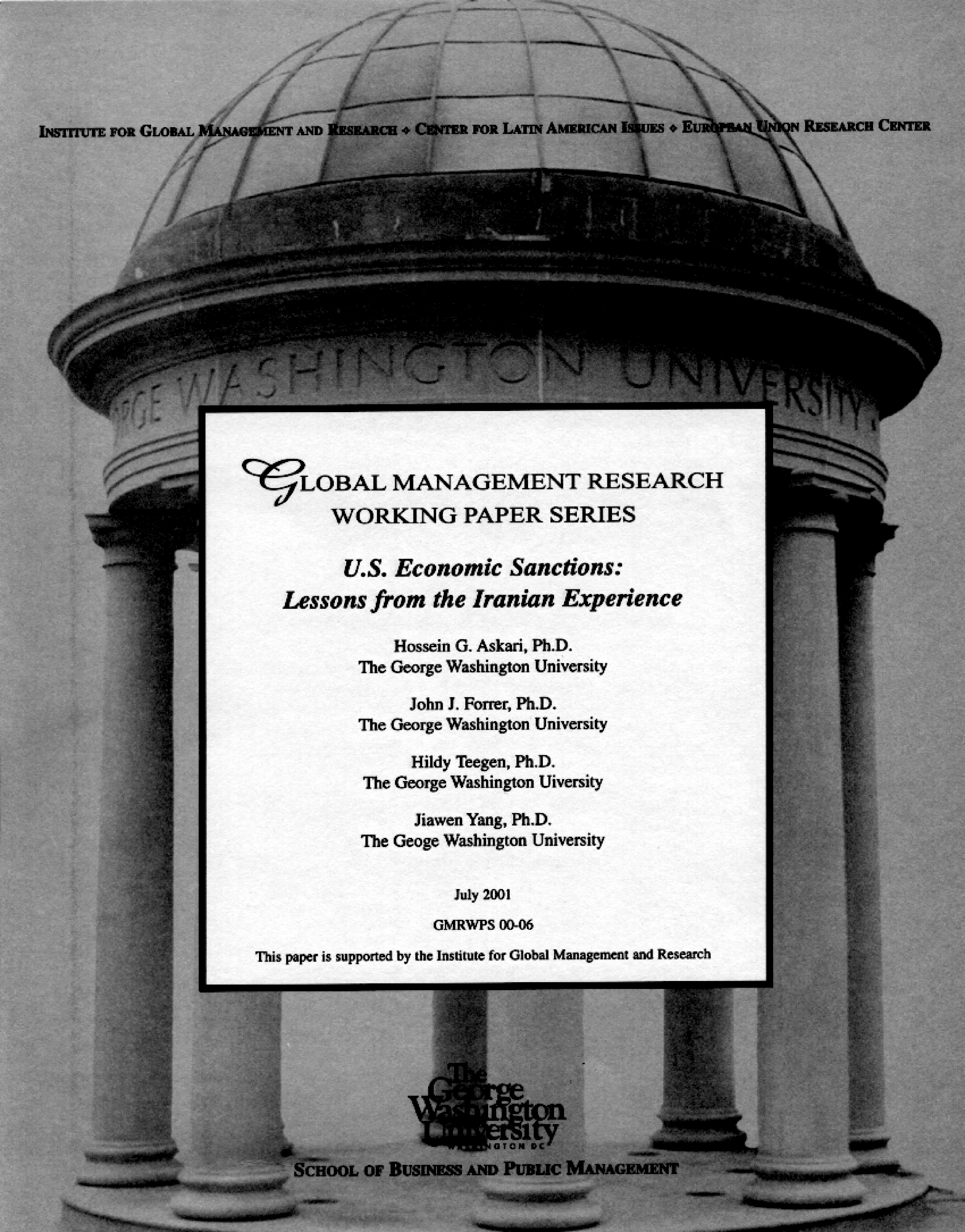

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U.S. Economic Sanctions: Lessons from the Iranian Experience

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ABSTRACT

The United States has been the world's only major country to use economic sanctions with frequency to change what it perceives as the objectionable policies of other countries. Although the global economic, financial and military influence of the U.S. enables it to use sanctions as an instrument of foreign policy, the efficacy of sanctions is still in great doubt. Over a period of twenty years, U.S. sanctions on Iran have had a significant economic cost for the U.S. as well as for Iran. Direct merchandise trade between the U.S. and Iran has declined significantly, but the real cost of sanctions to each country is not a result of reduced direct bilateral merchandise trade, instead, it is due to factors such as missed FDI opportunities, which will ultimately have long-term negative consequences for both countries. For the future, largely because of the expected growing importance of the WTO, the use of sanctions by the U.S. is likely to diminish.

U.S. Economic Sanctions: Lessons from the Iranian Experience

U.S. presidents and Congress have seen economic sanctions as instruments for achieving specific international objectives while avoiding military conflicts; thus eliminating loss of human life and special budgetary allocation for the military. Unilateral economic sanctions are invariably imposed on a country when some policy of that country is seen as objectionable or against U.S. national interest.[1] These policies of U.S. targeted countries include abuse of human rights, development of nuclear, biological and chemical weapons, support of terrorism, unlawful military engagement, opposition to U.S. policy initiatives and trade, financial, copyright and patent policies. By imposing some form of economic sanction on a country, the U.S. hopes to send a strong signal of its displeasure to the target country's leadership and hopes to set in motion forces to induce a change in the country's policies.

The U.S. has used a wide range of sanction policies. These have included an embargo on all, or specific, U.S. exports to the target country, on all, or specific, imports into the U.S., on U.S. capital flows, on operations of U.S. corporations, freezing of the target country's financial and non-financial assets, and a ban on travel by U.S. citizens and on flights by U.S. airlines to the target country. At times, the U.S. has lobbied multilateral (the World Bank) and regional (the Inter-American Development Bank) organizations to withhold their normal policies and practices toward U.S.-sanctioned countries. The U.S. has even tried to extend its sanctions reach by threatening sanctions on third countries to solicit their cooperation in adopting U.S. sanctions against the target country (for example, ILSA – the Iran Libya Sanction Act).

Economic sanctions are presumed to set in motion a change of events that will, in time, induce the target country to comply with U.S. wishes. The standard expectation is that U.S. economic sanctions will inflict a quick and heavy economic burden on the target country, making life intolerable for the citizenry. The leadership, seeing the general dissatisfaction and the threat to its survival, will change its policies to comply with U.S. wishes; or if the leadership does not change its objectionable policies, it will be overthrown and a more U.S.-friendly regime will come to power. Alternatively, economic sanctions may cause a special problem for some of the target country's elite (for example, freezing of their U.S. assets), who in turn will change the

[1] Multilateral economic sanctions would include two or more sanctioning countries. The most widely recognized multilateral sanctions have been under the auspices of the United Nations and have included the now lifted sanctions on South Africa and the current sanctions on Iraq.

country's policies or force the leadership to do so. Rarely, if ever, do economic sanctions follow this presumed path and achieve their intended goal quickly.[2]

The likelihood of significant economic pain on the target will in large part depend on (i) economic and financial characteristics of the target, (ii) U.S.–target economic and financial relations existing and expected, and (iii) global macroeconomic conditions. The important target characteristics include: GDP, GDP/capita, growth rates of GDP and GDP/capita, export/GDP, imports/GDP, structure of exports, imports and GDP, size and structure of capital inflows and outflows, membership in regional (for example, ASEAN) and international (for example, WTO) organizations and the like. Additionally, the relative political and economic importance on the global stage of the U.S. and the target is a critical factor in affecting the policy of third countries and of regional and international organizations. Important U.S.–target relations include the structure (the specific goods) and relative importance (actual and potential) of bilateral trade (percentage of exports going to and imports coming from) and capital flows (including FDI). Last, but not least, the level of global economic activity and sectoral conditions (for example, oil shortage) will affect the success of economic sanctions.

By some estimates, the U.S. currently has some form of economic sanctions on over seventy countries (USA Engage, 2001).[3] There are a number of possible reasons why the U.S. is by far the pre-eminent sender of sanctions. The U.S. is the world's foremost military and economic superpower. As a superpower, the U.S. has the potential and thus tries, to get countries and entities around the globe to support, or at least not frustrate, its political economic and military agendas. Second, the U.S. economy is so big, representing roughly 25-30% of global GDP, that U.S. economic sanctions could at least have an impact on a target.[4] The U.S. market could represent a significant market for a country's exports, the U.S. could be the supplier of choice for a country's imports, U.S. capital flows could be critical to support a country's investment program, and so on. Third, the U.S. can further affect the target by asserting pressures on third countries and on international and regional organizations to support U.S. policies on the target. Fourth, U.S. politicians are vulnerable to domestic lobbying from special interest groups (for example, financial donors to campaigns and representatives of a large voting block) who have economic or political interests in sanctioning a country (for example, the Cuban and Steel lobbies). Fifth, while as the pre-eminent military power in the world the U.S. could resort to force in pursuing economic and political ends, it is politically preferable for politicians to use the sanction instrument. Military engagement requires funding, could result in U.S. casualties, or lead to further escalation, with all of this playing in the U.S. media on a daily basis.

Economic Impact of Sanctions

Empirical Studies on the economic impact of sanctions have been few in number and narrowly focused. The work of Hufbauer and his colleagues (Hufbauer et al., 1997) figures among the most prominent empirical studies in this area. Their work has been largely focused on the impact of sanctions on the U.S. economy. They

[2] As an example, U.S. sanctions on Cuba have been in place for about forty years, with no discernable change on President Castro's policies. The detractors of sanctions may argue that not only have sanctions not changed Cuba's policies or caused Fidel Castro to be overthrown, they have in fact helped to keep him in power and have thus reinforced his objectionable policies. In other words, U.S. sanctions have afforded President Castro a scapegoat for his own economic and social policy shortcomings; by blaming the U.S., Castro has been able to invoke nationalistic support and thus prolong his regime. Even after forty years, the supporters of sanctions point to the success of sanctions because sanctions have damaged Cuba economically and will eventually change Cuba's policies (with or without Castro in power).

[3] Another estimate is that sixty-one new sanctions were put in place during 1993-1996 (National Association of Manufacturers, 1997); at the other extreme, is an estimate of only nine new sanctions during the same period (Helms, 1999).

[4] Data adapted from, World Development Indicators 2000, The World Bank, Washington, D.C.

have used a gravity model to investigate the impact of U.S. sanctions on U.S. merchandise exports, employment and wages. The gravity model, in its simplest form, predicts that the value of trade between the U.S. and the target country will be positively related to the size of their outputs, and negatively related to the distance between them. In addition to size and distance, the Hufbauer et al. study has included other variables and predicted that bilateral trade would increase if the country shared a common border or a common language with the U.S., or was a member of the same trading block. In addition, the study used a series of dummy variables to capture the effect of trade sanctions. The data set included bilateral trade (exports plus imports) among eighty-eight countries for 1985, 1990 and 1995, and exports alone for 1995. The broad result of the study is that U.S. economic sanctions in 1995 might have reduced U.S. exports to twenty-six target countries by as much as $15-19 billion. If there were no offsetting exports to other markets, that would mean a reduction of more than 200,000 jobs in the relatively higher-wage export sector and nearly $1 billion annually in export sector wage premiums. This was claimed to be a relatively high cost to the U.S. economy while sanctions were in place. But Hufbauer et al. found only limited evidence that the negative impact of sanctions continued after they had been lifted. In another study, Hufbauer et al. (1990) stated that sanctions had been successful 36% of the time. There are reasons to question the validity of this assessment as others have found a far lower success rate (Pape, 1998).

The gravity model approach gives a very limited picture of what has happened to bilateral merchandise trade. Specifically, as a result of sanctions, U.S. direct trade with Iran may be down to almost zero, but still U.S. goods may be getting into Iran through third countries, albeit at a somewhat higher price. The situation is similar for U.S. imports from Iran. Moreover, goods may be smuggled into one or the other country. Even if U.S. exports to Iran (direct and through third countries) are down as a result of sanctions, does this necessarily represent a loss to the U.S.? Depending on the composition of the goods previously exported to Iran, it is possible that these same goods may be exported to some other countries, albeit at a slightly lower price. If this is the case, the loss in export revenues, jobs and wages may be minimal. Moreover, even if the loss in exports to Iran is not compensated for by exports to other countries, what is the nature of this loss for the U.S.? Surely, this is only a loss in foreign exchange earnings as the goods exported to Iran could be consumed domestically in the United States or the inputs could be redirected to produce other goods for U.S. markets.

On the import side for the United States, what does the loss of imports from Iran mean? If the U.S. can buy the same goods at the same price from other countries, there is no loss. If the price is higher, then there is a commensurate cost (the higher price minus the Iranian export price) to the U.S. If the Iranian goods cannot be secured from other sources, then prices in the U.S. will increase, imposing a classical deadweight loss (from trade reduction) on the U.S. The size and nature of this loss and its implication is very different from that of a loss in foreign exchange earnings associated with lower exports.

For the target country, similar considerations will determine the cost of U.S. sanctions on their merchandise exports and imports with the U.S.

While the preoccupation of the economic impact of sanctions has been focused on direct merchandise trade between the U.S. and the target country, sanctions can produce much more pervasive results. We examine the impact of sanctions on Iran to identify and assess the range of sanctions effects that go far beyond direct merchandise trade. While Iran, as any single country with its own special characteristics, may be seen as unique, the results still carry a powerful lesson. The non-bilateral trade impact of sanctions may pose a much higher cost for the United States and the target country and its adverse effects may continue for a long time after the lifting of any sanctions. If unchecked, the proliferation of U.S. sanctions may pose an ever increasing and serious burden on the international, economic and financial interests of the United States.

U.S. Sanctions on Iran

U.S. sanctions on Iran have gone through a number of changes over the last twenty years. U.S. sanctions were imposed on Iran to change various Iranian policies; these alleged policies include: (i) Iran's opposition to the Middle East Peace Process, (ii) Iran's support for Hezballah and Hamas, (iii) Iran's acquisition of nuclear and ballistic weapons, (iv) Iran's general support for international terrorism and (v) Iran's hostility toward the U.S. Table I contains a list and a brief description of the most prominent sanctions affecting U.S.-Iranian economic relations.

Besides the initial freezing of Iranian assets, the most prominent sanctions on Iran are the restrictions on U.S.-Iranian trade (all imports from Iran and all exports to Iran in 1995) and the prohibition of investments in Iran (in 1995 and extended to third countries in 1996 – ILSA or the Iran Libya Sanction Act). While the impact of trade restrictions has been the most visible, noticed, studied and debated aspect of U.S. sanctions, we believe that the less discussed non-trade and indirect sanction policies may have had a more significant and longer-term impact (Preeg, 1999). These non-trade sanctions, policies and effects include: restricting the availability of export financing from the U.S., restricting the availability of export financing from third countries, restricting the availability of IMF/World Bank financing, increasing the cost and restricting the availability of commercial financing, restricting Iran's debt-rescheduling efforts, impairing FDI flows (especially in the energy sector), U.S. opposition to gas and especially oil pipelines across Iran and opposition to oil-swaps with Iran.[5]

Impact of Sanctions on Direct U.S.-Iran Merchandise Trade

The estimated impact of sanctions on <u>direct</u> U.S.-Iran merchandise trade is shown in Table II. Our preliminary estimates indicate a reduction in U.S. exports to Iran from a low of $0.3 billion in 1993 to a high of $2.4 billion in 1985 as a result of sanctions; and a reduction in U.S. imports from Iran from a low of $0.8 billion in 1993 and 1994 to a high of $2.8 billion in 1986.

Given that the focus of most studies is direct trade, the analysis by and large stops here with estimated reductions in <u>foreign exchange earnings</u> for the U.S. (from exports to sanctioned countries) and <u>foreign exchange expenditure</u>s by the U.S. (on imports from the sanctioned countries). Such estimates in no way represent the impact of sanctions and their burden on the U.S. or on sanctioned countries.[6] We look more deeply at Iran in order to get a measure of the impact of U.S. sanctions.

[5] Other factors would include non-participation of U.S. companies and citizens in other Iranian-related business, and psychological effects on non-Iranians' confidence in Iran's economy by biasing risk assessments of doing business in Iran.
[6] Our gravity model estimates of the impact of U.S. sanctions on U.S. exports and imports and on the trade of sanctioned countries are part of a broad study of the trade impact of sanctions which will be published separately in the future.

The Impact of Sanctions on Iran

(i) Iran's Trade

The lion's share of Iran's exports is petroleum (largely crude oil); although this was especially the case in earlier years, still exports of fuels have been in the range of 70-90% of total exports over the last decade (The World Bank, 2000).[7] Iran's non-fuel exports exceeded $1 billion for the first time in 1987 and climbed to $4.7 billion by 1998. Prior to the Iranian Revolution (1979), the U.S. was one of the major destinations for Iranian exports - either first or second in the four immediate years prior to the revolution – but oil was the major export to the U.S. as total non-oil exports were below $1 billion with non-oil exports to the U.S. at $31 million in 1976/77 and $63 million in 1977/78.[8] Although Iran's exports to the U.S. declined in importance in the aftermath of the revolution, they recovered significantly during the period 1992-1994. After the presidential order banning U.S. imports of Iranian crude in 1987, still U.S. companies continued to buy Iranian crude and Iran felt little or no impact on its exports of oil, because U.S. companies bought the crude and refined it, sending it to the U.S. in refined form; or sold it to other countries as crude or refined products.[9]

What did Iran lose from the loss of the U.S. market for oil and non-oil exports *as a result of* U. S. sanctions?

We believe Iran has lost very little in oil export revenues as a result of U.S. sanctions. Up to 1987, there were no sanctions (except for the period 1980/81); after 1987, the buyers for Iranian crude from around the world were not reduced in number, although the number of direct destinations was reduced – no direct imports of Iranian crude into the U.S. Non-U.S. buyers absorbed the crude previously bought by U.S. companies (representing roughly 10% of Iran's crude oil exports in the previous four years). If Iran did incur some initial difficulties in selling some of its crude in 1995, the effect would have been temporary and quite small. Iran's storage cost may have increased slightly and a very slight discount of less than 50 cents per barrel may have been necessary for a month or two; and given monthly exports of roughly $160 million to the U.S. (the average over the previous three-year period), the loss to Iran may have amounted to $3-4 million per month and this may have lasted for one to two months.[10] We can, therefore, conclude that exports of fungible commodities are unlikely to be affected by sanctions; the sanctioned country can still sell its product to other countries, while other exporters redirect their product to the U.S.

There is no doubt that the 1987 presidential order affected Iran's non-oil exports, but by how much? Before estimating the impact of this order on Iran's non-oil exports, a few points should be remembered. In the period 1973-1977, the United Arab Emirates' (Dubai) annual imports of non-oil products from Iran were less that $10 million (or less than 2% of Iran's non-oil exports); in 1986/87 annual imports had jumped to $163 million (representing 18% of Iran's non-oil exports); and in 1992-93 these imports amounted to nearly $400 million. The point is that even before the 1987 order, Iranian goods were coming to the U.S. through Dubai and through

[7] Unless otherwise indicated, macro, trade and population statistics are taken from Global Development Finance Indicators 2000, The World Bank.

[8] All trade data are from Iran - Recent Economic Developments IMF, 1978, and Islamic Republic of Iran – Recent Economic Developments, IMF, 1995, 1999, and 2000.

[9] As an aside observation, Iran started to report sales of crude to U.S. companies as exports beginning in 1992. For instance, if Exxon purchased Iranian crude for delivery to the Netherlands, Iran reported this transaction as an export to the U.S. As a result, in 1992 Iran reported exports of $2.1 billion to the U.S. while the U.S. reported imports of $1 million. In 1993, 1994 and 1995, Iran reported respectively exports to the U.S. of $1.4 billion, $2.2 billion and $762 million.

[10] In our private discussions with a renowned oil expert, he dismissed the notion that sanctions placed any significant loss on Iran, to his mind, any loss was more likely to have been due to prevailing market conditions when Iran switched to different buyers of its crude.

other third countries, and that this practice continues today. Still the shift in U.S. demand for Iranian non-oil exports (due to the 1987 presidential order) has had some impact on Iran. Assuming that all of Iran's non-oil exports to the U.S. were withheld from world markets (namely, consumed in Iran), the total loss in Iran's non-oil exports would have been $980 million for the nine-year period 1990/91-1998/99, for an average annual amount of roughly $110 million. Given these extreme assumptions, this figure is clearly an upper bound. It is inconceivable that in 1998/99 the UAE (with a total population of a little over two million) could be the largest buyer of Iran's non-oil exports (for its own use) at $516 million (or 16.2% of Iran's total non-oil exports). If over the same nine-year period, we assume that only 25% of imports into the UAE from Iran (at an annual average of $343 million) were re-exported to the U.S., then the figure of $110 million per year would be reduced to $25 million per year! In short, we estimate that the presidential order of 1995 may have reduced Iran's non-oil exports of Iran by $25-110 million annually. To put this range of figures into some prospective, the $110 million is equivalent to the value of about 3.5 days of Iran's oil exports and $25 million is equivalent to the value of less than one day's oil exports. The conclusion is that in a globalizing world, goods will find their way from country to country even if they have to go through third markets.

On Iran's import side, the 1987 presidential order barred basically fourteen categories of exports to Iran, and it was the 1995 order that embargoed all exports to Iran. What did this mean for Iran? Clearly, Iran could not buy U.S. goods directly from the U.S. but had already reduced its reliance on U.S. goods (at least directly) after the revolution. In response to economic sanctions, Iran shifted its imports to other sources and expanded its imports of U.S. goods through the UAE. In fact, before the 1995 order, Iran had started to import U.S. goods through Dubai. This was put in place for political reasons. Iran wanted to show the lowest possible level of trade with the U.S. to demonstrate that it did not need economic relations with the U.S. The mark-up of imports of U.S. goods through Dubai is estimated at 20%.[11]

Our estimate of the foreign exchange loss to Iran (from reduced exports to the U.S. and higher-priced imports from the U.S. through Dubai) attributable to sanctions is $32.7-92.2 million in 1995 and $74.3-176.3 million in 1999; these figures are a small fraction of the gravity model estimates of the reduction in direct U.S.-Iran trade (see Table II). It should again be emphasized that these numbers represent foreign exchange losses, not economic costs to Iran, because even if non-oil exports declined commensurately, these goods could have been consumed domestically or resources could have been reallocated to the production of alternative goods.

In assessing the impact of U.S. sanctions, the preoccupation of most academics with reduced direct bilateral merchandise trade appears to be inappropriate. Sanctioned countries with exports that are fungible commodities and that are limited in supply (such as oil) feel very little effect from U.S. sanctions on their exports. The focus on direct bilateral trade also hides the fact that goods can be and are trans-shipped through third countries.[12] Moreover, in the case of many export commodities, a sanctioned country can lower its price, change its marketing and distribution, and sell to countries other than the U.S. But again, whatever the reduced exports that finally result for the sanctioned country are, they should not be seen as a total cost because many of these goods could be consumed domestically or the inputs could be redeployed to produce other goods.

(ii) U.S. and Non-U.S. Export Financing

There has been no U.S. export financing available for Iran from the U.S. Export-Import Bank since 1990. The unavailability of such financing was clearly in force prior to executive order #12959 in 1995. The absence of

[11] Provided by an Iranian businessman residing in Dubai for a number of years.
[12] Smuggling is also a significant channel for getting around embargoed bilateral trade.

U.S. export financing has had several costs for Iran. First, Iran has incurred the differential cost between commercial trade financing and that afforded by U.S. government supported export financing programs. Second, the absence of U.S. trade financing may have resulted in lower trade financing for Iran from other countries, because countries provide export financing in order to compete with other countries. If the U.S. is not providing export financing for Iran, then there is less pressure for other countries to do so to compete with U.S. exporters. Moreover, U.S. sanctions may increase the perceived risk of Iranian financing and thus lower the availability (or increase the cost) of export financing from other countries.

To get a rough idea of the reduction in export cover, our simplifying assumptions were: (i) U.S. sanctions did not affect the volume and the terms of export cover from other countries (namely, non-U.S.) for Iran, (ii) none of the loss in U.S. export cover was replaced by other countries, (iii) this loss of export cover attributable to the U.S. was on average equivalent to 4.2% of Iran's export credits (this percentage figure represents the highest percentage share of Iranian imports from the UAE during the period 1995-1998 and is higher than the percentage share of imports from the U.S. during the period 1992-1995) and (iv) the financial cost to Iran of the loss of U.S. export cover is approximated by the cost of confirming Iranian letters of credit or LCs. These losses are in the range of $11-51 million, depending on the year (see Table III). These are losses for Iran, the sanctioned country, but the U.S. has lost nothing (except lower exports to Iran accounted for in reduced bilateral trade). Sanctions that embrace trade financing clearly have an effective impact on target countries, but not on the U.S. (except with regard to U.S. exports, which are already accounted for).

(iii) IMF/World Bank Financing

Severed U.S.-Iranian relations have essentially meant that since 1980 the U.S. has opposed any assistance to Iran from international organizations. In the case of the IMF, the U.S. has had no reason to do anything as Iran has so far decided not to apply for an IMF program (namely, loan). Iran has been much more interested in borrowing from the World Bank. Predictably, the U.S. has opposed World Bank financing of Iranian projects and has at times lobbied other members to oppose financing for Iran. We have identified a number of Iranian projects, with a total investment of $1.09 billion, which were shelved by the World Bank. On the one hand, if Iran could have financed these projects with assistance from the World Bank, its interest rate would have been roughly 7% per annum. On the other hand, Iran's cost of capital in 1999 was 9-9.25% per annum on the private markets.[13] Thus the estimated cost to Iran of U.S. pressures was roughly (9.0%-7.0%) x $1.09 billion for the term of these loans, namely, $21.7 million annually over the life of the projects. Additionally, the unavailability of World Bank funding might have discouraged private lenders to lend to Iran or to increase their interest rates and fees on Iranian loans.

The U.S. has used the World Bank and the IMF to extend the reach of its sanctions’ policy. While this approach has been an effective weapon in the U.S. sanction arsenal, it will invariably damage the long-term credibility of these international financial institutions.

(iv) Cost and Reduced Availability of Commercial Financing

U.S. sanctions could have increased Iran's cost of capital for a number of reasons. The withdrawal of U.S. commercial banks from lending to Iran would mean less competition to supply Iran with capital and thus a

[13] Information supplied by The World Bank staff.

somewhat higher cost. A negative economic perception of Iran (higher risk) imparted by U.S. sanctions could affect third countries' assessment of Iranian investment risk, again increasing Iran's cost of borrowing. Additionally, the cloud of a secondary U.S. boycott of third countries' transactions with Iran could deter their lending to Iran and thus further raise the cost of borrowing for Iran.

LC confirmation fees are a direct reflection of a country's short-term credit risk. In Iran's case, the country's domestic economic conditions, current account balance, oil prices and revenues, debt rescheduling, arrears and U.S. sanctions affect this fee. The size of this fee is recent years has been 4-5$^{1}/_{2}$% in 1991-1992, 18-20% in 1993-1994, 7-10% in 1995-1996, 4-4.75%in 1997, 3-5% in 1998-1999 and 1-1.4% in 2000.[14] Second, we have talked with a Middle Eastern banker who has lent to Iran to get a sense of his feel for the market. Based on these three premises we estimate, albeit unscientifically, that Iran's cost of capital may have been adversely affected by U.S. sanctions in the range of 0.5-0.75%. We therefore estimate the additional borrowing cost to Iran in the range of $29-164 million, depending on the year (see Table III).

Thus sanctions have had a significant effect on Iran's cost of capital, while imposing little burden on U.S. financial institutions. This same effect can be expected in the case of other countries under U.S. sanctions.

(v) Higher Debt Rescheduling Fees

During the period 1993-95, Iran's ability to finance its external debt deteriorated because of low oil prices, depreciation of the dollar and a surge in imports. In 1993/94, Iran managed to refinance its commercial debt. In the case of its official debt, Iran wanted to generally reschedule under the auspices of the Paris Club as opposed to a number of bilateral reschedulings. The U.S. opposed the Iranian request, and Iran was forced to take the bilateral approach. The first agreement was with Germany, providing Iran with a two-year grace period, a four-year repayment period of principal and interest at 5-7% per year.

If the U.S. had not opposed Iran's Paris Club rescheduling, Iran would have received Standard Paris Club terms. This would have entailed rescheduling at market interest rates (0.5% below Iran's rate), a repayment period of over ten years, and a five or six year grace period. Leaving aside the cost of a shorter grace period, it appears that at least Iran's interest payments (on its stock of official debt) were higher by 0.5%, depending on the year, translating to a burden of $8-55 million. U.S. objections to Iran's Paris Club rescheduling did not, of course, translate to a loss for U.S. interests.

(vi) Reduced FDI

Sanctions have reduced the overall attractiveness of investment in Iran and this has been especially the case as a result of U.S. threats of secondary boycotts. Still, with all of these negatives, Iran has attracted investors to its energy sector – over $5 billion committed in total investment for the three phases of the South Pars gas field. In 1999, Elf, and Agip agreed to invest $1 billion to develop an offshore field (Doroud); Elf, Agip and Bow Valley Energy are investing $300 million to develop another offshore field (Balal); and in late 1999, Shell signed a contract to redevelop two other offshore fields (Soroush and Nowruz). Between Pars and these offshore fields, committed FD1 in the energy sector during 1997-1999 has exceeded $7 billion. With the discovery of the Azadeghan oil field in 1999 and its estimated reserves of up to 25 billion barrels and a capacity of 400,000-500,000 barrels/day, Iran will continue to attract foreign investors for its energy sector. While sanctions have reduced the level of FDI in Iran's energy sector, their most important effect on Iran's energy

[14] Data supplied by a large non-U.S. commercial bank.

sector might have been a slowdown in FDI through delayed or postponed FDI (Iran’s giant North Pars gas field is still not under development).

The story is different when it comes to FDI outside the energy sector. Iran has not attracted a significant volume of FDI. The reasons for this failure are: (i) Iran's unattractive policies towards FDI, (ii) Iran's sub-par economic performance and outlook, (iii) its less than attractive business climate, (iv) bad world press and (v) U.S. sanctions. Given the state of the Iranian economy, companies are not willing to jeopardize their relations with the U.S. unless it is worthwhile, as may be the case in Iran's energy sector. For example, total global FDI was $865 billion, with $9.2 billion for the Middle East and North Africa and only $85 million for Iran (Saudi Arabia $4.8 billion, Egypt $1.5 billion and Morocco $847 million).[15] Iran has roughly 1% of the world's population and if it attracted a commensurate share of the world's FDI, this would have been $8.6 billion as opposed to its actual flow of $85 million, which is less than 1% of its share based on population. Similarly, Iran has 0.5 % of the world's GDP and if it attracted a commensurate share of the world's FDI, this would have been $4.3 billion (The World Bank, 2000).

What proportion of the shortfall in FDI is due to Iran's policies, to U.S. sanctions and due to other factors outside Iran's control? What has been the cost to Iran of lower FDI resulting from U.S. sanctions? Precise answers to these questions are beyond the scope of this paper. We can offer educated guesses. Investments in the energy sector should be separated from other investments. In the case of the energy sector, investments (with the exception of the trans-Iranian pipeline for Caspian oil) are moving ahead. Our best guess is that these investments (totaling roughly $10-12 billion if North Pars is also included) have been delayed by about five years. In the area of non-oil FDI, our best guess is that FDI in Iran would have been on the same order as that in Egypt (excluding the energy sector). Thus Iran may have lost about $0.5-1.0 billion per year in FDI in recent years. We can, however, say that under better political circumstances (including the absence of U.S. sanctions), much higher FDI might have been possible. This could have been especially the case with the development of the South and North Pars fields and peripheral petrochemical complexes. This would have benefited Iran. Moreover, it would have benefited the U.S. and could have resulted in significant exports to Iran.

What did these delayed (in the case of the energy sector) and reduced (in the case of the non-energy sector) FDI mean for Iran? In the case of the delayed FDI, we estimate the loss at roughly 7% (as a discount factor) of the FDI that was delayed, thus $700-840 million; but these losses are of limited duration and disappear when the projects come on line. In the case of non-energy sectors we estimate that Iran lost about $0.5-1 billion in foreign exchange inflows per year.

Sanctions on FDI are a very sharp double-edged sword. They can impose a heavy loss on the target country by delaying FDI. At the same time, the burden on the U.S. may be even more severe, because it is not only a delay, but will also mean that U.S. entities will not participate in major projects that will, instead, go to companies from other countries; this may, in turn, affect future related JV projects. Moreover, the effects of this form of economic sanction may linger far beyond the lifting of sanctions.

[15] The numbers for Iran may appear to be low given the recent FDI announcements in the energy sector. But the UNCTAD figures are actual flows, whereas the FDI in Iran's energy sector are commitments, which will flow over a number of years.

(vii) Pipelines Across Iran and Oil Swaps

Three of the five Caspian littoral countries (Azerbaijan, Kazakhstan and Turkmenistan) are landlocked; only Iran and Russia have access to the seas. There are a number of routes for taking Caspian oil to market through pipelines. The most prominent routes are through Turkey (Baku-Ceyhan), Afghanistan-Pakistan, Iran, and expanded routes through Russia (Baku-Novorossiisk) and Georgia (Baku-Supsa). The U.S. has supported the Baku-Ceyhan route, while most oil companies in private support the Iran route as the most economic because of the cost of construction, the number of countries to be transited and the location of the terminal and its existing facilities. Assuming this to be the case, what has Iran lost (or will Iran lose) because of U.S. opposition to an Iranian oil pipeline route? Iran's potential benefits from Caspian oil pipelines fall into a number of categories: pipeline construction in Iran, pipeline operation and maintenance in Iran, annual payments for transit and loading fees, and business reputation enhancement for Iran.

There are two options for an Iranian route. The first option would be to build a new Trans-Iranian pipeline dedicated to Caspian oil. The second option would be to build a new pipeline to hook up with Iran's existing network. As to the first, our best guess (based on the estimates of a person formerly in this business) is in the neighborhood of $2 billion for a 1 million barrel per day pipeline, with roughly 30% of this in local Iranian content. As to the second approach, the Iranians have put forward a two-phase pipeline program. In the first phase, the Iranians propose 300,000 barrels/day; they claim a construction cost of $450 million (50% local Iranian content), as they will be using a part of an existing pipeline network. For the second phase they see an additional 1 million b/d at the cost of $1.2 billion (30% local content).

The cost of the Ceyhan route is placed at $3.2 billion (Petroleum Economist, 2000). For our purposes, we assume a $2.0 billion cost for a 1-million b/d pipeline through Iran. This $2 billion of FDI would involve $600 million in Iranian contracts over roughly a two-year period, or $300 million of contracts per year. Our estimates for pipeline operation and maintenance are on the order of $50 million/year. As to transit fees, loading fees and annual lump sum payments, our best guess (looking at Stevens' historical discussion and talking to various executives) is a number close to $1 per barrel. This number is a matter of negotiation and also depends on the attractiveness of alternative routes. Finally, we assume that the volume would be on the order of 1-1.5 million barrels per day. In Table III, we summarize these results.

In addition to these benefits from pipelines, better U.S.-Iranian relations could allow Iran to swap oil from Caspian sources for its northern refineries for Iranian crude on the Persian Gulf. Based on current refinery deliveries, Iran could today conservatively use 500,000 b/d of Caspian crude for its northern refineries and this could be conservatively expanded to 750,000 b/d in two years. In the past such a swap could have benefited Iran to the tune of $0.50/barrel or roughly $90 million per year and could conservatively increase to $135 million per year in 2002. The annual loss from oil swaps ($90-135 million) and transit fees ($365 million) are financial losses, whereas the annual loss from construction and maintenance ($50-350 million, depending on the year) is only largely a loss in foreign exchange because Iran would have to devote real resources to these endeavors.

(viii) Summary of the Impact of Sanctions on Iran

Direct merchandise trade between the U.S. and Iran has declined significantly because of sanctions, but the trade impact has been limited. As for Iran's exports, its oil revenues have been very little affected by sanctions; and its non-oil exports, while modestly affected, are not a total loss because some of the goods may have been diverted to other countries and some may have been consumed domestically. As for its imports, Iran can buy most of the goods previously imported from the U.S. from other countries and has continued to import many U.S. goods, especially through Dubai (albeit at a 20% markup); only the higher cost of U.S. imports through third countries, because of the markup, is a real out-of-pocket cost to Iran. However, to the extent that sanctions have had a deleterious effect on Iran, this has been indirect and through other channels – higher financing cost, retarded or stalled oil and non-oil joint venture projects (which, in turn, have impeded oil capacity development and thus possibly reduced oil production and oil exports) and the like. Moreover, non-quantifiable longer-term indirect effects of sanctions may turn out to be the most significant effect of sanctions.

In Table III, we present a summary of our estimate of the direct and indirect impact of U.S. unilateral sanctions on Iran. Depending on the year, the annual cost to Iran of U.S. sanctions ranges from a low of $909 million to a high of $1.4 billion.[16] These estimates exclude the effect of a number of factors resulting from sanctions, which we could not quantify such as reduced non-energy FDI. Still, these figures are quite revealing with regard to the relative size of trade losses and other losses to Iran because of sanctions. Our estimate for annual export losses is $25-110 million. Moreover, as mentioned earlier, trade loss figures are more precisely losses of foreign exchange, whereas non-trade losses are both a loss of foreign exchange and a loss of net resources.

The preoccupation with trade losses, though understandable because of the relative ease of quantification, may be misplaced at least in the case of countries such as Iran. Iran’s major oil export is oil, a largely fungible commodity that can be easily diverted to other markets. For other countries exporting a significant percentage of their manufactured goods to the U.S. (in some cases specially customized for the U.S. market), these losses could be much more significant. On the import side, Iran has managed to source most of its previous imports away from the U.S.

Summary of Impact of Sanctions on the U.S.

As to be expected, the losses to the U.S. are different in nature and in form than those to Iran.

Ruptured U.S.-Iran relations and sanctions may have resulted in as much as $0.3-2.4 billion reduction in direct U.S. merchandise exports to Iran, depending on the year in question over the period 1980-1998 (see Table II). However, this loss should not be seen as a total cost to the U.S., but should instead it be viewed as an upper bound of foreign exchange losses for the United States. In part, these goods could have been exported to other countries, consumed domestically, or the inputs used to produce other goods for exports or for domestic consumption. Most importantly, when sanctions are lifted, this level of exports to Iran may be expected to be restored with time.

The loss to U.S. banks from not lending to Iran would be minimal in our view. Yes, U.S. banks have marginally fewer opportunities, but they could increase their loans elsewhere and get slightly less return and/or reduced risk diversification. But the cumulative effect of ruptured financial relationships, if continued for some time, could impose a cost on the U.S., especially once Iran’s economic performance improves.

The implied losses for the U.S. energy industry from non-participation in Iran are somewhat different than those for Iran. The U.S. energy industry can no longer participate in South Pars (as all phases are already contracted),

[16] Preeg's estimate of the impact of U.S. sanctions on Iran is $1.2-2.3 billion per year during 1995-1997 and $1.5-2.6 billion per year during 1998-2000. These figures represent losses in five categories: prohibition on U.S. imports, prohibition on U.S. exports, prohibition on marketing to third countries, prohibition on U.S. investments and ILSA sanctions, and U.S. pressures to limit economic assistance. These figures are much larger than ours; Preeg's single largest item is prohibition on U.S. imports ($0.5-1.0 billion).

North Pars (in all likelihood), Doroud, Balal, Souroush, Nowruz and Azadeghan (in all likelihood). All of this is a tremendous loss for the U.S. energy industry. It could be further magnified because over time non-U.S. forms will have much more information on and familiarity with Iranian oil and gas fields. Thus, even when sanctions are relaxed, U.S. firms may be less competitive in winning related and new projects in Iran. To place a rough estimate on the losses for the U.S. energy industry, we assume that the U.S. could have won about 60% of these projects and that the extra (above opportunities in the U.S.) return would have been 10% on the total investment. This results in a figure (loss of profits) of about $600-720 million as of now (namely, excluding new projects) and this loss will continue to accrue even after sanctions are lifted. As to FDI in the non-energy sector, we believe that the situation is very different. U.S. corporations could have found attractive alternative investments elsewhere.

U.S. companies would be the major beneficiaries of any pipeline (Trans-Iranian or otherwise) construction. If U.S. sanctions in the end meant that a Baku-Ceyhan or some other non-Iranian route is chosen, then U.S. companies (engineering firms and oil companies) may lose little if anything. If, however, U.S. sanctions mean that pipeline construction is postponed for a number of years, then the loss will be felt. But even in this case the maximum loss (spread over a number of years) to U.S. firms is the difference in the construction cost of the Baku-Ceyhan route and an Iranian route (since theoretically the U.S. government could pay this and the pipeline would go ahead). This cost difference is estimated at $1.2 billion spread over three years; we assume that a range of 0-50% of this could accrue to U.S. companies. In the case of oil swaps the outcome will depend on relative negotiating skills; we assume that the oil companies would receive a benefit equal to that of Iran (with 50% of this benefit accruing to U.S. companies, for a figure of $45 million per year and increasing to $67.5 million in 2002). These results are summarized in Table IV. As in the case of Iran, the major loss for the U.S. may lie in the long-term impact of unqualifiable items, namely, ruptured business relations on developing and financing projects and supplying the real resources required; these losses, while exceeding estimated direct trade losses, will continue for many years after the lifting of sanctions.

Conclusion

Over a period of twenty years, U.S. sanctions on Iran have had a significant economic cost for the U.S. as well as for Iran. Direct merchandise trade between the U.S. and Iran has declined significantly, but the real cost of sanctions to each country is not a result of reduced bilateral trade since much of this trade has been diverted to third countries. What net loss in trade remains should be viewed more precisely as purely a loss in foreign exchange. The real cost of sanctions for both countries, however, is a result of impeded FDI, missed JV opportunities and broken financial relationships. These costs are likely to accrue even after sanctions are lifted, while bilateral direct trade may be restored much more quickly.

International business is much more than merchandise trade. It is built on deep-rooted business relations. It is nurtured by continual contact and dialogue. It grows from dreams into projects designed and developed by would-be partners from across the globe. It is financed by financial relationships supported by partners from a number of countries. The realization of such projects in turn result in FDI, in technology transfer, in increased trade in goods and services, and in the sharing of profits. Even when sanctions are removed, in many cases economic relations will not go back to where they were before the imposition of sanctions. The legacy of broken economic and financial relations can take many years to repair and re-establish.

Sanctions are one of the many ways that countries interfere with international trade and finance. When countries use tariffs or traditional non-tariff barriers (NTBs), their goal is limited to affecting some aspect of international economic or financial relationship with the target. In the case of sanctions, a non-traditional NTB, the goals are usually much more ambitious – to change economic relations, to inflict adverse economic conditions on the target, in turn causing a fundamental change in policies, a change in government and more. But invariably there is little or no connection between the instrument (the sanction) and the policy goal. Sanctions are thus a shotgun approach to international economic, financial and political relations.

While the imposition of tariffs or NTBs usually invites retaliation and is thus avoided, in the case of sanctions retaliation by the target is hardly mentioned. The practical reason for this blind spot is that only one major country uses this instrument with frequency – the United States – and the countries that are its target are invariably either not in a position to retaliate or the significance of their retaliation is small or underestimated. Thus while economists warn against the dangers of tariffs and NTBs, very little is said about the dangers of sanctions. But sanctions impose a significant cost on target countries and on the U.S. The costs of sanctions are underestimated for a number of reasons including the fact that estimates usually incorporate only the reduction in direct merchandise trade (ignoring services, costs of capital, FDI, other capital flows etc.), assume that sanctions have an effect only while they are in force (the residual effect after the lifting of sanctions is not taken into account) and ignore the impact on long-term business relations with the target and with third countries (such as reducing the perceived reliability of U.S. firms).

The success of sanctions is exaggerated because eventually policies in the target country do change, not necessarily because of U.S. sanctions, but because of the passage of time. Most importantly, sanctions do not cost U.S. lives, their cost is somewhat hidden (requiring no budgetary allocation), they do not make daily headlines and success can always be claimed to be around the corner, making sanctions a popular instrument for politicians.

The experience with sanctions on Iran confirms much of the above. The United States was frustrated with Iran and U.S. politicians wanted to appear "tough" with Iran, thus a policy of continually escalating sanctions on Iran over a period of roughly twenty years. While sanctions have impacted direct bilateral merchandise trade (largely losses in foreign exchange only), the non-trade impact of sanctions appears to be much more important because it represents a real cost to both sides. This cost will continue to accrue even after sanctions are lifted. The objectionable policies that are presumably followed by Iran have not changed. There is little indication of any impact on Iranian policies except that U.S.-Iranian business relations are likely to be adversely affected for some time.

For the future, the United States may become more restricted in its use of economic sanctions. More and more countries can be expected to join the WTO and the significance of the WTO in global trade and finance should increase; sanctions could invoke costly WTO sanctions. More and more countries could also join regional trading blocks, increasing the cost of sanctions to the U.S. Better data and more comprehensive studies may convince the U.S. electorate (and in turn U.S. politicians) that sanctions are <u>not</u> usually a cost effective policy option. Finally, we hope that a sanction impact study will be required of all proposed sanctions. This will force politicians to think through their expected chain of events and to comprehensively address the costs and benefits of sanctions, while affording a useful benchmark to assess the success or failure of sanctions.

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TABLE I

U.S. ACTIONS SIGNIFICANTLY AFFECTING
U.S. – IRANIAN ECONOMIC RELATIONS

Date	Authority for Action	Description	Status
November 8, 1979	Arms Export Control Act	President Carter embargoes military exports to Iran.	Active
November 12, 1979	Trade Expansion Act	President Carter embargoes oil imports from Iran.	Revoked by EO #12282 on Nov. 19, 1981.
November 14, 1979	Executive Order #12170	President Carter freezes Iranian assets in U.S. banks and in their foreign subsidiaries.	Active
April 7, 1980	Executive Order # 12205	President Carter embargoes all exports to Iran, excluding food and medicine.	Revoked by EO #12282
April 17, 1980	Executive Order #12211	President Carter prohibits all financial transactions between U.S. and Iran and their citizens; embargoes all imports from Iran; bans all travel to and from Iran; and impounds all Iranian military equipment already ordered and paid for.	Revoked by EO #12282
January, 19, 1981	Executive Order #12276	Directive relating to establishment of escrow accounts in London.	Ratified by EO #12294 in 1981 - Active
January 19, 1981	Executive Order #12277	Directive to transfer Iranian Government Frozen Assets.	Ratified by EO #12294 in 1981 - Active
January 19, 1981	Executive Order #12278	Directive to transfer Iranian Government frozen assets overseas.	Ratified by EO #12294 in 1981 - Active
January 19, 1981	Executive Order #12279	Directive to transfer Iranian Government frozen assets held by domestic banks..	Ratified by EO #12294 in 1981 - Active
January 19, 1981	Executive Order #12280	Directive to transfer Iranian financial assets held by non-banking institutions.	Ratified by EO #12294 in 1981 - Active
January 19, 1981	Executive Order #12281	Directive to transfer certain Iranian Government assets.	Ratified by EO #12294 in 1981 - Active
January 19, 1981	Executive Order #12282	Revocation of prohibitions contained in EO #12205 and EO #12211.	Ratified by EO #12294 in 1981
January 19, 1981	Executive Order #12283	Non-prosecution of claims of hostages for actions at the United States Embassy and elsewhere.	Ratified by EO #12294 in 1981 - Active

January 23, 1984	State Department Action	Iran added to list of governments supporting terrorism and thus placed under strict export controls.	Active
September 28, 1984	Export Administration Act	President Reagan further restricts exports of military and dual-use equipment to Iran.	Active
October 26, 1987	Executive Order #12613	President Reagan embargoes all imports from Iran into the U.S. but does not ban U.S. companies from buying Iranian crude and allows the imports of refined products (from third countries) using Iranian crude. He embargoes the exports of 14 specific items considered dual - use.	Active
November 7, 1989	State Department Action	$567 million in frozen Iranian assets are transferred (leaving $900 million and all Iranian claims under the Foreign Military Sales (FMS) program).	NA
March 15, 1995	Executive Order #12957	President Clinton bans all U.S. investment in the Iranian petroleum sector.	Active
May 6, 1995	Executive Order #12959	President Clinton prohibits all trade (exports and imports) and investments between U.S. and Iran. This prohibits all imports of refined products using Iranian crude, U.S. companies from buying Iranian crude and all financing of American trade or investments in Iran.	Active
August 4, 1996	Iran-Libya sanctions Act of 1996 (ILSA)	Imposes sanctions on non-U.S. companies that invest in Iran's energy sector in excess of $40 million in any twelve-month period.	Active
August 19, 1997	Executive Order #13059	President Clinton further expands sanctions against third countries that export to Iran.	Active

TABLE II

Estimated Reduction in Direct U.S.-Iran Merchandise Trade as a result of sanctions
(In billions of dollars)

Year	Askari et. al estimated reduction in U.S. exports to Iran	Askari et. al estimated reduction in U.S. imports from Iran
1980	1.5	0.8
1981	1.5	1.4
1982	1.9	1.1
1983	2.1	1.2
1984	2.3	2.4
1985	2.4	2.3
1986	2.2	2.8
1987	1.4	0.7
1988	1.3	1.6
1989	1.3	1.7
1990	1.2	1.6
1991	1.2	1.7
1992	0.7	1.6
1993	0.3	0.8
1994	0.5	0.8
1995	0.6	0.9
1996	1.0	1.3
1997	1.3	1.5
1998	1.4	2.0

TABLE III

SUMMARY OF LOSSES FROM U.S. SANCTIONS FOR IRAN*

(Millions of U.S. Dollars)

Effect	1995	1996	1997	1998	1999	2000	2001
Trade losses (higher import prices)	2.0	5	20	18	25	27	?
Official Export Financing	36-51	34-48	16-19	11-18	11-18	11-18	11-18
World Bank Lending	?	?	?	?	22	22	22
Commercial Financing	109-164	83-125	59-89	72-108	54-82	29-43	20-30
Rescheduling Fees	55	45	30	18	10	8	?
FDI (enery sector delayed)	700-840	700-840	700-840	700-840	700-840	700-840	700-840
FDI (non-energy)	?	?	?	?	?	?	?
Tourist Receipts	?	?	?	?	?	?	?
Oil Pipeline	?	?	?	?	300	300	415
Oil Swaps	90	90	90	90	90	90	135
Intangibles	?	?	?	?	?	?	?
Total	992-1202	957-1153	915-1088	909-1092	1212-1387	1187-1348	1303-1406

* These figures represent estimated real costs to Iran. Iran's total exports (non-oil) are somewhat lower due to sanctions but these are more precisely a loss of foreign exchange as opposed to a real burden. These lower estimated total export figures are in the range of $25-$110 million annually. Similarly, while we cannot estimate the cost of foregone non-energy sector FDI to Iran, we estimate the loss in foreign exchange at $0.5 -1 billion per year.

TABLE IV

Summary of Losses From U.S. Sanctions For The U.S.*
(Millions of U.S. Dollars)

	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
FDI (Non-energy)	5-10	5-10	5-10	5-10	5-10	5-10	5-10
FDI (energy sector)	700-840	700-840	700-840	700-840	700-840	700-840	700-840
Oil pipeline	110-140	110-140	110-140	110-140	110-140	110-140	110-140
Oil swaps	90	90	90	90	90	90	135
Financial services							
Intangibles							
Total	905-1080	905-1080	905-1080	905-1080	905-1080	905-1080	950-1125

* These figures represent estimated real costs to the U.S. Losses associated with energy sector FDI can be expected to continue for a number of years even after sanctions are lifted. U.S. total exports are lower due to sanctions, but these are more precisely a loss of foreign exchange as opposed to a real burden.

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