

Prosperity Will Rise Out of the Ashes

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In the 19th century, John Stuart Mill commented on the rapidity of economic recovery from national disasters and wars. He recognized that nations recover quickly as long as they retain their knowledge and skills, the prime engines of economic growth. America retains its vast supply of both, which suggests that, contrary to fears, the Sept. 11 attacks are unlikely to worsen the medium- to long-term economic outlook.

The effects of the earthquake that hit the Japanese city of Kobe in 1995 illustrate Mill's conclusion. This quake destroyed more than 100,000 buildings, badly damaged many others, and left hundreds of thousands homeless. Over 6,000 people died. Estimates place the total loss at about \$114 billion (more than 2% of Japanese GDP at the time). Yet it took only a little over a year before GDP in the Kobe region returned to near pre-quake levels.

Ongoing Threats

The uncertainty about the extent of future terrorist attacks may make the recovery from Sept. 11 different from those after Kobe and other shocks. But even ongoing threats usually have mostly temporary effects. For example, the 1962 Cuban missile crisis shocked the economy and awakened Americans to the possibility of nuclear attack. That crisis did significantly lower the growth of income for several months, but within a quarter or two, growth rates returned to pre-crisis levels, despite the continuing uncertainty.

While the primary losses from the terrorist attacks were on the ground, the airline industry, and related industries like tourism, have suffered the greatest impact. But such shocks are not unprecedented. The oil price shocks of the 1970s and early '80s also affected critical sectors of the economy, and forced substantial adjustments and reallocation of resources. Most economists agree that the oil shocks contributed to the poor performance of industrial economies in that period.

Yet history shows that economies adjust. The effect of the oil price increase fell greatly over time as the U.S. reduced its dependence on oil. Sectors of the economy that are less energy-dependent grew relative to those that are highly so, and consumers and producers conserved. As a result of these shifts, and the subsequent decline in oil prices, oil imports accounted for only about 0.7% of GDP in 1999, vs. 2.8% in 1980. More recent energy shocks have had a much smaller impact on the economy.

The effect of the terrorist threat is likely to follow a similar pattern. Even if the external threat remains fixed over time, our ability to deal with it in an effective and efficient manner will improve, perhaps greatly. The costs imposed on air travelers in terms of long lines and schedule disruptions will be reduced as we find more efficient ways to ensure security, and as potential travelers move toward video-conferencing and other means of communication. In the absence of further incidents, the psychological impact of the attacks will also wane. Already, air travel has recovered to about 80% of its pre-attack level, after falling to less than 50% in the first week after air travel resumed.

In justifying airline subsidies, some political leaders pointed to the disastrous effects on the economy of eliminating air

travel. But the relevant question is not what dire consequences would result from elimination, but what will be the damage from a higher effective price for air travel due to the terrorist threat? Air travel, taken in its entirety, may be an "indispensable" element of the economy, but marginal adjustments are much less costly.

This is one reason why the federal airline bailout was hasty and excessive.

Consumers have made a rational reaction to the uncertainty and ongoing threats. They cut back on purchases of big-ticket items as they husband resources and maintain flexibility to deal with contingencies. Similarly, businesses cut back on investment until they have a better idea of what is to come. But this reluctance to spend has hardly been universal or longterm. In fact, purchases of key staples like food and medicines initially increased, while consumption that required individuals to go out in public places, like restaurants and theaters, collapsed. However, publicly consumed goods have already rebounded strongly—attendance at Broadway, for instance, has returned to close to pre-attack levels.

Quantifying the impact of the attacks is instructive, even though estimates are imprecise. The destroyed World Trade Center was worth \$3 billion to \$4 billion. The lost assets of the building's tenants, and the cleanup cost, might add another \$10 billion. Including the damage to surrounding buildings and the Pentagon, the planes lost, and the lost productive capacity of those killed would raise the total economic loss to somewhere between \$25 billion and \$60 billion.

To put this in perspective, total physical assets in the U.S. are about \$30 trillion, and total productive assets that also include human capital are on the order of \$100 trillion. So even a \$60 billion loss is only 0.2% of physical assets and 0.06% of total productive assets. In contrast, the

\$114 billion of physical assets destroyed in Kobe was four times as large when compared to the Japanese economy.

The impact of an ongoing threat is harder to quantify. To gain a feel for how large that might be, we use a pessimistic scenario—namely, that attacks will be attempted each year for the foreseeable future, but that security measures will reduce the likelihood of success.

The direct cost of increased airport security has been estimated at about \$4 per passenger per flight segment. We assume that flight delays and security checks will force travelers to spend an additional half-hour per flight segment. (However, bad policies could greatly raise waiting times, as when gasoline rationing caused long lines at gas stations in the 1970s.) If the average passenger values time at \$20 per hour, increased security would cost about \$10 billion per year.

We further assume that even with enhanced security, terrorists would destroy one plane each year, resulting in up to 100 deaths. With a generous value of \$10 million per life lost, this would add another \$1 billion to the annual perceived cost of flying. This gives a total added cost to the airline industry of about \$11 billion per year. Under this pessimistic scenario, the terrorist threat would add about 11% to the cost of air travel, and impose a cost on the economy of about 0.1% of GDP.

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Continuing Attacks

Increased security would also reduce the likelihood of successful attacks on physical assets. But to err again on the high side, suppose the sustained annual loss from continuing attacks equals \$15 billion. That annual loss in assets would reduce net national product by about \$15 billion for a given capital stock, and the percentage point reduction in the net return to capital would be five basis points. The investment response to the lower return to capital would reduce long-run capital stock by about 0.8%, resulting in a loss of about 0.2% in long-run GDP. This is similar to our estimate of the direct impact of the costs imposed on air travel. Adding these two estimates gives a total impact of about 0.3% of GDP.

Note that the impact is small compared to the oil price shocks of 1974-5 and 1979-81. Overall energy costs increased in real terms by 53% and 67% respectively, and each shock increase raised the cost of oil imports by over 1% of GDP. Relative to the economy, the impact of either oil price shock was over four times as large as our estimated cost of future terrorism.

These calculations do not justify complacency because they assume that the U.S. will take more effective measures to reduce terrorism. Besides, bad economic policies in response to the terrorist threat could easily magnify the damage. Nevertheless, the economic future of the U.S. is still highly promising. Its vast supplies of human and physical capital, and its innovative skills, should continue to propel the economy to new heights.

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