Economic Energy *Cancer*

By Philip K. Verleger, Jr.

In Europe, the cancer has metastasized. It will spread globally.

A parallel exists between economic crises and two health causes of human mortality: cancer and heart attacks. Both afflictions kill. However, how fast one dies from their onset can be very different.

Lehman Brothers' collapse in 2008 was the equivalent of the global financial system having a heart attack. A depression of unimaginable consequences might have followed absent the quick response of the U.S. Treasury, Congress, the Federal Reserve, and the European Central Bank. The relief efforts led by Fed Chair Ben Bernanke and Treasury Secretary Hank Paulson staved off many of the most serious impacts.

Energy crises, in contrast, are more like cancer. Most cancers kill if left untreated. Death occurs slowly, though, in the majority of cases as the disease metastasizes through the body.

The current energy crisis is metastasizing through the world economy, bringing economic disaster to country after country. Sri Lanka's economy has collapsed as the nation cannot obtain needed oil or natural gas. The lights are going out in Pakistan because one-quarter of the country's generating capacity requires liquefied natural gas, a fuel that is now beyond the reach of Pakistani buyers because Europeans have bid prices to record levels in their effort to replace Russian gas. Ultimately, the financial consequence of this crisis is fatal absent radical intervention.

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In France, factory owners are planning to replace gas- or electric-fired furnaces with oil-burning ones. They are doing so because France's nuclear power output, which usually provides 70 percent of the nation's power, is down drastically due to half of the aging plants being taken offline to repair corrosion. Aluminum smelters, which seldom shut down because they take months to restart, are closing in the United States as electricity prices, pushed higher by European demand for natural gas, make operating uneconomic. Germany will likely ration natural gas to consumers and industry this winter as Russian supplies dry up. In the United Kingdom, officials fear blackouts next winter due to power plant shutdowns, and 43 percent of British consumers believe they won't be able to pay energy bills. Japan also faces blackouts this summer and perhaps next winter because most of its nuclear power plants were taken offline after the 2011 Fukushima earthquake and tsunami and have not returned to service.

The energy shortages have begun to cause political disruptions. In early July, the lack of natural gas, gasoline, and diesel fuel in Sri Lanka led to demonstrations that forced the president and prime minister to flee. *The Economist* has identified several other emerging market nations where the limited supplies of LNG and fuel threaten political unrest, including Turkey, Peru, Tunisia, and Uganda.

The instances of power and fuel rationing, extraordinarily high energy prices, and political upheavals are the first symptoms of a serious economic crisis. One need only look to the early 1920s when Germany's inflation and struggle to pay war reparations helped plunge the global economy into a depression that lasted until World War II began.

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Yet the economists looking ahead at the World Bank and many other organizations and forecasting firms seem oblivious to the situation. The World Bank economists updated their econometric analysis of today's situation in the June 2022 Global Economic Prospects. In a section titled "Russia's Invasion of Ukraine, Implications for Energy Markets and Activity," they consulted their models to predict the impact of Russia's aggression. In preparing the projection, they reviewed at least one hundred of the various econometric studies published on energy shocks, asking the following questions:

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- How does the latest energy price shock compare with previous major shocks?
- What are the lessons from previous energy price shocks?
- What are the likely implications of the current energy price shock for global activity?

Citing many econometric studies, the economists offer a bland commentary. Looking back to 1979, they explain how prohibitions on building oil-fired power plants cut oil use. In emerging market economies, natural gas was substituted for oil.

After discussing how higher oil prices affect the economy (referred to as channels), the World Bank authors offer these conclusions:

> *Oil price movements driven by supply shocks in oil markets are often associated with significant changes in global output and income shifts between oil exporters and importers. Recent studies using large-scale macroeconomic models indicate that a supply-driven increase in oil prices averaging about 40 percent over two years—the size of the upward revision to World Bank projections—would lower global activity by about 0.2–0.6 percent after two years.*

A footnote in the report suggests the more recent studies they reviewed indicate a milder impact, attributing

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German economic minister **Robert Habeck** *said German families could see a more than €1,000 increase in heating costs this winter due to high natural gas prices. Germany has around forty million households, suggesting the expense would be more than €40 billion, or 3 percent of consumption. Europe's energy catastrophe worsened further as Russia cut off exports of natural gas to Germany on September 5.*

the reduced effect to increased oil production in the United States.

The authors also observe that higher natural gas and coal prices have worsened today's energy crisis: "On net, model simulations suggest that the upward revisions to energy prices, including to oil, natural gas, and coal, could reduce global growth by 0.5 percentage point in 2022 and a further 0.3 percentage point in 2023, lowering global output by a cumulative 0.8 percent by 2023."

Regarding a disruption of European imports of natural gas, the World Bank economists explain how "further unanticipated shocks to energy markets and a material deterioration of confidence in the euro area" would result in an additional drag on global growth of 0.4 percentage points in 2022 and 0.8 percentage points in 2023.

In their worst case, global output growth would decrease by 0.9 percentage points in 2022 and 1.1 percentage points in 2023. That is the total impact.

The only rational response to these findings is "Really?" In my view, the projections of modest global economic impacts offered by the World Bank and other financial institutions are far off the mark.

I start with a simple assertion: economic forecasters do not understand energy markets. One sees this in the work of economists such as James Hamilton and Lutz Kilian. The models they developed are often cited by central bankers, particularly Isabel Schnabel, an ECB board member.

These models basically assume that automobiles, airplanes, ships, and power plants run on crude oil. Professor Hamilton lays out this assumption in a 2009 Brookings Institution paper in which he asserted: "The [crude oil] price run-up of 2007–08 was caused by strong demand confronting stagnating world production."

Hamilton and the other economists analyzing 2007–2008 energy crisis were oblivious to the shortage of low-sulfur diesel fuel that boosted oil prices sharply in 2008. As the International Energy Agency and others noted, the European Union's accelerated requirements for using that fuel created a demand that refiners could not meet. The *Financial Times'* Javier Blas emphasized the problem in a June 12, 2008, article, noting "Refiners are paying record premiums for high-quality crude oil they use to produce diesel and petrol."

Blas went on to explain that the high-quality crudes were needed to produce products meeting the new environmental specifications. This crunch had gone "undetected" outside the refining industry. Blas also noted that "traders said supplies of low-grade oil, typically produced in the Middle East, are relatively plentiful," which strongly refuted Hamilton's assertion that world oil production was "stagnating."

The hurried implementation of low-sulfur fuel requirements by the United States and Europe caught refiners with inadequate sulfur-removal capacity needed to produce compliant diesel. The only option left to them was to buy crudes such as Nigeria's Bonny Light, which contains very little sulfur. The market impact was noticeable. Gasoil (diesel) prices rose sharply relative to fuel oil. Spot gasoil in Europe, which usually traded at a premium of around 150 percent to high-sulfur fuel oil, jumped to a premium of 250 percent around the time Professor Hamilton incorrectly saw a crude oil shortage.

The 2008 crisis was identical to the 1973 crisis when gasoline and distillate supplies fell after OPEC reduced Middle Eastern crude exports. The situation in 2022 is similar. Low-sulfur diesel was already in short supply before Russia invaded Ukraine, and the sanctions on Russia worsened the shortage. Thus, economic impacts like those in 2008 and 1973 can be expected.

The situation today has been exacerbated by the actions of India and China. India has been a regular exporter of diesel fuel. Recently, though, it imposed a tax

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on exports meant to force companies to limit shipments abroad. Meanwhile, refineries in China are operating at reduced rates because their government has denied export permits for diesel.

More recently, France has turned to the UAE to obtain diesel. French manufacturers such as Michelin are converting boilers that normally use natural gas to burn diesel or even coal.

It is every country for itself. Econometric models miss this nuance.

The supply constraints are pushing diesel prices to record highs. As I noted in *TIE*'s Spring 2022 issue, the International Maritime Organization's regulations on the marine fuel sulfur content are making things much worse.

The disruption of LNG markets has also added to the troubles. Pakistan and Sri Lanka are suffering from shortages of petroleum products and liquefied natural gas. The change in the LNG market is the second factor the econometricians have missed.

Wall Street Journal reporters Saeed Shah and Anna Hirtenstein reported on July 7, for example, that EIN Energy could not fulfill its contracts to supply LNG cargos to Pakistan and then noted the following:

> *The war in Ukraine is depriving far-away developing countries of electricity, as the world's supply of liquefied natural gas used to produce power is swallowed up by European nations as an alternative to Russian gas.*

The authors explain that LNG prices have increased by 1,900 percent (that is not a misprint) from the 2020 lows when the Covid-19 pandemic peaked. They put current prices at the equivalent of $230 per barrel. Developing nations cannot compete with European countries now bidding up prices to replace Russian gas. As a result, the reporters observe,

> *European countries increased their LNG imports by 49 percent, from the start of the year to June 19, according to data from Wood Mackenzie, an energy consulting firm. By contrast, imports by India are down 16 percent, China by 21 percent, and Pakistan by 15 percent over that period, it said.*

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Each For Itself

The actions of India and China have exacerbated the current energy crisis. India has been a regular exporter of diesel fuel. Recently, though, it imposed a tax on exports meant to force companies to limit shipments abroad. Meanwhile, refineries in China are operating at reduced rates because their government has denied export permits for diesel.

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—P. Verleger

Shah and Hirtenstein report that Pakistan offered tenders for ten LNG cargos for delivery from July to September and received no responses. The lights are going out in Pakistan because one-quarter of the nation's power plants require LNG.

Finally, the burden of high natural gas prices is spreading across the globe. Here, Germany offers an example.

The impact of high natural gas prices on German consumers was emphasized in a July 7 Reuters report. Vonovia, Germany's largest landlord, announced it would cut heating in its apartments at night. The Reuters article added, "Last month, Vonovia Chief Executive Officer Rolf Buch said he expected rising energy prices to cost tenants the equivalent of up to two months' rent."

The phrase "two months' rent" provides a way to measure the impact of the high natural gas costs on German consumption and GDP. Low-income Germans spend 46 percent of their income on rent. While the data are rough, Germans, on average, pay between 40 percent and 50 percent of their earnings on rent. This amount would rise to between 46 and 47 percent if Buch is correct and the government does not provide new subsidies.

Assuming the six-percentage-point increase in rent is offset by a 6 percent cut in expenditures on other things, consumption would decline by around €100 billion, or possibly 4 percent of Germany's GDP.

German economic minister Robert Habeck more or less acknowledged this when he told the German news organization ZDF that families could see a more than €1,000 increase in heating costs this winter. Germany has around forty million households, suggesting the expense would be more than €40 billion, or 3 percent of consumption.

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Germans are also paying more for gasoline and diesel fuel. In May, the price was 54 percent higher for diesel at retail, including tax, and 39 percent higher for gasoline. Given the use of the two fuels (roughly 450,000 barrels per day for gasoline and 700,000 barrels per day for diesel), I estimate that the oil price rise added a further cost of €50 billion to the German economy.

That said, new actions by consumers and the private sector, freed from regulations that previously stifled public response to crises, may moderate the impact a little.

As this issue went to press, further cuts in Russian natural gas exports caused the European Union to call on its member countries to cut natural gas use by 15 percent beginning August 1 to conserve supplies for winter. BASF, the German chemical company, even proposed shutting ammonia production and selling its natural gas supplies to the market. Here, the current response differs from prior energy crises because large consumers, now able to buy and sell energy freely, are making adjustments that increase their profits while allowing energy to flow to those willing to pay the most. This development is entirely new in the history of energy crises.

Germany also announced that it would tax natural gas use, which its economics minister said could raise the average household energy bill by €1,000 or $1,020 per year. This levy would constitute a tax increase of 1.5 percent on the average family of four. Higher costs may cause consumers to cut use quickly, further moderating prices.

Germany's difficulties pale compared to those of Italy, the European Union's sixth-largest member. The political chaos that followed Mario Draghi's resignation as prime minister can be traced mainly to the rising energy prices. Many expect the next government to founder as it tries to address the country's economic issues at a time of high energy costs. Call this a metastasizing effect.

The situation will get worse.

Europe's energy catastrophe worsened further as Russia cut off exports of natural gas to Germany on September 5. In cutting supplies, the Russians stated supplies should be resumed only if Europe lifted all sanctions.

The cut in supplies coincided with the potential collapse of a number of electric suppliers who could not meet margin calls from electricity exchanges. The governments of Finland and Sweden agreed to provide €33 billion to utilities in their countries to cover margin payments. In the case of Sweden, the sum amounted to 3.7 percent of 2021 GDP.

Consumers in the United Kingdom were confronted with 300 percent increases in energy prices although Liz Truss, the new prime mister, promised to cap price increases and provide funds to energy suppliers. The cost of the program was put at £130 billion over eighteen months, or 3.5 percent of GDP. The financing of the government grants was not disclosed.

The burden of high natural gas prices is spreading across the globe.

Even the United States is not exempt from the impacts of the energy crisis. Bloomberg's Joe Deaux and Naureen Malik reported that rising natural gas and utility prices are forcing plants in the United States to close due to high electricity prices. Higher power costs, for example, caused the second-largest aluminum mill in the United States to shut down. Restarting will require months.

In addition, two steel mills have suspended operations at parts of their plants. Again, high energy costs were blamed. The Bloomberg authors noted that natural gas prices have tripled, and electricity rates are at record levels.

The situation will get worse. On June 8, the Freeport LNG terminal in Texas suffered a fire that forced it to close. As a result, domestic natural gas prices dropped. Federal regulators have delayed the plant's restart due to serious safety issues.

Expect U.S. natural gas prices to surge once the plant is reopened. Already coping with inflation, consumers and businesses will respond by cutting activity, worsening the recessionary effects.

While the United States theoretically benefits from having a strong energy industry, the latter accounts for only a small share of GDP. Other economic sectors must compete in world markets, where the strengthening dollar undermines their position. At the beginning of 2022, the euro traded at a 14 percent premium to the dollar. By the end of the summer, it traded at a discount of 0.4 percent. The strong dollar will harm U.S. exporters and the foreign income of U.S. firms.

The much-heralded budget reconciliation package passed by the Senate in early July will do nothing to fix the energy price issue in the short run. U.S.

policymakers have few options at the end of 2022 to address the worsening inflation situation other than limiting natural gas or oil exports. This step would only worsen things elsewhere in the world.

However, the onset of a serious global slowdown would ease pressures on energy prices. Such a slowdown seemed to be beginning as this issue went to press.

The impacts of the energy crisis will continue to metastasize. Dislocations will increase exponentially. Ultimately, businesses, financial institutions, and even governments will fail.

Sri Lanka's collapse is but the first indication of the cancer's spread. The economic problems there caused by high oil and LNG prices have led to a collapse. Gross economic mismanagement by the country's president and prime minister is to blame.

Other nations will follow Sri Lanka soon. The International Monetary Fund's managing director, Kristalina Georgieva, has warned that a global debt crisis is developing as central banks raise interest rates to curb galloping inflation. The drop in the euro's value exacerbates the problem, especially for indebted countries paid primarily in euros or Chinese renminbi rather than dollars.

Even the United States is not exempt from the impacts of the energy crisis.

Russia's cutoff of natural gas exports to Europe will push the German economy into a serious recession. Germany's situation is particularly precarious. One might say that the country continued to increase its dependence on Russian gas despite warnings that Russia was an untrustworthy supplier, just as smokers keep smoking despite knowing the risks of cancer. In Germany and Europe, today the economic cancer has metastasized. Its spread to the rest of the world is only a matter of time. ◆