

**Prepared Statement by
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**Senate Foreign Relations Committee
March 30, 2006**

Thank you Chairman Lugar, Ranking Member Biden, and distinguished members of the committee, for the opportunity to discuss with you today the hidden cost of oil.

Tight oil markets with minimal surplus capacity have made world oil prices particularly jumpy over recent months. In the last six months, a series of political and natural events have cascaded around the globe and left their impact on increasingly nervous oil-consuming nations. These developments have been extremely varied and include the following:

- a thwarted suicide attack in February at the Abqaiq oil processing facility in eastern Saudi Arabia,
- a string of turmoil in the Niger Delta highlighted by a recent speedboat attack in January by gunmen on the riverside offices of Italian oil company Agip,
- anti-government attempts to disrupt congressional elections in Venezuela culminating in an explosion at an oil pipeline connected to that country's largest oil refinery, and

- devastating hurricanes Katrina and Rita in the United States in August and September.

Their sporadic nature conveys an element of unpredictability and surprise.

I have recently coordinated several studies for the Energy Modeling Forum at Stanford University that relate directly to this issue. I would like to share a few observations that I think summarize the perspectives of many (but certainly not all) participants who were involved in the studies. Our forum frequently brings together the leading experts and advisors from government, business and university and other research organizations to discuss how we can improve analysis of key energy problems that keep policymakers awake at night. In this particular case, the work was done primarily for the U.S. Department of Energy, but we were asked to invite individuals we thought were the leading people on this issue.

Our two studies focused on the risks of another major oil disruption and the economic consequences of oil price shocks. I am also submitting both reports that expand considerably over my brief remarks here today. I will also briefly discuss a third issue: our dependence on the oil-producing cartel.

Although these episodes have made oil-importing countries nervous and have imposed some very high costs on people and infrastructure, they have yet to duplicate the types of oil shocks that were experienced during the 1970s and early 1990s. As a result, their economic impacts have been more tolerable than in the

past. Despite recent oil price volatility, for example, real GDP in the United States has grown strongly, by 3.5% annually since the end of 2001.

A number of knowledgeable experts, however, are concerned about the very real possibility of much more damaging shocks in the future. A group assembled by Stanford's EMF thought that the odds of at least one very damaging shock over the next 10 years were higher than those of an oil market with some volatility but without such a shock. Although another major oil disruption is not a certainty, its likelihood is significantly high enough to be worrisome.

Your odds of drawing a club, diamond or heart from a shuffled deck of playing cards are three out of four. In the EMF study, the participants found that the odds of a foreign oil disruption happening over the next 10 years are slightly higher at 80 percent. Disruption events included surprise geopolitical, military or terrorist turmoil that would remove at least two million barrels per day—an amount representing about 2.1 percent of expected global oil production. Foreign disruptions of this magnitude would have more serious effects on oil prices and the economy than we have seen with the Katrina and Rita hurricanes. Oil prices, however, would rise more and for longer than a few months or a heating season.

In the study, experts estimated the amount of oil lost to the market as the number of barrels removed by the initial disruption, minus any offsets from the use of excess capacity from undisrupted regions. The experts were asked to exclude

any releases from the U.S. strategic petroleum reserve, as these actions require separate decisions from the government during an emergency.

The approach identified four major supply regions where disruptions are most likely. These regions account for approximately similar shares of total world oil production. Collectively, they account for about 60 percent of total world oil production. The study lumped Algeria, Angola, Libya, Mexico, Nigeria and Venezuela as the first region, called “West of Suez.” Saudi Arabia was the second region, and other Persian Gulf states—Iran, Iraq, Kuwait, Qatar, UAE and Oman—were the third. Russia and the Caspian states comprised the fourth region.

The riskiest areas were the Persian Gulf countries outside of Saudi Arabia and several countries along the Atlantic Basin, such as Nigeria and Venezuela. The least risky area was Russia and the Caspian states. Although the participants found the possibility of disruptions was lower in Saudi Arabia than in several other vulnerable regions, disruptions there would tend to have larger effects.

In the second study on the economic consequences of a major disruption, we sought to understand how easily the economy could absorb such a shock. Figure 1 shows that oil price shocks preceded nine of the last ten recessions in the United States. The solid line indicates the path of inflation-adjusted crude oil prices since 1950. The gray bars denote periods when the U.S. economy was experiencing recessions as defined by the National Bureau of Economic Research (NBER). This

finding was first advanced by Professor James Hamilton at University of California at San Diego and has been confirmed by numerous other researchers.

If a large disruption does occur, we can expect very serious economic consequences. Large disruptions, especially if they move inflation-adjusted oil prices higher than experienced recently, will cause unemployment and excess capacity to grow in certain key sectors. Many large-scale models of the U.S. economy estimate that the *level* of real GDP could decline by 2% for a doubling of oil prices. Since the economy is growing more rapidly than 2% per year, that impact would not mean a recession.

Other researchers, however, think that these estimates underestimate the impacts, because they do not focus explicitly on sudden and scary oil price shocks. These other researchers think that our historical experience suggests that the level of real GNP would decline by more, at 5% for a doubling of the oil price. My personal view is that the higher estimate may be closer to what would actually happen if we had a major disruption. That would mean a recession.

Some people think that oil shocks may not be a problem because the Federal Reserve Board could intervene and lessen the impact. I have a great deal of faith in the Federal Reserve Board. They have done a marvelous job in controlling inflation, which places the US economy in a better position for offsetting oil disruptions than in previous decades. I am not yet convinced that they can

compensate the economy for a large devastating disruption. They would have to make some important decisions very quickly at a time when fears were running rampant. They may also find it difficult to stimulate the economy because nominal interest rates are already very low, not only here but also abroad. For this reason, I think that the US should seriously consider other types of insurance policies that would allow the Federal Reserve Board more leeway and flexibility in controlling our inflation rates.

As a general rule, strategies that reduce our dependence on oil *consumption* are more effective than policies that reduce our *imports*. One should view the world oil market as one giant pool rather than as a series of disconnected puddles. When events happen anywhere in the market, they will raise prices not only there but also everywhere that connect to that large pool. Since reducing our imports with our own production does not sever our link to that giant pool, disruptions will cause prices to rise for all production, including that originating in the United States. More domestic supplies do not protect us from these price shocks.

Unfortunately, insurance policies are never free. It will cost us something to implement a strategy that reduces our risk to another major oil disruption. But it will also cost us a lot of money and jobs if we do *not* adopt an insurance policy and the nation faces another major disruption.

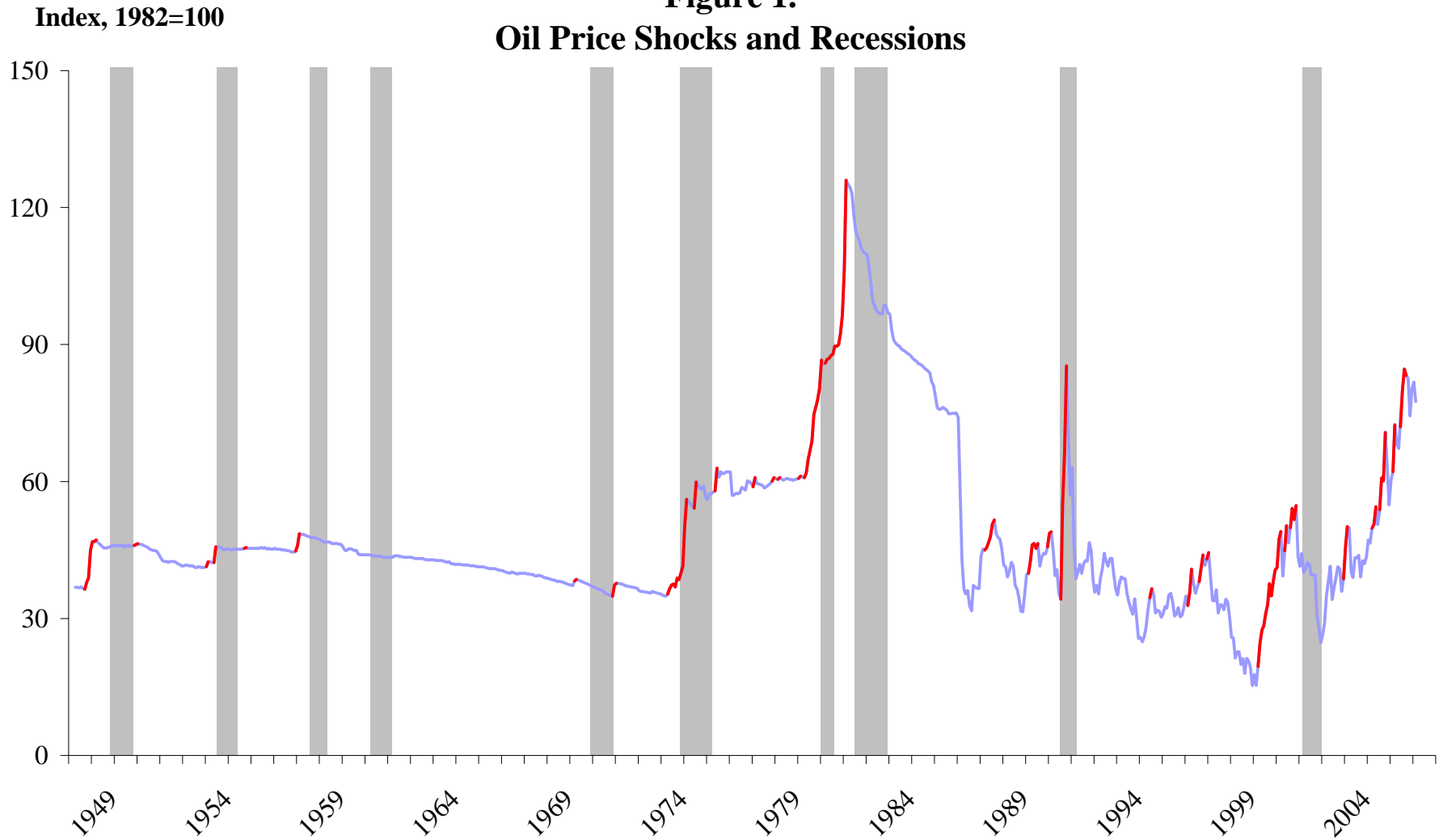
Figure 2 shows that the nation's oil use per dollar of Gross Domestic Product can respond to oil prices. As a result of the 1970 oil price shocks, we shifted away from oil in many sectors in the early 1980s, but that trend has slowed considerably since then. Moreover, transportation remains strongly tied to oil use. The dependence on oil in transportation not only affects households directly through higher gasoline costs but it also raises the costs of transporting goods around the country.

Our most recent studies did not address a third issue that could influence the costs of using oil. It is sometimes argued that the United States could adopt policies that would try to minimize or break the oil-producing cartel's control over the market. Our forum addressed this issue many years ago. Although the range of views was wide, our working group conservatively estimated that the hidden cost of oil from this source might be \$5 per barrel, or 12 cents per gallon. Several years ago, the National Research Council used a very similar estimate in their review of the corporate average fuel economy standards for automobiles. That estimate is not trivial, but it is considerably smaller than various estimates for gasoline's hidden costs due to pollution, congestion and automobile accidents.

In summary, the nation is vulnerable to another major disruption not because the economy *imports* oil but primarily because it *uses* a lot of oil, primarily for gasoline and jet fuel. Even if domestic production could replace all oil imports,

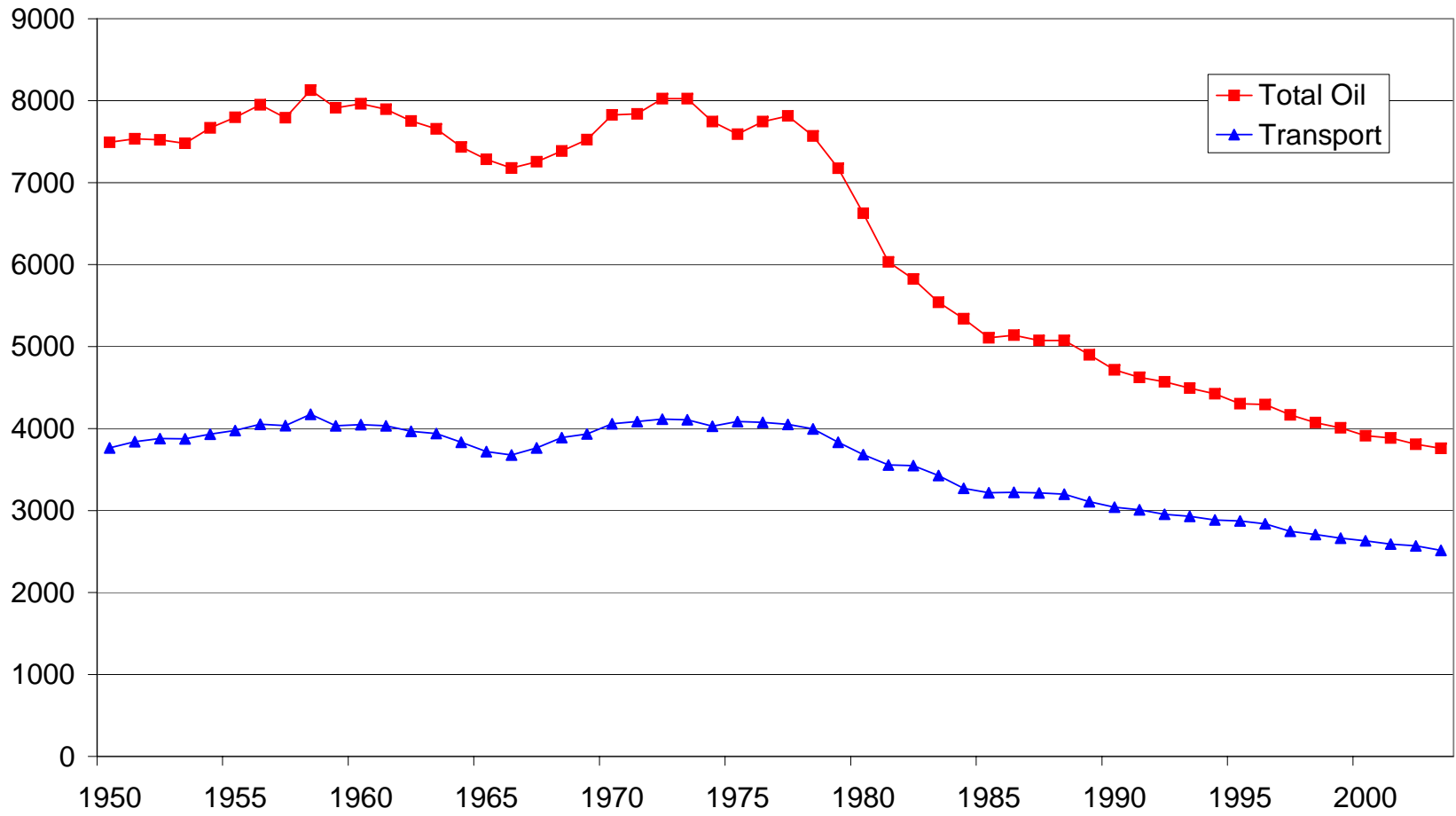
which I am not advocating, the economy would remain vulnerable to the types of disruptions discussed here. However, it is very appropriate that this committee focus its energy on this issue. Oil-importing governments have committed significant political and military resources to the Middle East over a number of decades in order to provide regional stability that is critical to world oil supplies. Excessive exposure to oil vulnerability risks in this country increases these costs or reduces the capacity to pursue foreign policy objectives that are critical for mitigating nuclear proliferation, terrorism and other risks that reduce global security. I cannot provide you with an estimate for this political cost of using oil, but it is extremely important.

Figure 1.
Oil Price Shocks and Recessions



Source: Stephen P.A. Brown, Federal Reserve Bank of Dallas. Based upon findings of Professor James Hamilton, University of California at San Diego.

Figure 2. Oil & Natural Gas Intensity (Btu/\$)



Source: US Energy Information Administration.

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