," *The Wall Street Journal*, December 2, 2014.

39. Adams and Kavanagh, "BP Chief Warns of Oil Industry Slump."

40. This research contrasting the low capital spending by U.S. oil companies such as Schlumberger, Halliburton, and Baker Hughes versus high capital spending by Saudi oil producers comes from Ed Crooks, "Impact of Oil Price Rout Starkly Evident in North America," *Financial Times*, January 22, 2015.

41. See Brenda Shaffer, "How Plunging Oil Scrambles Geopolitics," *The Wall Street Journal*, October 30, 2014.

42. Contango is a situation where the futures price (or forward price) of a commodity is higher than the expected spot price.

43. IEA.

44. Crooks, "Impact of the Oil Price Rout Starkly Evident in North America."

45. Andrew Hill, "Davos 2015: Oil Chiefs Feel Chill Wind of Uncertainty over Price," *Financial Times*, January 21, 2015.

U.S. ARMY WAR COLLEGE

Major General William E. Rapp
Commandant

*****

STRATEGIC STUDIES INSTITUTE
and
U.S. ARMY WAR COLLEGE PRESS

Director
Professor Douglas C. Lovelace, Jr.

Director of Research
Dr. Steven K. Metz

Author
Dr. Leif Rosenberger

Editor for Production
Dr. James G. Pierce

Publications Assistant
Ms. Rita A. Rummel

*****

Composition
Mrs. Jennifer E. Nevil





FOR THIS AND OTHER PUBLICATIONS, VISIT US AT
http://www.carlisle.army.mil/

ISBN 1-58487-686-7





This Publication



SSI Website



USAWC Website