1 Introduction

The Benefits and Costs of Foreign Oil Dependence

> We have a serious problem. America is addicted to oil, which is often imported from unstable parts of the world.
>
> *President George W. Bush, January 31, 2006*

THE UNITED STATES is highly dependent on foreign oil. Until the late 1940s, it was a net oil exporter. Today, however, well over half of the crude oil and petroleum products consumed in America come from abroad. The flood of imports now stands at more than twelve million barrels per day (MBD), or more than six hundred gallons for every man, woman, and child each year. The U.S. government projects that this deluge will only continue to increase, reaching between thirteen and fifteen MBD by 2015 and then seventeen to twenty-one MBD by 2030, when imports will account for as much as two-thirds of all consumption (EIA 2006a, 115, tab. 24).

Imports are not the only form of U.S. foreign oil dependence. World markets largely determine the prices of oil and petroleum products in the United States. As most American consumers well know, when the world price of oil goes up, so do the prices of gasoline, heating oil, and other petroleum products at home. Because so much economic activity now crosses national boundaries, moreover, the health of the U.S. economy is closely bound up with the economic well-being of a number of other countries that are themselves large oil importers. When U.S. economic partners are hurt by high oil prices, the American economy inevitably suffers as well.

This substantial and growing reliance on foreign oil provides a number of economic benefits. Theoretically, the price of every barrel of oil that comes from abroad is less than what it would cost to produce an additional barrel in the United States or to reduce U.S. oil consumption by an equivalent amount.

But America's foreign oil dependence also comes at a cost, much of which is not reflected in the price that motorists pay at the pump.

What precisely are the costs of U.S. foreign oil dependence? Unfortunately, no one has offered a satisfactory answer to this vital question. Over the years, a number of relatively specialized and technical reports have addressed various aspects of the topic, such as the economic costs of oil shocks or the military costs of defending the Persian Gulf. But few of these studies have been widely circulated, most are quite dated, and none addresses the full gamut of relevant issues. Despite all the ink that has been spilled on the subject of oil, a comprehensive analysis of the costs of U.S. foreign oil dependence has not yet been written.

That is the purpose of this book. It seeks to identify and make explicit the full range of costs associated with U.S. foreign oil dependence and to provide, where possible, reasonable estimates of those costs. A secondary objective is to suggest some of the most promising ways of reducing these costs, but a thorough treatment of that issue would require a separate study. The bulk of the book is therefore devoted to the logically prior goal of determining just what and how big are the costs of foreign oil dependence. Unless it can be shown that these costs are substantial, there will be little reason or incentive to modify current U.S. policies.

Along the way, I hope to offer clear, accessible, yet authoritative answers to the questions many Americans have about the subject: Just how dependent is the United States on foreign oil? What economic problems does this dependence pose? What efforts has the U.S. government made, both at home and abroad, to reduce the economic costs and risks of foreign oil dependence? What additional costs have those policies imposed? And what more might be done to address them?

The book makes three interrelated arguments. First, despite their importance, the costs to the United States of foreign oil dependence have gone largely unrecognized by the general public. To be sure, public opinion polls have sometimes registered heightened concern about dependence on foreign oil, especially in recent years, but such concerns are typically linked to high gasoline prices and do not necessarily reflect a broader appreciation of the problem (Yankelovich 2006; Public Agenda 2006). In fact, although some costs, like the annual bill for oil imports, are obvious and quantifiable, a number of others are not so apparent or easy to measure. For example, it is difficult to put a price tag on the costs of coddling oil-rich authoritarian

regimes at the expense of promoting representative government, human rights, and other important values. Thus costs have often been incurred even when oil—and gasoline—prices have been relatively low and stable.

Second, the costs of U.S. foreign oil dependence have been substantial. Since the 1970s, the economic costs alone have run in the trillions of dollars. The magnitude of these costs provides a compelling reason for taking measures to reduce them, especially where doing so does not eliminate the benefits of foreign oil dependence.

Third, the policies that the United States has in fact adopted in response to its foreign oil dependence have only increased the overall costs. Successive U.S. administrations have tended to neglect the opportunities at home to reduce the economic costs by limiting demand. Instead, they have emphasized foreign and military policies designed to promote the development of new sources of foreign oil, to protect existing supplies, and to ensure access to them both. But this strategy has proved to be both highly expensive and largely unsuccessful. Many of the costs cannot be quantified, but those that can be have amounted to at least tens of billions of dollars per year. Yet more than three decades after the first oil shock of 1973, we find that the international situation is little improved. The world oil market is tight and likely to remain so for the foreseeable future, oil prices have flirted with the record highs of the early 1980s, and the risk of potentially costly supply disruptions is as great as it has been in many years.

One positive consequence of this otherwise bleak assessment is that the costs of foreign oil dependence can still be reduced substantially at relatively little expense. A large part of the solution lies in bringing down the overall level of oil dependence of the U.S. economy. This approach was pursued with some success during the late 1970s and early 1980s, but the opportunities for reducing oil consumption remain largely untapped. At least as important, however, is the need to rethink and revise the expensive foreign and military policies and commitments that have developed around U.S. foreign oil dependence over the past three decades.

The Benefits of Foreign Oil Dependence

Although the focus of this book is the costs of foreign oil dependence, there is no denying that this dependence has also yielded substantial economic and other benefits to the United States. Most obvious are the benefits of importing

oil. Typically, countries import either when the goods in question are unavailable at home or when their cost is lower than that of domestically produced equivalents. Thus American consumers and businesses profit from oil imports because "they pay less for energy than they would if they were to rely more extensively on higher-cost domestic oil or alternative fuels" (GAO 1996, 19). Overall energy prices are lower than if the United States had to rely on its own energy resources, resulting in greater economic output for a given level of energy consumption.

Unfortunately, it is not possible to determine these benefits directly. One can measure them only indirectly by estimating the harm that would be caused by reducing imports from existing levels, which would in turn involve some combination of a decline in consumption and a greater reliance on more expensive domestic sources of energy. A 1995 U.S. government study attempted to do just that. It considered the hypothetical effects of higher oil prices (caused either by a gradual decline in world production or the gradual introduction of a comparable oil import fee) on both imports and U.S. gross domestic product (GDP). The study found that a price increase of $10 per barrel above the forecast price would cause GDP to decline by about $50 billion after ten years, while a $20 increase would result in an annual GDP loss of about $100 billion. On the basis of these calculations, it concluded that the then-current level of imports provided hundreds of billions of dollars in economic benefits each year. Only in the event that the proceeds of an import fee were used entirely to reduce the federal budget deficit was the long-term effect on GDP of a reduction in imports predicted to be negligible (GAO 1996).[1]

The importation of oil also has strategic benefits. By using petroleum from abroad, the United States is able to extend the life of its domestic reserves. Today, the preservation of national oil production potential is not regarded as being as important as it was in the past. Indeed, the U.S. government has recently sold or leased most of the naval petroleum reserves established in the early 1900s. Nevertheless, there are good strategic reasons to postpone the day when the United States is unable to produce significant amounts of oil. The gradual exhaustion of domestic oil reserves will increasingly limit U.S. energy options, and the United States could once again find itself in a position where it would have to rely more heavily on domestic output. The use of imported oil allows the United States to conserve its own energy resources to meet future needs and emergencies.

The large volume of oil imports is closely related to the liberalization of the U.S. market for oil and petroleum products, which has conferred yet other benefits. In order to understand these benefits, it is useful first to consider the consequences of market restrictions. Since World War II, the United States has experimented with market restrictions on two principal occasions, each time with mixed results. In 1959, the Eisenhower administration imposed oil import quotas to protect domestic producers from less expensive imports from the Middle East and Venezuela. These controls, which were maintained in one form or another for fourteen years, kept domestic oil prices well above the world market price—60 to 70 percent higher in some cases—even as it stimulated domestic production (Yergin 1991, 539). Nevertheless, by the early 1970s, oil was in short supply and the quota system was abolished.

At almost the same time, the Nixon administration imposed price controls on domestic crude oil and petroleum products. These controls helped to shield U.S. consumers from the sharp rise in world oil prices that accompanied the first oil shock in 1973. Unfortunately, they also stimulated consumption while discouraging conservation and domestic production, causing imports actually to rise. Because of the strength of consumer interest in maintaining controls, not until 1979 did the U.S. government begin to lift them.

Since the early 1980s, both imports and the prices of oil and petroleum products have been unregulated in the United States. The price and import levels have been determined primarily by market forces. Although the resulting fluctuations have had various disadvantages, the liberalization of the U.S. oil market—and increasingly other energy markets—has helped to ensure that energy resources have been put to their most productive uses.

The Costs of Foreign Oil Dependence

For some, U.S. foreign oil dependence would appear to be an unqualified boon. As one commentator bluntly put the matter, "Oil imports aren't a problem" (Taylor 2001). Nevertheless, it is essential to recognize that U.S. foreign oil dependence has also imposed substantial costs. Although these costs have assumed a variety of forms, they can be grouped into two broad categories: (1) the actual and potential economic costs that result from foreign oil dependence, and (2) the costs of the various U.S. government policies—economic, diplomatic, military, and others—that have been undertaken in response to the economic costs and risks. All of these elements

must be considered when attempting to assess the overall burdens of foreign oil dependence.

Perhaps most familiar are the actual and potential economic costs, some of which have been directly experienced by American consumers and producers in the form of gasoline shortages and sharp price increases. The economic costs and risks can be further subdivided into two groups: the recurring costs associated with importing large and growing volumes of oil, and the less predictable harm caused by periodic oil supply disruptions and price shocks, both in the past and possibly in the future. Although economists have carefully examined these costs, there is disagreement about just how big they are. Nevertheless, most would agree that the total economic costs to the United States of foreign oil dependence have been substantial, with estimates running as high as $7 trillion for the period 1970 to 1999 alone.

Given the magnitude of these costs, the United States has had a strong interest in reducing them. And especially since the first oil shock in 1973, successive administrations have made a variety of efforts to do so, both at home and abroad. These policies can be grouped into three general categories. One includes efforts to reduce foreign oil dependence by limiting imports and oil consumption more generally. Another category comprises measures intended to mitigate the impact of oil shocks independently of any reduction in oil imports and consumption that might be achieved. The third involves policies aimed at reducing the size and likelihood of future oil shocks and ensuring reliable access to adequate supplies of foreign oil at reasonable prices. These policies, while at least partly successful, have generated substantial additional costs of their own.

What steps has the U.S. government taken to reduce foreign oil dependence? The efforts within this area have been the most diverse. They have included taxes, automotive speed limits, fuel economy standards, subsidies and incentives to develop substitutes for oil and to increase oil production within the United States, as well as research and development of alternative fuels and energy sources. But overall, the attempts to limit American oil consumption and imports have also been the most modest. For example, the U.S. government has never imposed a substantial gasoline tax or oil import fee, and it has never invested heavily in mass transit for the purpose of reducing oil use in the transportation sector. Other programs that were attempted, such as the production of synthetic fuels and related federal research and development efforts, have been scaled back in size or abandoned altogether. Since the early

1980s, the use of economic policy instruments to reduce foreign oil dependence has rarely, if ever, assumed a high priority. Thus the costs have been small, but so have the results.

Somewhat more successful have been U.S. policies intended to mitigate the economic impact of oil shocks. Most important among these have been the maintenance of price controls in the 1970s and, especially, the establishment of a Strategic Petroleum Reserve (SPR) of hundreds of thousands of barrels that could be released in the event of a disruption in oil supplies. The SPR has proved a valuable insurance policy at a total cost of at most $125 billion over three decades, and possibly much less. Nevertheless, the size and composition of the SPR have not been significantly updated to reflect changing strategic and economic circumstances, and American efforts to develop complementary cooperative arrangements with other oil consuming nations through the International Energy Agency (IEA) have added little to the U.S. capacity to lessen the effects of an oil shock by itself.

A third set of measures has been intended to reduce the risk and magnitude of future oil shocks and, more generally, to ensure dependable access to adequate amounts of oil from abroad at reasonable prices. These primarily external policies have been by far the most costly.

The United States and its economic and security partners have faced two general types of threats to the steady flow of oil from foreign sources. Initially, U.S. policymakers were primarily concerned with the possibility that hostile oil producing states would intentionally cut production or otherwise withhold oil from consumers, as exemplified by the 1973 Arab oil embargo. Since the Iranian Revolution in the late 1970s, however, the principal focus has been an unintended supply disruption of major proportions. The potential causes of such a disruption have been numerous, but among the greatest sources of concern have been perceived Soviet hegemonic aspirations in the Persian Gulf, intraregional struggles for dominance, such as the Iran-Iraq War and Iraq's invasion of Kuwait, internal political conflicts, and terrorist attacks on major oil facilities.

In response to these threats, successive U.S. administrations have pursued a variety of more specific objectives, which have varied according to the circumstances. In some cases, they have sought to convince existing oil producers to refrain from politically motivated embargoes or production cuts and, instead, to produce at levels that would result in moderate oil prices and to increase output above normal levels whenever necessary to compensate for unexpected

supply disruptions. Elsewhere, the United States has worked to diversify the sources of foreign oil by promoting the development of additional oil resources. As the 1991 National Security Strategy noted, "Diversification of both productive and spare capacity is important to providing a cushion to the oil market. Increased production . . . from other areas would also contribute to the security of oil supplies" (Bush 1991b). And the United States has sought to strengthen and stabilize oil producers in the face of external or internal threats.

A final objective has been to protect directly, if necessary, critical oil supplies and the pipelines and sea lanes that connect them to world markets. This goal was articulated perhaps most prominently by President Jimmy Carter in January 1980 following the Soviet invasion of Afghanistan, when he famously declared, "An attempt by any outside force to gain control of the Persian Gulf region will be regarded as an assault on the vital interests of the United States of America, and such an assault will be repelled by any means necessary, including military force."[2] But it has been a staple of statements of U.S. national security policy ever since. For example, the 1991 National Security Strategy of the first Bush administration stated, "The concentration of 65 percent of the world's known oil reserves in the Persian Gulf means we must continue to ensure reliable access to competitively priced oil and a prompt, adequate response to any major oil supply disruption" (Bush 1991b, 22). Likewise, the 1998 national security strategy of the Clinton administration noted, "Conservation and energy research notwithstanding, the United States will continue to have a vital interest in ensuring access to foreign oil sources. We must continue to be mindful of the need for regional stability and security in key producing areas to ensure our access to and the free flow of these resources" (Clinton 1998, 32–33; see also Clinton 2000).

In pursuit of these goals, the United States has made use of the full range of external policy instruments, including diplomacy, military and economy assistance, and, not least, the application of military power. The nature and magnitude of American actions have varied from region to region and over time, as both the demand for oil and threats to its supply have waxed and waned. The principal focus of these efforts has been the Persian Gulf, but other regions have also figured importantly in U.S. policy, especially in more recent years. Overall, the level of effort has been considerable.

In part because of the emphasis they have received, these external policy measures have arguably enjoyed some measure of success. The world has not seen another oil embargo since the early 1970s or a major oil supply disruption

since Iraq's 1990 invasion of Kuwait. But they have also generated substantial additional costs of their own. Most apparent have been the direct financial outlays these policies have entailed, especially for but not limited to military programs and operations. Less obviously, the costs have included constraints on American freedom of action and the compromise, if not the outright sacrifice, of other valued policy goals. No less important have been the many unintended consequences of U.S. actions that have, collectively, increased the threat to the United States and its interests.

Limitations of the Book

Although this book covers a wide range of topics, its scope is importantly limited in a number of respects. Five such limitations deserve explicit mention.

First, the book concerns only the costs of foreign oil dependence to the United States, rather than to other states, insofar as these can be isolated. Clearly, reliance on oil from foreign sources has imposed costs on a number of countries as well as on the broader international community. Arguably, however, the most fruitful place to begin an accounting of these costs is with the United States. As the largest consumer and importer of oil, the United States has paid the highest economic price. And how U.S. policymakers have responded to the economic costs and risks of foreign oil dependence has been especially consequential not only for the United States itself but for the world as a whole.

Second, the book is limited to the costs of dependence on foreign oil, to the exclusion of other foreign energy supplies. Such a distinction might be harder to justify in the case of some other countries, such as those in Europe and Japan, which have imported substantial quantities of coal, natural gas, and electricity. Dependence on energy sources of any kind from abroad is likely to result in certain costs. In the case of the United States, however, virtually all of the costs have been associated with oil. The only other form of energy that the United States imports in substantial quantities is natural gas. Yet gas imports, though growing, still amount to significantly less than 20 percent of total consumption, and most arrive via secure pipelines from Canada, which poses none of the problems that are characteristic of many oil exporting countries. In addition, the international natural gas market remains highly segmented, so that supply disruptions in one part of the world may have relatively little effect on prices in another. This situation is beginning to change with a growing trade in liquified natural gas (LNG), but U.S. imports

of LNG in 2005 still met less than 3 percent of domestic demand. Nevertheless, the potential implications of continued increases in U.S. dependence on foreign natural gas will be considered in the last chapter.

Third, the book looks only at the costs that can be related to the international dimensions of oil dependence. Thus it disregards some of the costs that result from the U.S. economy's more general reliance on oil. Of particular concern in recent years has been the impact of burning fossil fuels on the global climate. But the widespread use of oil and petroleum products has long imposed a number of additional substantial environmental, health, and other social costs that have not been reflected in their price to consumers. According to one 1998 estimate, these additional costs amounted to between $232 and $943 billion per year, increasing the "real price of gasoline" by two to eight dollars per gallon (ICTA 1998, 34).

Fourth, the book does not consider some of the political and strategic costs associated with the transfer of hundreds of billions of dollars in oil revenues to exporting countries, especially when oil prices are high. After the first oil shock, Western policymakers were concerned about the effect that the sudden accumulation of unprecedented numbers of "petrodollars" by states in the Persian Gulf and elsewhere would have on the global financial system and searched for ways to "recycle" them (Spiro 1999). Since then, the focus has shifted to the negative impact of outsized revenues on the oil exporting countries themselves and their policies, or what Thomas Friedman has termed "petrolism" (Friedman 2006d). In many countries, this windfall has fostered corruption, stunted political development, and, paradoxically, even contributed to economic decline (Karl 1997). It has also empowered some states, such as Iran and Sudan, to engage in activities that are inimical to American interests and made them less vulnerable to external pressures. Of particular concern in recent years has been the use of Saudi oil wealth to promote a version of Islam, Wahhabism, that is hostile to the West and, directly or indirectly, to finance international terrorist organizations like al Qaeda (see, for example, Brisard 2002; Greenberg 2003; Greenberg 2004). As Fareed Zakaria has observed, "In almost every region, efforts to produce a more stable, peaceful and open world order are being compromised and complicated by high oil prices" (Zakaria 2005).

Although these consequences are important, they can be attributed only in part to the United States and its policies. Traditionally, only a small percentage of oil exports from the Middle East, for example, have been destined for the American market. More important, high oil prices and revenues are

not something over which the United States can exert direct control. Rather, they are determined most immediately by world market conditions, including overall demand, supply, and the availability of spare production capacity. To be sure, as the world's single largest consumer and importer of oil, the United States has done more than any other country to shape global demand. Thus if Americans consumed and imported less, both prices and oil revenues would fall somewhat. But lower prices would in turn stimulate demand elsewhere while discouraging exploration and new investment in production capacity, thereby partially offsetting the positive effects of U.S. reductions.

In addition, the negative strategic consequences of oil revenues have varied substantially over the years. In the face of the sharp price hikes of recent years, it is easy to forget that for nearly a decade and a half, from the mid-1980s until the end of the 1990s, oil prices and the revenues earned by oil exporters remained relatively low. Yet throughout this period, the United States continued to incur high costs as a result of its foreign oil dependence.

Finally, it is important to note that the temporal scope of the study is restricted to the period since 1973. The United States has a long history of involvement with oil producing countries and regions, especially Latin America and the Persian Gulf, and it has been a net importer of oil since the late 1940s. Until the early 1970s, however, the economic costs and risks of foreign oil dependence were of little concern to policymakers in Washington, and both U.S. domestic and foreign energy policies were driven primarily by other considerations. These included supporting U.S.-based international oil companies in their efforts to gain oil concessions abroad, promoting the economic growth of America's economic and security partners, and protecting domestic producers from cheap foreign oil by imposing import quotas.

Why could the United States afford to be complacent? Through the late 1960s, imports accounted for less than 20 percent of total U.S. consumption. More important, the international oil market was generally characterized by a glut, which kept prices low. During the 1960s, world prices held steady at $1.80 a barrel, or approximately $10 per barrel in today's money (BP 2006). And in the event of a major supply disruption anywhere in the world, American oil producers had the capacity quickly to increase output in order to prevent a shortage. Thus the United States even encouraged Europe and Japan to become still more dependent on foreign oil as a means of hastening their postwar economic recoveries.

This complacency was reinforced by the experience of 1967, when Arab

countries attempted to impose an oil embargo on the United States, Britain, and West Germany in response to the Arab-Israeli War of that year. Because of concurrent domestic disturbances in several oil exporting countries, Middle East oil production initially dropped by as much as six MBD before stabilizing at about 1.5 MBD below previous levels, equivalent to the amount of Arab oil that normally went to the three embargoed countries. Almost one MBD of this loss was quickly made up for by a surge in U.S. production, however, and increased output by Venezuela, Iran, and Indonesia more than compensated for the rest. The available supplies were redistributed where needed, and within a month, it was clear that the embargo was a failure (Yergin 1991, 555–57; Little 2002, 63–64; J. Pollack 2002, 82). Thus the 1967 oil crisis prompted no significant changes in the policies of the United States and its allies. Oil imports continued to grow as if there were no reason to be concerned.

By the early 1970s, however, the conditions that had allowed the United States to benefit from foreign oil dependence at little or no cost were no longer present. Because of rapidly growing demand in the United States and other industrialized countries, oil markets were tightening. Between 1965 and 1973 alone, world consumption grew by some 80 percent. And by 1972, U.S. producers were pumping at maximum capacity, which eliminated their ability to provide a supply cushion in the event of an emergency (Rutledge 2005, 8 and 43). In May of the following year, President Nixon ended the oil import quota that had been established in 1959. At the same time, the governments of a number of oil producing states were increasingly challenging the pricing policies and even the ownership positions of the major international oil companies that operated on their territories.

The full implications of these altered circumstances were driven home in 1973, when the next Arab oil embargo and production cutbacks resulted in shortages and a quadrupling of world oil prices. For the first time, the United States was not able to deal with a serious supply disruption. Since then, Americans have paid a high economic cost for foreign oil dependence, while reducing these costs has been an important goal of U.S. policy.

Organization

Just how dependent is the United States on foreign oil, and how did it become so dependent? Chapter 2 explores the nature and magnitude of U.S. foreign oil dependence. It explains that foreign oil dependence can take several dis-

tinct forms. Most familiar is the dependence that comes from importing significant amounts of foreign oil. Another, less obvious form of dependence results from allowing the domestic price of oil and petroleum products to be determined by world markets. Both of these forms of foreign oil dependence derive in turn from the economy's general reliance on oil, which currently meets about 40 percent of America's energy needs. Finally, the United States is indirectly dependent insofar as its major economic and security partners also rely heavily on foreign oil to power their economies. The chapter pays particular attention to the overall degree of oil dependence of the American economy and the level of oil imports, since these are the aspects of foreign oil dependence over which U.S. policy can exert the greatest degree of influence. After discussing the principal uses of oil, Chapter 2 describes the historical patterns of U.S. oil consumption, production, and the resulting need for ever-growing amounts of imports.

Why does U.S. foreign oil dependence matter? It would not be an issue but for the fact that it can have economic costs, and these costs can be substantial. Chapter 3 examines these actual and potential economic costs in some detail. It reviews the estimates that professional economists have generated and considers how important the costs are likely to be in the future. Although economists have often disagreed about the precise nature and magnitude of these economic costs, they have frequently put them in the range of tens of billions of dollars per year. The chapter first considers the routine and recurring costs associated with paying for oil imports, such as the transfer of wealth abroad and the consequent decrease in potential U.S. economic output. It then analyzes the costs that can follow unexpected supply disruptions and accompanying price increases, or "oil shocks." After reviewing the history of oil shocks, how they can hurt the economy, and estimates of their costs, Chapter 3 concludes with a discussion of the factors that will determine the likelihood, magnitude, and impact of future oil supply interruptions.

Chapter 4 examines the various economic policies that the United States has adopted since the early 1970s in response to foreign oil dependence and their costs. The first section looks at domestic efforts to reduce foreign oil dependence by limiting U.S. oil imports and consumption. Among the measures considered are those intended to discourage demand by making oil and petroleum products more expensive, to promote conservation and the more efficient use of oil, to substitute alternative fuels and energy sources, and to increase domestic oil production. The next section considers how the United States

has attempted to mitigate the economic impact of oil shocks, chiefly through the use of price controls and the creation of the Strategic Petroleum Reserve. A final section describes how the United States has sought to achieve these goals in cooperation with other consumer countries. Although these measures, taken together, have reduced somewhat the economic costs and risks of foreign oil dependence, overall they have been quite modest in nature.

The next three chapters address the external policy measures that the United States has undertaken to reduce the likelihood and magnitude of oil shocks and the additional costs that those policies have entailed. Chapter 5 considers how dependence on oil from abroad has shaped U.S. foreign policy toward actual and potential oil producing regions of the world. It examines the ways in which the United States has sought to use diplomacy, economic and military assistance, and arms sales to strengthen and influence governments in a position to determine world oil supplies and prices. The chapter pays particular attention to the Persian Gulf, which has been and will remain the world's single largest source of petroleum exports. But it also looks at three other regions of increasing importance to the United States: Latin America, the Caspian Sea, and sub-Saharan Africa. The chapter shows that these efforts have been far from cost-free and that, in many cases, they have conflicted with other important U.S. policy objectives, such as the promotion of democracy, protection of human rights, good governance, and economic development.

Chapter 6 continues the examination of external responses to foreign oil dependence by considering the impact that it has had on American military policy. In contrast to the previous chapter, here the focus is exclusively on the Persian Gulf, which is where by far the most substantial military efforts have been directed and thus the military costs have been the highest. The chapter employs two complementary methods. The marginal cost approach involves identifying the specific programs, capabilities, and activities that the United States has undertaken for the purposes of protecting and ensuring access to foreign oil supplies and then adding up their costs. The total cost approach involves dividing the number of basic combat units in each service into the entire manpower and budget of that service and then multiplying the cost of each unit by the number of units attributable to oil-related missions. The chapter also considers the costs of the various military operations that the United States has conducted in the region to protect, directly or indirectly, American oil interests there. It finds that the total price tag of

these military efforts has amounted to tens of billions of dollars per year since the early 1980s.

The scope of Chapters 5 and 6 is limited to the costs that American policymakers knowingly incurred or should have been able to anticipate in choosing to pursue these courses of action. But U.S. foreign and military policies have frequently resulted in unintended consequences. Above all, they have undermined what were nominally friendly regimes, created new enemies, and empowered potentially hostile actors, thereby actually increasing the severity of the threats to U.S. interests, both oil-related and otherwise. These unintended consequences and the additional, unexpected costs they have imposed are the subject of Chapter 7.

Chapter 8 first summarizes the various costs, both material and intangible, that can be attributed to U.S. foreign oil dependence and the policies that it has spawned. It argues that although these costs have been often overlooked, they have been substantial. Just those costs that can be quantified have easily amounted to tens, and possibly hundreds, of billions of dollars each year. And the costs are likely to grow only larger in the coming years, should there be no significant reduction in U.S. foreign oil dependence or change in American policies. The chapter then reviews the principal options that exist for reducing the costs of foreign oil dependence and past policy responses, grouping them into three broad categories that parallel the discussion above. First, the United States could make renewed efforts to reduce oil consumption and, indirectly, its dependence on foreign oil. Second, it could increase its capacity to mitigate, if not neutralize, the impact of future oil shocks. And third, it could review its foreign and military policies toward oil producing regions with an eye toward ensuring their cost-effectiveness. Since these external policies have been the most costly of all the responses pursued by successive administrations, modifications in them to eliminate elements that were counterproductive or unnecessary to enhance energy security or to bring the costs in line with the benefits could yield the largest savings.