

THE IMPACT OF ECONOMIC SANCTIONS ON IRAN'S ECONOMY AND  
FOREIGN POLICY

A thesis submitted  
To the Faculty of the  
Graduate School of Arts and Sciences  
Of Georgetown University  
in partial fulfillment of the requirements for the  
degree of  
Master of Public Policy in Public Policy.

By

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Washington, DC  
April 15, 2011

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# THE IMPACT OF ECONOMIC SANCTIONS ON IRAN'S ECONOMY AND FOREIGN POLICY

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## ABSTRACT

The effectiveness of economic sanctions as a foreign policy tool is debated among policymakers. However, a rising tide of international support for sanctions gives today's sanctions against the Iranian government more hope than ever before. With the United Nations Security Council on board, and a large number of Iran's largest trading partners extending unilateral sanctions, trade gaps formed by one country are less likely to be filled by trade with others. The statistics point in the direction of a suffering oil industry in Iran due to a lack of investment in modernizing its infrastructure. Unemployment and high inflation continue to put pressure on an already-volatile, suppressed population. This paper analyzes these dynamics in the context of answering the question of what constitutes an environment conducive to sanction effectiveness and whether sanctions hold promise in the case of Iran. In the long run, stagnation in the primary industry of a country cannot be sustained and thus the most recent round of sanctions, if sustained over time, has a higher-than-ever chance of success in forcing the Iranian government to make concessions in its nuclear program and terrorism support.

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## I. Introduction

Any history of economic sanctions against Iran necessarily begins with the birth of the Islamic Republic in 1979. The revolution of 1979 began what has been termed Iran's "war years" and it marked the beginning of many years of rocky relations between the United States and Iran. The hostage crisis of 1979-1981 marked the first instance in which the United States imposed an economic sanction on Iran, taking the form of a boycott. Since then, sanctions against Iran have come from three main sources: the United Nations, the United States, and the European Union. Individual countries are also increasingly imposing unilateral sanctions on Iran in 2010.

This thesis provides an overview of the recent history of the Iranian economy as well as a detailed history of sanctions imposed upon it. It analyzes the impact of U.S. and international economic sanctions against Iran and assesses their effectiveness in achieving certain policy goals. The paper also discusses the factors that determine the success of sanctions. An emphasis will be placed on international cooperation, as represented by the varying levels of business conducted between Iran and its trade and business partners. Within the scope of international cooperation are United Nations sanctions, unilateral country sanctions and cooperation with U.S. sanctions, as well as international private organizations' and businesses' compliance.

This thesis addresses the effectiveness of sanctions as a tool to influence Iran's foreign policy decisions and to curb the country's nuclear program development. Experts disagree on the effectiveness of economic sanctions in altering any target government's behavior. The answer to this question is still up for debate.

International support for sanctions against Iran has never reached the level it is at today. The nature of economic sanctions has changed due to changes in the level and nature of international support and this change is a central focus of this paper.

Additionally, it has become increasingly difficult for a business, individual, or country not to comply because of the stigma associated with doing business with a government that is now widely criticized for its illegal nuclear program and terrorist support.

There is evidence that economic sanctions have had and are currently having an impact on Iran's economy. The focus of this thesis will be on the most recent round of sanctions on the energy sector, as measured by the level of production and of export of oil, which have been hard hit by the international isolation that these sanctions have imposed, in addition to other factors. My objective will be to determine whether economic sanctions have been successful in the case of Iran, and specifically whether the most recent round is creating an economic and a policy impact.

In the context of providing a historical narrative of the history of sanctions against Iran, the purpose of each sanction will be discussed in terms of the effect it was intended to produce, the agency or individual that is being targeted with the sanction, and who initiated the sanction.

This study takes into account the conditions that have developed along the course of the history of sanctions against Iran. It will address the question of whether Iran's economy is indeed suffering from sanctions, what it means to be affected by sanctions, what factors make sanctions most effective, and a number of other related questions.

## II. Literature Review

### *Forms of Sanctions*

Caruso (2003) defines three types of sanctions: boycotts, embargoes and financial sanctions. He describes boycotts as “a restriction of imports of one or more goods from the target country,” the purpose of which is to reduce the competitiveness of the target country’s exports, to hurt the target country’s foreign exchange earnings and to cause damage to one of the target country’s industries. Under an embargo, certain goods are forbidden from being exported into the target country. The third type of sanction, a financial sanction, limits or outlaws lending and investment in the target country. This includes the freezing of assets such as in the case of Iran. (Caruso)

### *Measuring Sanction Effectiveness*

A common regression equation used to model the impact of sanctions in general on a country’s economy uses a bilateral trade variable as the dependent variable, explaining the impact. This model is called the gravity equation and has been used by many economists with varying specifications. Tinbergen (1962) used the gravity equation but put it in logarithmic form, for instance. Caruso (2003) added variables to account for the effect of any political conflicts between the two countries under analysis. He analyzed the impact of sanctions on bilateral trade between the U.S. and other countries between the years 1960 and 2000. His equation took the form of:

$$\ln \text{TRADE}_{ijt} = \beta_0 + \beta_1 \ln \text{GDP}_{it} + \beta_2 \ln \text{GDP}_{jt} + \beta_3 \ln \text{POP}_{it} + \beta_4 \ln \text{POP}_{jt} + \beta_5 \ln \text{DIST}_{ij} + \beta_6 \text{LMSANC} + \beta_7 \text{XSANC} + \beta_8 \text{MULTSANC} + \beta_9 \text{INTERWAR} + \beta_{10} \text{INTRAWAR} + u_{ijt}$$

To account for varying intensity of sanctions, he used two separate variables to represent sanctions. LMSANC represents moderate trade restrictions and financial sanctions and XSANC represents extensive ones. MULTSANC is a variable indicating whether there are other countries that support the sanctions. INTERWAR indicates whether the target country is involved in an inter-state war and INTRAWAR takes into account whether the target country is experiencing any conflict within the state such as armed conflict and civil war. All of the above variables are dummy variables.(Caruso)

Caruso's intention was to look specifically at the effect of political conflicts, since Caruso is interested in political interactions between countries and he looked at the impact on trade flows. Caruso found that bilateral trade is only affected, and negatively affected, when the sanctions are extensive and comprehensive. When sanctions are moderate and limited, he found that there is not a large impact on bilateral trade. A few others have carried out studies examining the impact of sanctions on the level of trade between two countries or among a group of countries.(Caruso)

Eaton and Engers (1999) argue that sanctions more often succeed if the objectives are modest and they lay out other factors that lead to sanctions being effective. They carried out a quantitative study and found that sanctions are more effective when the costs to the sender are small relative to the gain achieved if the sanctions are successful in modifying the behavior of the target and that the cost of compliance for the target must be higher than the punishment cost. They also found that success requires that there be continued dealings between the sender and the target into the indefinite future. In Iran's case, the costs are indeed higher than those of compliance, and Eaton and Engers' framework has a place for this seemingly irrational behavior. They would call Iran a



stubborn target in that it is attempting to maintain its image as strong and unaffected by outside forces. The study uses probabilities and costs to determine whether compliance will occur. They emphasize, however, that in order to adequately assess sanction effectiveness quantitatively, econometric methods grounded in theory are required.(Engers and Engers)

There is evidence to suggest that sanctions have a higher chance of achieving their goals the longer they are kept in place (Brady, 1987; Daoudi and Dajani, 1983). Thus, the current lack of a change in Iran's position on the nuclear issue and in its terrorism support should not be the final say in sanction effectiveness. Allen defines sanction failure as the sender deciding to end the sanctions in lieu of another solution and sanctions are currently in full strength and show no sign of letting up. Additionally, Allen (2005) finds that a target country's political structure has a significant impact on their response. She points out that sanctions are effective when they put an economic cost on the population, which in turn puts political pressure on the government, leading to behavior changes. (Allen) In the case of Iran, there is a heavy cost being imposed on the people, such as higher raw materials costs for business owners. There is also evidence of impatience among the population.

Behavior changes are certainly evident in the Iran in recent years. Although it is not a democratic society, the populace has historically expressed its discontent and is doing so today in demonstrations, strikes, and the like. If the sanctions have a wide enough impact so as to reach even the portion of the population that is receiving a benefit from its support of the regime, there could be an even more significant impact. Behavior changes extend beyond the Iranian people. The Iranian government has recently exhibited

behavior that points to it being under a great deal of pressure. A heightened willingness to use force in suppressing its people and politically unfavorable domestic economic policy decisions are two evidences of the impact of sanctions on the Iranian government.

Furthermore, when sanctions are relatively more targeted, as they are in the case of Iran today, they have been shown to be more likely to lead to the recipient altering its behavior.(Kirshner) Although Allen’s work focuses on democracies, the specification of her models is informative since she accounts for the level of sanctions, the level of international cooperation on sanctions, and the domestic politics. In one portion of her study, she looked at the relationship between the time until sanctions end and the variables mentioned above.

There is disagreement among researchers in terms of the effect of international cooperation on the chance of success of one country’s sanctions on another. Allen found a statistically significant negative relationship between international cooperation and likelihood of success. This, she explains, is due to the fact that it becomes harder to enforce and coordinate over time when other countries become involved.

### *Impact of Sanctions*

A Government Accountability Office (GAO) report concluded that a sufficient U.S. government-sponsored study of the effect of sanctions has not been carried out and that the Iranian government’s global trade ties are an impediment to the success of U.S. sanctions in altering Iran’s behavior.(Iran Sanctions - Impact in Furthering U.S. objectives is Unclear and Should be Reviewed) Thus, international support is critical and the December 2006 start to multilateral United Nations Sanctions is highly significant as

well as individual countries' increasing commitment to imposing sanctions on Iran. The GAO report found that it is possible that U.S. sanctions have reduced foreign investment in Iran's oil sector, which is the main source of government revenue. (Traveling and Living Abroad - UK Foreign and Commonwealth Office)

The Department of the Treasury has stated that financial pressure from sanctions has caused Iran to become more isolated from the global community.(Iran Sanctions - Impact in Furthering U.S. objectives is Unclear and Should be Reviewed) Other experts such as those at the U.S. Energy Information Administration add that in addition to sanctions, war, low investment levels (which is presumably partly due to sanctions), and a high rate of deterioration in Iran's oil fields compound the problem.(U.S. Energy Information Administration) Furthermore, political instability and unrest among the population is an added factor that is putting pressure on the economy and on the regime. If current sanctions, which are more targeted and more stringent than ever before, are maintained and made even more sophisticated with time and information, the evidence shows that they have the potential to affect Iran's economy and potentially deter them from continuing on the current path of nuclear development.

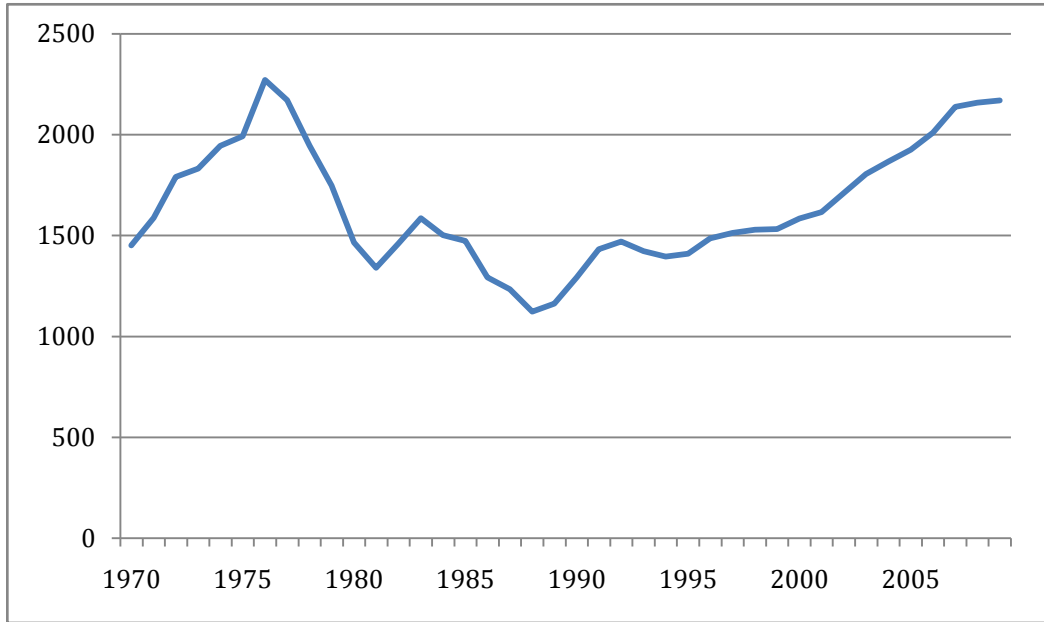
### III. The Iranian Economy

#### *Economic History*

Iran experienced rapid economic growth during the twenty years leading up to the Revolution of 1979. Its per capita GDP was at twice the level of other Middle East and North Africa (MENA) countries in the mid-1970s.(Hakimian and Karshenas) Although it was not the intended effect, Iran's import substitution industrialization (ISI) strategy led to its becoming more dependent on oil export revenues due to the fact that the country needed the revenues to finance intermediate and capital goods imports for the industrial sector which was highly protected.(Hakimian and Karshenas) For about twenty years after the Iranian Revolution, the country's industries thrived and modernized, Iran's ties with the global economy grew, and a thriving private sector was created, in part, with large public sector investments in infrastructure, industry, agriculture, and hydrocarbons. (Amuzegar, The Iranian Economy before and after the Revolution) During this time, although there was heavy government involvement, experts believe that this did not crowd out private sector involvement and between the years 1960/61 and 1977/78, national income rose from around \$4 billion to around \$77 billion and crude oil exports rose from one million barrels per day (mb/d) in 1963 to four mb/d in 1971, to 5.4 mb/d in 1974, to 4.5 mb/d in 1979 just before the revolution. (Amuzegar, The Iranian Economy before and after the Revolution) There is speculation that the decrease in exports between the years 1974 and 1979 is due to the U.S. and Saudi Arabia's joint actions to put downward pressure on oil prices to cause financial pressure on Iran's economy.(Cooper) The overall upward trend in per capita GDP, which is evident below in Chart 1, was largely driven by oil income, however since oil's share in the country's GDP doubled

between the early 1960s and the early 1970s, creating an economy that would prove to be highly sensitive to upward and downward movements in the price of oil. (Amuzegar, The Iranian Economy before and after the Revolution)

Chart 1. GDP per capita (constant 2000 US\$)

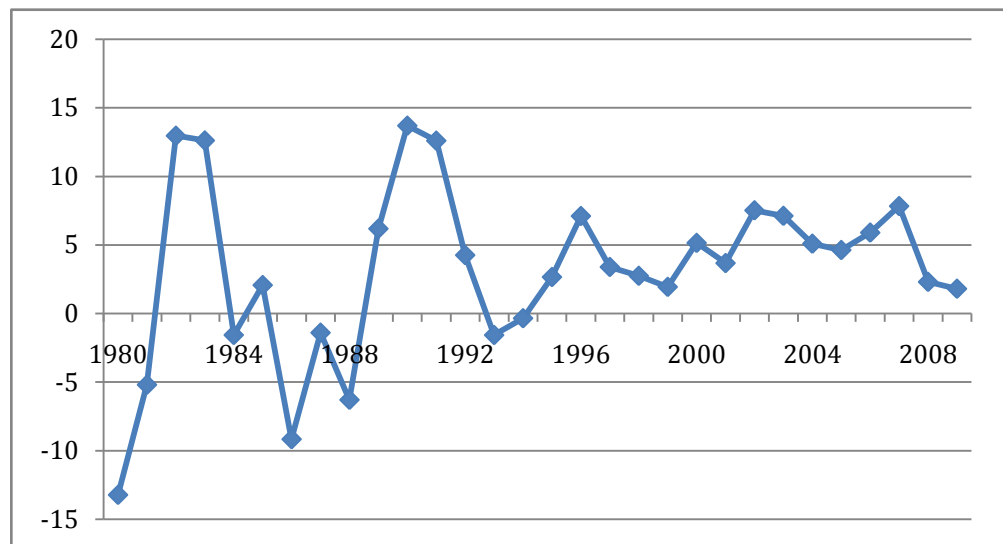


Data Source: World Bank World dataBank. World Development Indicators (WDI) & Global Development Finance (GDF)

The trough in the year 1980 signifies the impact of the Iranian Revolution, which began in 1979, and the continued lowering of per capita GDP until the year 1988 is due to the Iran-Iraq War. During this time, discontent was growing among the people and nationalization extended to much of the country's industries and its banking and insurance sectors. (Hakimian and Karshenas) Also during this time, Iran experienced foreign exchange shortages and oil revenue shortages, which led to budget deficits and high inflation and the government began to control foreign exchange, interest rates and prices on many products during this period.(Hakimian and Karshenas)

Chart 2 below demonstrates the slow, volatile, and at times negative, growth characterizing this period of Iran's economic history.

Chart 2: GDP Growth, Annual %



Data Source: World Bank World dataBank. World Development Indicators (WDI) & Global Development Finance (GDF)

A policy of heightened government control over virtually all aspects of the market led to price distortions and slow growth was coupled with low labor productivity levels, which Hakimian and Karshenas attribute to low investment, lack of industrial renovation, and foreign exchange and raw materials shortages, which stifled the country's efficient use of labor and other inputs. (Hakimian and Karshenas) It is at this point in the year 1979, when the revolution had just started, that the US imposed its first economic sanctions on the Islamic Republic of Iran.

*Conditions in the Iranian Economy*

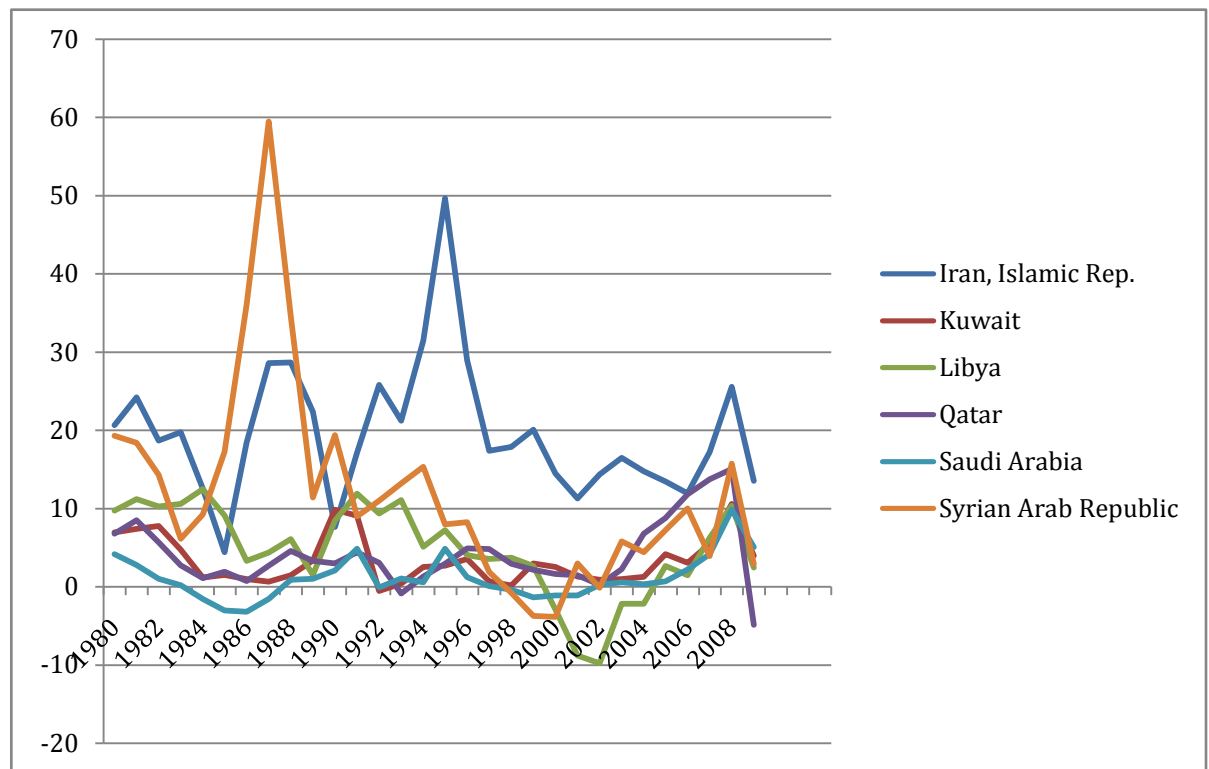
Today, 50 percent of government revenue is derived from oil exports and 80 percent of total exports comes from crude oil and its derivatives. (U.S. Energy Information Administration) Thus, the Iranian economy is largely dependent upon its oil industry and the price of oil. Over the years, boosted oil revenues from the heightened price level have rescued the Iranian economy. In recent years, however, oil production has subsided causing budget issues that have pushed the government to reduce energy and food subsidies. Oil production has been said to have gone down due to a number of factors, including wars, low investment, sanctions, and the natural decline of mature oil fields.(U.S. Energy Information Administration)

Unemployment has plagued the economy for many years and continues to do so today at an increasing rate. Currently, the rate is at 14.6 percent up from 10.3 percent in 2008.(CIA) The country has historically experienced a lack of skilled labor due to a chronic brain drain. A brain drain occurs when a number of possible conditions in a country cause large amounts of the population to exit, normally in search of better or more opportunities. It has been estimated that 25 percent of Iran's population that holds a tertiary education is living in the Organization for Economic Cooperation and Development (OECD) countries, placing Iran at the top of the list of countries with a brain drain problem(Carrington and Detragiache).

The impact of Iran's domestic and foreign policy decisions has long-term consequences for the country. The International Monetary Fund (IMF) has estimated inflation at 10.8 percent in 2009 and many suspect that the recent subsidy cuts will further exacerbate the inflation problem in Iran putting inflation at 30 percent(Fassihi). The following graph demonstrates comparative inflation rates in similar Middle Eastern

countries. The data shows that Iran's inflation rate is higher than its peers in the region, it is increasing at a much higher rate, and also that price level is relatively more volatile.

Chart 3: Inflation, Consumer Prices (Annual %)



Data Source: World Bank Development Indicators

The combination of low investment and labor productivity levels, increasing debt, high unemployment levels, high inflation levels, population pressure, oil price volatility, and a worsening trade deficit makes Iran particularly susceptible to external shocks such as the isolation resulting from economic sanctions. (Alizadeh)



#### IV. Sanctions History

On November 4, 1979, 52 U.S. citizens were taken hostage at the U.S. embassy by a group of supporters of the Iranian Revolution. This event marked the start of strained relations between the two countries, which played out in virtually all facets of the countries' foreign policy programs. This began a time of increased isolation from the rest of the world, both politically and economically in Iran's decreased access to foreign capital. (Alizadeh) One significant change was the first instance of the use of economic sanctions by the U.S. against Iran on November 14, 1979.(National Archives)

This initial sanction involved the U.S. freezing \$12 billion in bank deposits, gold and other assets, and the discontinuation of most export activities and other transactions with Iran. The goals of these sanctions were stated in President Carter's November 14, 1979 report to the Congress as freeing the hostages and securing financial claims held by U.S. individuals and corporations against Iran; the actual freezing of assets for the first time in history extended beyond assets held within the U.S. to \$5 billion in deposits held in overseas U.S. accounts, mainly Eurodollar accounts, which are accounts held in Europe but in U.S. dollars. The interception of funds was possible because Eurodollar transactions clear through clearing accounts in New York and The U.S. Treasury Department's Office of Foreign Assets Control could just block access to these accounts. During the time that Iranian assets were frozen by the U.S., foreign countries were not ready to do the same with Iranian assets in their currencies, however they did not oppose the decision of the U.S. to do so. Eventually, over the course of the months after the hostage crisis, U.S. prohibitions expanded to include the purchase of Iranian oil by American companies, all imports and exports except food, clothing and medicine, and

certain transactions. During this time, U.S. allies imposed a series of more limited unilateral sanctions after the UN Security Council sanction attempt failed due to a veto by the Soviet Union. Japan, one of Iran's main oil importers discontinued purchases during this time, a time period of 13 months. Robert Carswell maintains that it is difficult to ascertain the impact of sanctions from the impact of what he calls economic mismanagement in Iran, particularly given that the Iran-Iraq War occurred at this time in September of 1980. But even so, Carswell asserts that it is probable that U.S. sanctions on exports did have some kind of impact on Iran's economy, though he admits it was likely not a huge effect and not a lasting one.(Carswell)

After the 1979 freezing of Iranian assets, sanctions were heightened to include a weapons sales ban prohibiting weapons sales to Iran because of the Iran-Iraq War.(Katzman, The Iran Sanctions Act (ISA)) Economic sanctions against Iran since have become much more complicated, taking the form of long lists of regulations, stipulations, and exemptions. Overall, they are comprised of asset control regulations such as the freezing of assets previously mentioned, transaction regulations, such as that regulating the maximum dollar value of any transaction with an Iranian company, and measures to discourage investment in Iran's energy sector, such as the Iran Sanctions Act.

The next big milestone in the history of U.S. economic sanctions against Iran occurred in 1996 and is known as the Iran Sanctions Act (ISA). Sanctions became more targeted at this point. This act was the first attempt on the part of the U.S. to control investment in Iran's energy industry and it complemented earlier sanctions efforts such as Executive Order 12959 of May of 1995, which forbade all investment in and trade with

Iran (Katzman 2009, 1). At this point, the purpose of sanctions had shifted to halting Iran's ability to progress in its nuclear program and to support terrorist groups. The key understanding by the U.S. government in deciding to impose sanctions affecting Iran's oil sector was that a large portion of Iran's GDP comes from its petroleum sector, and further, that the sector needed, and still needs, significant infrastructure investments to maintain production because of aging equipment.(Katzman, The Iran Sanctions Act (ISA)) Iran not only faces a challenge reaching pre-revolution production levels, but should be growing and the data does not show adequate growth rates in petroleum production to this day. The deputy Oil Minister has been quoted as saying in November of 2008 that Iran needs \$145 billion in investments over the next ten years in order for its energy sector to be successful and experts believe that due to international isolation, oil production in Iran has stagnated at 4.1 million barrels per day (mbd).(Katzman, The Iran Sanctions Act (ISA)) The Iran Sanctions Act focused on foreign firms that make \$20 million or more worth of investments in Iran's energy sector in one year or that provide the country with weapons of mass destruction technology or provide certain types and amounts of advanced conventional weapons(Katzman, The Iran Sanctions Act (ISA)). Violating companies U.S. companies face the consequence of two out of a menu of six possible sanctions:

- 1) Denial of Export-Import Bank loans, credits, or credit guarantees  
for U.S. exports to the sanctioned entity
- 2) Denial of licenses for the U.S. export of military or militarily-  
useful technology
- 3) Denial of U.S. bank loans exceeding \$10 million in one year

- 4) If the entity is a financial institution, a prohibition on its service as a primary dealer in U.S. government bonds; and/or a prohibition on its serving as a repository for U.S. government funds (each counts as one sanction)
  - 5) Prohibition on U.S. government procurement from the entity
  - 6) Restriction on imports from the entity, in accordance with the International Emergency Economic Powers Act.
- (Katzman, The Iran Sanctions Act (ISA))

To understand what constitutes an act that deserves the imposition of a sanction, it is helpful to clarify the meaning of an investment in the Iran context. The ISA includes any construction of energy routes to or through Iran as an investment since it aids in the production and export of oil. Another type of project that is outlawed under the ISA is the construction of refineries or petrochemical plants.(Katzman, The Iran Sanctions Act (ISA))

The Iran Refined Petroleum Sanctions Act of 2009 (HR 2194 & S 908) focused restrictions on the trade of gasoline with Iran and tightened restrictions on overall trade. This Act added a new dimension to sanctions by imposing sanctions on individual people. Specifically, it targets individuals who are involved with human rights abuses. It also bans US transactions with foreign banks that interact with Iran's Revolutionary Guard Corps as well as other entities that have been on UN sanction lists. This act reduced the level of dollar value of total investments that must occur for a sanction to be instituted to \$20 million and expanded the menu of options for sanctioning. (Katzman, Iran Sanctions)

United Nations Security Council Resolution 1929 followed in June of 2010 and added to a series of other resolutions by the UN Security Council. Altogether, these resolutions put a ban on the sale of heavy weapons to Iran and authorized sanctions on Iran's financial sector. This is the point at which sanctions against Iran really began to pick up steam, with a number of countries imposing unilateral sanctions.

The Comprehensive Iran Sanctions, Accountability, and Divestment Act (CISADA) of 2010 amended the Iran Sanctions Act by adding a number of components and limitations. It heightened the limitations on trade with Iran and has a focus on oil exports to Iran because Iran is so dependent on oil imports to sustain its consumption. It also restricts trade in technology with countries that play any role in Iran obtaining WMD-useful technology. Experts believe that since CISADA was put in place, sales to Iran of oil have been reduced significantly. (Katzman, Iran Sanctions)

European Union sanctions were imposed in July of 2010. Sanctions by individual nations began to occur around September of 2010 and showed significant support for economic sanctions against the Iranian government. Japan and South Korea instituted sanctions similar to that of the European Union, which had to do with trade financing, banking and Iran's energy sector. Both of these countries are major buyers of Iranian oil and India, another large partner of Iran's, instituted some informal financial sanctions. (Katzman, Iran Sanctions)

Today, sanctions prohibit all trade and finance of goods, services or technology with respect to Iran, and particularly those that have to do with the oil industry. (U.S. Energy Information Administration) They are regulated and imposed by the U.S. Department of Treasury's Office of Foreign Assets Control (OFAC). Table 1 highlights some of the

milestone events in Iran sanctions history including when they were imposed, the nature of the sanctions, the countries involved and level of cooperation in the global community, and the goals and targets of each sanction<sup>1</sup>.

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<sup>1</sup> A comprehensive list of sanctions against the Iranian government can be found at the U.S. Department of Treasury Iran sanctions site: <http://www.treasury.gov/resource-center/sanctions/Programs/pages/iran.aspx>

Table 1: Significant Sanction Events

Year (Name)	Type of Sanction	Countries Involved	Cooperation	Goal/Target
1979 (Hostage crisis)	Asset freeze and unilateral US sanctions	US	No UN Security Council Support; some bilateral support by US allies	Free hostages; protect U.S. property claims against Iran
(Executive Order 12957)	Unilateral; Banned <u>U.S.</u> investment in Iran's energy sector	US	U.S. only	Nuclear program and terrorist support
1995 (Executive Order 12959)	Unilateral; U.S. trade and investment ban			
1996 Iran Sanctions Act (originally termed the Iran-Libya Sanctions Act)	Sanction on <u>foreign</u> firms doing business with Iran and Libya	US	History of avoidance by foreign firms(Katzman, Congressional Research Service, The Library of Congress)	Lessen international investment in Iran's energy sector (\$20 million or more sanction)
December 2006 (United Nations Security Council Resolution 1737)	Multilateral	UN Security Council – China, France, Russia, UK, US	Applies to all countries; countries required to report to sanction committee steps taken to adjust to sanctions(United Nations)	Military, trade, and financial measures in relation to the Islamic Revolutionary Guard Corps; targeting Iran's nuclear program(MacFARQUHAR)
March 2007 (United Nations Security Council Resolution 1747)				
March 2008 (United Nations Security Council Resolution 1803)				
June 2010 (United Nations Security Council Resolution 1929)				
March 2009 Renewal of Executive Order 12959 (by President Obama)	Banned <u>U.S.</u> trade with and investment in Iran	US	U.S. only	No alterations to Executive Order 12959
Iran Refined Petroleum Sanctions Act of 2009 (HR 2194 & S 908)		US		Expanded sanctions under 1996 Iran Sanctions Act by adding restrictions on trade of gasoline with Iran by foreign companies & sanctions on human rights violators (Katzman, Iran Sanctions)
July 2010	Unilateral	Canada	*Global Cooperation picked up steam in 2010 in a slew of unilateral sanctions	Restricts export of nuclear materials and technology to Iran
July 2010		EU		Restricted EU involvement with Iran's energy sector and restricted trade financing and banking relationships(Katzman, Iran Sanctions)
September 2010	Unilateral	Japan		Similar to EU sanctions(Katzman, Iran Sanctions)
July 2010	Unilateral	Australia		Banking, shipping line, construction company(Alexander)
September 2010	Unilateral	South Korea		Similar to EU sanctions(Katzman, Iran Sanctions)
July 2010, Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 (formerly Iran Refined Petroleum Sanctions Act)	Unilateral	US		Petroleum sector (reduction to \$20 million investment cutoff); Expanded sanctions under the Iran Refined Petroleum Sanctions Act of 2009
September 2010	Unilateral	US		Election and human rights abuses; Violent suppression of protests; Eight Iranian officials targeted who were involved in human rights abuses

Today, US sanctions prohibit all bilateral trade and investment and also include “secondary boycotts” that penalize foreign companies that invest in Iran’s energy sector.(Amuzegar, Iran's Economy and the US Sanctions) US policymakers have become more informed as to the politics and the economy of Iran than ever before. This has allowed for sanctions to become more targeted and thus more likely to achieve specific goals. For instance, a portion of the sanctions currently targets the Islamic Revolutionary Guard Corps (IRGC) commanders and affiliated organizations.(Taghizadeh) The IRGC is the military establishment formed after the Islamic Revolution in 1979, consolidating the military forces in support of the Islamic Republic. The group, also known as the Pasdaran, has since extended its reach beyond military affairs and is deeply and influentially involved in the political and economic affairs of the country. (Bruno, Council on Foreign Relations) Executive Order 13382 targets specific entities and members of the IRGC by freezing their assets and those somehow affiliated with and supporting the IRGC. (U.S. Department of State) In addition, United Nations Security Council and the European Union have issued out similar sanctions that prevent, where possible, the IRGC from receiving financial support. (U.S. Department of State)

In March of 2010, President Barack Obama renewed an Executive Order prohibiting trade with and investment in Iran around the same time that the U.S. Senate passed the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010, which targets the energy sector. June 2010 saw UN Security Council Resolution 1929 passed, which targeted the IRGC and its businesses as well as the shipping and commercial and financial services sector. Additionally, in July 2010, Canada passed sanctions on Iran and the European Union also passed what is considered a very



comprehensive and strict set of sanctions against the government.(Bruno, Council on Foreign Relations)

## V. Data and Factors Influencing Sanction Effectiveness

The data involved in carrying out this study come from the World Bank *World Development Indicators (WDI)* and *Global Development Finance* databanks. The factors that are considered in this paper are the following:

- Macroeconomic Factors:
  - Inflation
  - Per capita GDP and per capita GDP growth
  - Unemployment levels
- Foreign direct investment
- Export composition and destinations
- Iran's foreign policy decisions
- Political instability (i.e. Iran-Iraq War, Revolution)
- Complexity of sanctions
- Cooperation in the global community

The impact on the economy is measured by the country's GDP growth rate each year. Because oil and gas production is a major determinant of GDP in Iran, GDP growth is driven in large part by the growth – or lack thereof – in the country's oil sector. The above listed variables, as well as many others, jointly influence how successful economic sanctions are in producing a certain outcome. In this case, the outcome is a change in behavior with regard to Iran's nuclear program and terrorism support. Factors concerning how sanctions have been and are today implemented impact how successful they are in creating an economic impact. Beyond this, a number of external factors affect sanction

effectiveness that are not represented in any dataset, such as the state of repression in a country as well as public discontent.

## VI. The Economy Today and Sanctions Impact

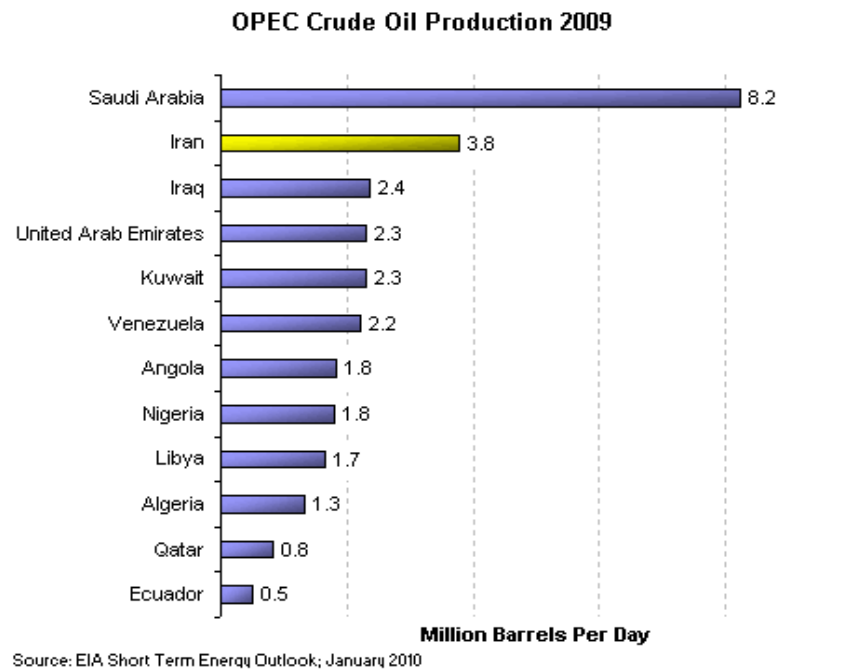
Katzman points out that the threat of sanctions, separate from whether a sanction is actually imposed or not, can have an impact on countries that face them. There are a number of areas where an impact is visible. Furthermore, Secretary of State Hillary Clinton has said that sanctions have been effective in slowing the progress of Iran's nuclear program by compounding already existing economic problems in the country(Katzman, Iran Sanctions).

As is evident by the growing number of countries imposing sanctions on the Iranian government, international support for sanctions against Iran has never reached the level it is at today. Further, the nature of economic sanctions has become more targeted in focusing on certain agencies within the government and more stringent in its qualifications of actions that deem sanction use appropriate.

### *Oil Production*

One area where slow growth is imminent in Iran's economy is in oil production levels. As can be seen in Chart 4 below, Iran is near the top of the list of main OPEC crude oil producers after Saudi Arabia. And the country has instituted a five-year development plan in January of 2010, part of which includes a plan to bring oil production capacity up to 5.1 mb/d by 2015, but experts at the U.S. Energy Information Administration point out that foreign investment is vital to any such increase.(U.S. Energy Information Administration) With many more countries coming on board with sanctions in the year 2010, including some of Iran's biggest oil importers, maintaining adequate foreign investment in the long run will be sure to be a challenge.

Chart 4:



One of the biggest ways that lack of investment is harming Iran is in limiting technology imports and infrastructure development to modernize its energy sector. International isolation from economic sanctions as well as from a number of other factors such as Iran’s own foreign policy decisions, have caused its energy sector infrastructure to become antiquated to the point that growth is not happening. Radio Free Europe has stated that the past 30 years has only seen, on average, 5 percent growth in per capita oil production in Iran, meaning it has increased by 150 percent over the 30 years (Taghizadeh). To compare this to a similar country, charts 5 and 6 below show comparative growth between the countries of Iran and Qatar. Qatar exhibits steady upward growth, while Iran’s historical trend is volatile and relatively stagnant. Of course, political instability is a bigger issue in Iran than in Qatar. However, the fact that Iran’s oil production level is susceptible to such volatility, whatever the reason, should be a cause

for concern, especially considering it comprises such a high percentage of the country's annual GDP.

The Iranian population also consumes energy at an alarmingly high and increasing rate because of subsidized prices, with estimates at an increase of 500 percent from around the year 1980 to 2010. (Taghizadeh) In 2009, imports met 25 to 30 percent of Iran's gasoline consumption requirements. Chart 5 from the U.S. Energy Information Administration (EIA) shows Iran's petroleum production and consumption levels. Considering Iran's current petroleum production growth rate, and considering that consumption is on an upward trend, experts from the National Academy of Sciences believe that oil exports are dwindling to a point of being insignificant by the year 2015(Stern). This would likely compound the problem of slow production growth and intensify the pressure on the economy in the coming years. With an outlook of longer than a couple of years, a joint and determined effort on the part of the major world powers, Iran's biggest importers, and the United Nations to impose sanctions can be effective in deterring Iran from continuing its behavior. Furthermore, pressure from within Iran's borders can be a powerful force in any change of policy surrounding Iran's nuclear program.

Chart 5:

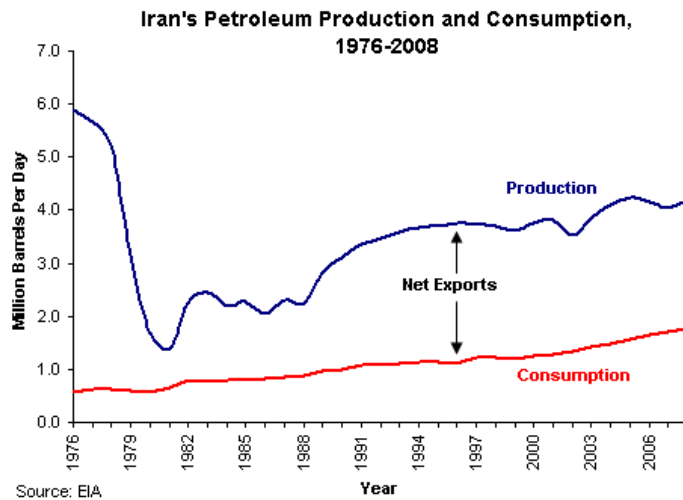
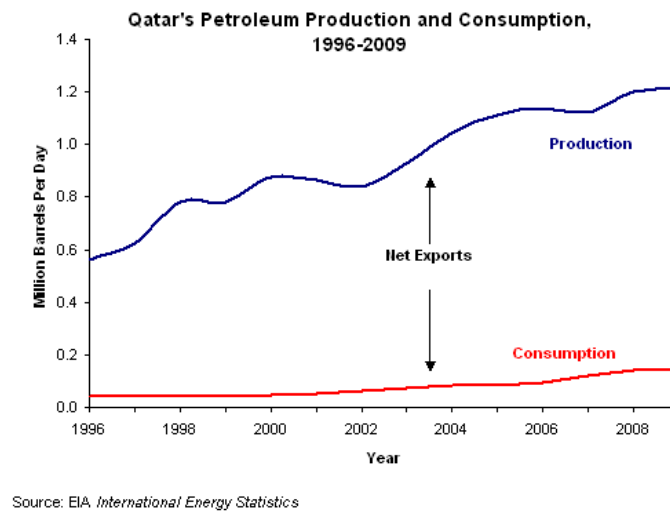


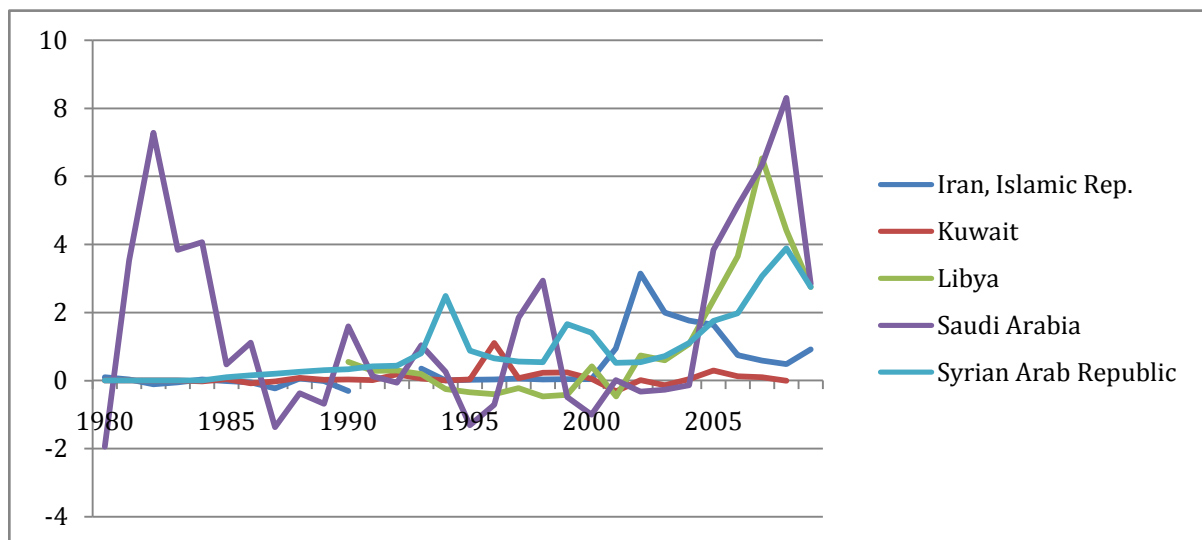
Chart 6:



It is clear that, as compared with pre-Revolution times, oil production has suffered and growth rates are low. Experts have attributed this to a number of factors, one being a lack of foreign direct investment in oil production technology in Iran due to the impact of sanctions. The U.S. Energy Information Administration has pointed to investment

deficiencies since the 1979 Revolution as one of the reasons for Iran’s oil production levels remaining where they are(U.S. Energy Information Administration). Chart 7 shows a comparison of incoming foreign investment as a proportion of GDP in five oil-producing countries in the Middle East: Iran, Kuwait, Lybia, Saudi Arabia, and Syria. The data shows that while other countries have improved in the area of foreign investment over time, Iran is almost at the same level as it was at the time of the Iranian Revolution. Interestingly, Saudi Arabia, Libya and Syria all show a downward dip in the aftermath of the global financial crisis, however, Iran does not show this decrease. One can assume this is a product of a lack of connectedness between Iran and the rest of the world due to the increased stigma of doing business with a nation that is supporting terrorist groups and continuing a nuclear program that is internationally recognized as illegal.

Chart 7: Net inflow of Foreign Direct Investment (% of GDP)



Data Source: World Bank World dataBank. World Development Indicators (WDI)



Iran is addressing this investment disparity by attempting to establish new investment projects in the country's oil sector. The EIA points out that foreign investment is almost certainly necessary if Iran hopes to reach the target oil production of 5.1 million bbl/d by 2015, which is a part of its five-year development plan.(U.S. Energy Information Administration) The increasing level of global support for as well as participation in sanctions against Iran threatens to impede these plans. In addition, in comparing the above two graphs, it is evident that between the years 2006 and 2009, there was a decrease in Iranian oil production. Without foreign investment, and the import of technology to modernize and expand production capabilities, Iran's oil sector will not grow like it should.

Measuring the impact of sanctions can be difficult since there are a number of other confounding factors that may affect oil production levels such as political instability. The Iran-Iraq War and the Revolution both set back the country a great deal. Production hovered around 2 mb/d between the years 1982 to 1988, when the War ended. On the other hand, a country like Qatar that has not faced the same political instability exhibits steady upward growth in its oil production. Experts also cite internal factors such as economic mismanagement as a continual setback for Iran's productivity levels(Katzman, Iran Sanctions). This includes lingering and inefficient government subsidies on energy and food that have cost the government over \$90 billion per year, making up approximately 25 percent of Iran's yearly GDP.(Taghizadeh)

The recent reduction in the Iranian government's subsidies is a testament to the fact that the Iranian economy is suffering, since it is hardly a politically sensible time to cut such subsidies, with discontent arguably at the highest level since the Iranian

Revolutionary times. The government is distributing cash payments of 45 USD per person to Iranian citizen's bank accounts to offset the effect of the energy cuts.(Salehi-Isfahani) However, analysts suspect that this is a ploy to lessen the anger in the population who will face heightened energy and food prices because of the subsidy cuts. Considering the instability the 2009 elections caused, removing this cushion that the Iranian people were accustomed to is a politically unfavorable act and can be attributed to the impact of economic sanctions from the global community and from some of Iran's main oil importers and sources of infrastructure investment. The sanctions have undermined the Iranian government's ability to maintain the large-scale subsidies, which were a fixed feature of Iranian economy. The removal of subsidies has been cited as causing a doubling of the price of bread, quadrupling the price of gasoline, and increasing the price of natural gas by eight times.(Salehi-Isfahani) Given that the government is feeling enough of a pinch to make such a politically unfavorable decision, sanctions, in addition to the global financial crisis, must be putting them in a position with no other choice.

Defensive behavior such as this, and other actions to cover up economic problems, is a clear evidence of the increasingly weak state of things in the Iranian economy and of the impact of economic sanctions on the economy. The government has denied any impact of sanctions on the economy. However, certain individuals such as former president of Iran, current chairman of the Expediency Council and member of the Assembly of Experts, Ali Akbar Hashemi Rafsanjani has voiced his concern over the potential impact sanctions can have.(Fassihi) Rafsanjani has said,

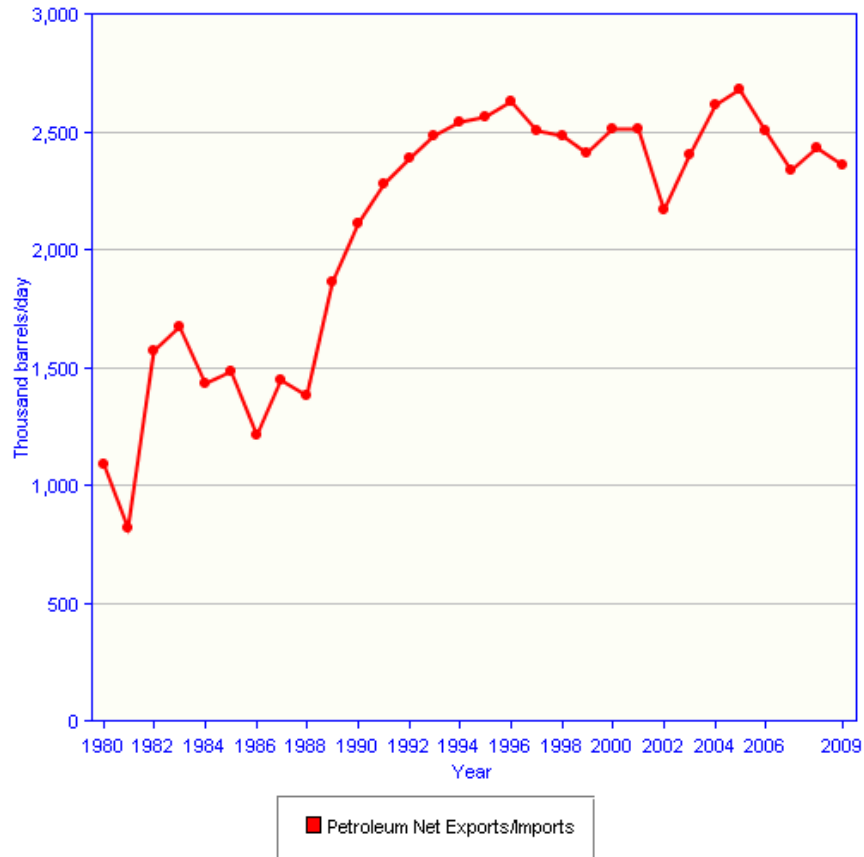
Iran has such a big capacity that it is able to overcome (the sanctions), but I am doubtful that these capacities are being utilized in a proper way...We have never had such intensified sanctions and they are getting more and more intensified every day. Wherever we find a loophole, they (Western powers) block it.(Tehran)

Individuals such as Rafsanjani are less than welcome in the government and he has recently been ousted from his position as the leader of the Council. Warnings from inside the Iranian government such as this one and their removal from their positions of power lead one to believe Iran is trying to cover something up. In this case, it is the impact of sanctions on their economy.

### *Oil Exports*

In addition to its inability to sustain the same levels of oil production, since sanctions have been intensified, there has been a downward trend in net oil export levels because other countries are cutting ties with Iran. Chart 8 below demonstrates this decrease.

Chart 8: Net Exports/Imports of Petroleum in Iran



Data source: U.S. Energy Information Administration (EIA)

Many believe that if the U.S. and EU sanction Iran’s oil industry, other buyers will step in and fill the gap in consumption of Iranian oil. However, this is not completely the case in the data, since net exports are on a downward trend. A report by the Congressional Research Service points out that in early September 2010, Japan and South Korea instituted sanctions that resemble EU sanctions and that India, a country that has been historically careful not to upset Iran, has instituted sanctions against Iran.(Katzman, Iran Sanctions) Table 2 shows that Japan, South Korea, and India are among the top five importers of Iranian oil. Based on the data below from the U.S. Energy Information Administration, these three countries comprise just under 44 percent of total oil exports

from Iran. This would probably have a negative impact on Iran’s economy, particularly considering that oil has been said to comprise 80 percent of the country’s exports.(Chick)

Table 2: Iranian Petroleum Export Destination Countries	
Country	Mbbl/d
Japan	520
China	430
India	410
South Korea	210
Italy	160
Spain	140
Greece	110
France	90
South Africa	90
Other	440
Total Exports:	2,600
Year: 2008	
Source: Energy Information Administration	

Overall, the impact of sanctions on oil exports is evident. The following IMF charts show side-by-side oil and gas exports beside percent change in GDP per year.

Chart 9:



### *Impact on businesses*

The impact of sanctions, particularly the most recent round of international sanctions, has made a noticeable change in the state of affairs and has permeated beyond the energy sector. Because of decreased business and banking ties of a number of large countries with Iran, sanctions are putting a strain on Iranian business owners who are facing an increased cost of raw materials and are therefore either not paying their workers, reducing production, or are laying employees off in order to avoid shutting down.(Fassihi) A former manager in the Iranian ministries of finance and industry, Mojtaba Vahidi, has been quoted as saying, "The economic crisis we are witnessing today is a direct result of the sanctions—and Iranian officials who say otherwise are fooling themselves."(Fassihi) This impact on the general population is an unfortunate consequence of sanctions against the regime.

Cooperation in the global community is an important determinant of sanction effectiveness. Countries such as India, Turkey, Kuwait and Russia have stopped selling refined petroleum to Iran.(Bozorgmehr) South Korea's two largest auto companies, Hyundai and Kia, have halted exports to Iran in August and other Korean companies such as GS Engineering & Construction has stopped a \$1.2 billion deal with Iran in July.(Oliver, Jung-a and Fifield) Russia stopped the sale of a high-tech missile defense system to Tehran.(Containing Iran) It is evident that there has been a noticeable freeze in trade and business ties between Iran and countries it has historically been involved with.

Inflationary concerns are plaguing the government, consumers, and business owners alike. Sanctions have led Iranian banks and private money-exchange shops to stop selling dollars and Euros. This is caused by heightened difficulty in obtaining foreign currency because of a reduction in the number of banks outside of Iran that are willing to do money transfers with individuals inside Iran. The country is dealing with these imbalances by increasing income taxes, reducing energy and food subsidies and other moves that, experts say may make instability in the economy worse.(Fassihi)

## VII. Policy Goals Being Met?

By sanction effectiveness implies a number of possible outcomes. For one, it could mean that the Iranian people successfully overthrow the current leadership and replace it with a new democratically elected one. Another outcome would be the current government feeling enough pressure to abandon its nuclear program and its support of terrorist groups and to be forced to become more receptive to the voice of its people and to allow them the democratic freedoms repeatedly demand and deserve.

A separate and important question is whether the impact on the economy from sanctions will definitely translate to Iran making concessions. Although the answer to this question varies depending on who is asked, the hope is that increasing and continual pressure on the Iranian economy will eventually leave the government with no choice but to concede in the country's nuclear ambitions.

Increasing discontent among the Iranian people towards the government, which is sacrificing the needs of its people for its own objectives, could also potentially lead to an uprising such as the one during the 2009 presidential election. Although it is not the intention of countries imposing sanctions, if conditions are harsh enough for the Iranian people under economic isolation, any uprising could potentially be more successful than the 2009 Green Movement uprisings and could place the Iranian people in a better situation and the global community in a safer place.

President Obama called the actions of Iran “an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States” and he at the same time extended the declaration of a national emergency of March of 1995 in reference to Iran.(Press TV)

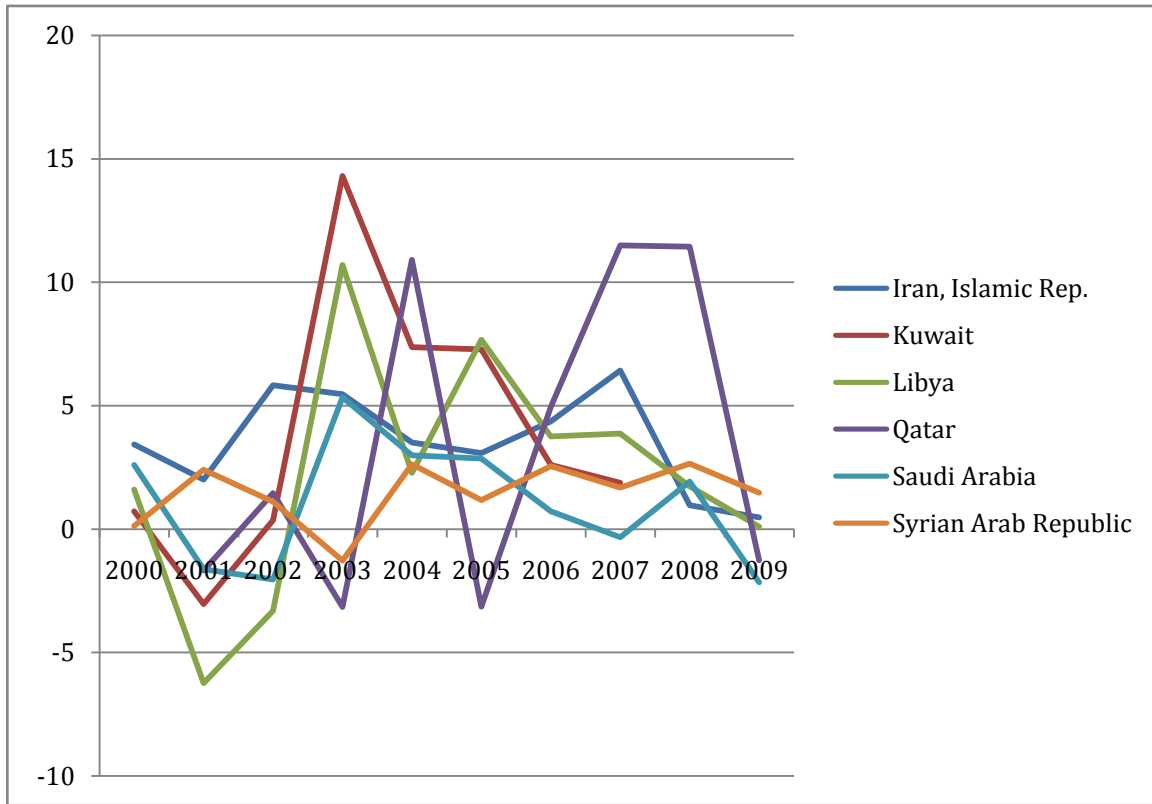


Conditions are ripe for sanction effectiveness. People are protesting and if the regime continues to be weakened by sanctions, the democratic resolve of the people of Iran will have a better chance of success.

### *Comparative Statistics*

The last few years have translated to bad news for the economies of most countries in the world. However, a number of countries have not experienced the same extreme dip in growth. Iran is one such country, and the reason for its relative immunity to the economic volatility experienced by most nations is its isolation from the global community. From the year 2007 on, when the financial crisis began, growth statistics for most countries took a downward turn. However, Iran did not experience as drastic a dip as other countries. The per capita rates of growth show the comparison between similar oil producing countries in the Middle East with Iran showing a relatively flat line between 2007 and today.

Chart 10: GDP Per capita rate of growth (Annual %)



Data Source: World Bank Development Indicators

This isolation, though it may have been helpful during the years of the global financial crisis, is a testament to Iran's disconnect from the rest of the world. This continued isolation is visible in Iran's lack of foreign investment and in its deteriorating energy infrastructure.

## VIII. Conclusion

Popular opinion on economic sanction effectiveness has historically been fairly negative. However, in the context of economic sanctions against the Iranian government, and looking at recent years, there is a strong case for the claim that sanctions are negatively affecting the Iranian economy. The oil industry, arguably the most important part of the economy, has been hard hit by a lack of investment into technology to modernize its equipment and technology. Instead of steadily growing, Iran's oil production is relatively stagnant, which is a bad sign considering how important oil is to Iran. Iran's isolation from the world, though acting as insulation during the 2007 global financial crisis, will prove unsustainable in the long run as Iran's oil refining equipment continues to deteriorate and its leading oil importers stop buying from Iran and continue to intensify sanctions. Growth statistics are further evidence of sanctions impact, showing stagnation in the economy in the place of what should be steady growth. Unemployment and inflation are putting pressure on the population. Considering the Iranian people are displaying their discontent with the direction the country is in, sustained pressure could invoke another uprising that could be more successful than the last. Support from the international community on the sanctions effort is at a peak, a key factor in effectiveness. The impact on the economy is clear. Whether this impact is leading to changes in Iran's nuclear program and terrorist support, which is sanctions' overall mission, is a separate question.

The connection between impacting Iran's economy and this negative impact leading to concessions in its nuclear program and terrorism support is less clear, at least right now. However, evidence in Iran's domestic economic policy decisions and its

blanket statements denying any impact of what amounts to international isolation leads one to believe that the government is hiding something. An important factor in the equation dictating whether economic impact translated to concessions is the price of oil, which has historically proven to cushion the Iranian economy. This is an unavoidable fact. However, the main industry in Iran is suffering. Sustained over time, this will prove to be a problem for the government. Iran is, in comparison with its oil-producing neighbors, not doing well. If sustained in the form they have evolved to today, sanctions have the potential to push the Iranian government into a position in which it has no other choice but to concede.

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