THE IMPEDING EFFECTS OF UNITED STATES SANCTIONS ON HUMANITARIAN TRADE WITH IRAN

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

Layla Elizabeth Oghabian, B.A.

Washington, D.C.
April 14, 2021

THE IMPEDING EFFECTS OF UNITED STATES SANCTIONS ON HUMANITARIAN TRADE WITH IRAN

Layla E. Oghabian, B.A.

Thesis Advisor: Andrew S. Wise, Ph.D.

ABSTRACT

I set out to examine the relationship between United States sanctions on Iran and humanitarian trade in the form of pharmaceutical imports. To measure this relationship, I used the gravity model of international trade. In this study there are 840 observations across a series of 21 years dating from 1997 to 2018. I found that when a Republican president is in the White House, global trading partners decrease pharmaceutical imports to Iran. However, when Democrats are in the White House the reverse is true, and pharmaceutical imports increase. Although the number of observations are low for a study of this nature, the results are in no way limited in real world application. My study quantitatively indicates that U.S. sanctions on Iran limit humanitarian aid intended for the Iranian people. The United States should take the lead in providing humanitarian relief to the Iranian people since current mechanisms set in place by European states cannot conduct the level of humanitarian trade required to meet the needs of the Iranian people. Therefore, I recommend that the White House take steps to create a direct financial channel between the United States and Iran to assist with humanitarian relief.

ACKNOWLEDGMENTS

The research and writing of this thesis are
dedicated to my mother and everyone who helped along the way.

Many thanks,
Layla E. Oghabian

TABLE OF CONTENTS

LIST OF TABLES

I. Introduction

All diplomatic ties between the United States and Iran were abruptly severed during the Islamic Revolution in 1979 when Iranian students stormed the U.S. Embassy in Tehran and took American diplomats hostage for 444 days. Beginning in 1980, President Jimmy Carter announced the United States would impose sanctions on the Islamic Republic of Iran in retaliation for the U.S. hostage crisis. Since then, the U.S. has continuously imposed sanctions of various kinds and levels on Iran as an economic tool to try to force change in Iran's behavior. However, this strategy has arguably not altered the Iranian regime's core strategic objective of eliminating the country's internal and external national security threats. Iran's most notable strategic policy initiative is building up their regional military defense forces by being active sponsors of terrorism and engaging in "asymmetrical warfare" through proxy groups.[1] Deep mistrust in the United States and its allies also perpetuates hostile relations between the two countries. Sanctions are the United States' primary tool against Iran and are not likely to be significantly lifted in the near future. The effects sanctions have had on the Iranian economy are catastrophic, and consequentially the Iranian people are suffering the most. This thesis will study the humanitarian impact of U.S. sanctions on Iran and examine how sanctions impede Iran's ability to access medicinal and pharmaceutical products. I hypothesize that the imposition of U.S. sanctions on Iran impedes the flow of humanitarian trade to Iran, and that sanctions imposed by other intergovernmental organizations such as the United Nations do not have any discernable impact on humanitarian trade.

When sanctions were first imposed by the Carter Administration, they were designed to cripple the Iranian economy in hopes of toppling over the newly formed Islamic Republic of Iran. Despite these sanctions, the newly formed government was able to consolidate its power

and overcome any opposition threatening its legitimacy. U.S. sanctions did not help President Carter achieve his goal. Over forty years later, the United States is responsible for imposing arguable the toughest sanctions regime in history on Iran. In May 2018, President Trump announced the United States would be withdrawing from the Joint Comprehensive Plan of Action (JCPOA) and reimposing sanctions that were in place before the deal and adding further sanctions. Imposing crippling sanctions were the main force behind the Trump Administration's "maximum pressure" campaign to force Iran's hand in renegotiating a new deal. Since President Biden took office very little has changed to reverse the "maximum pressure" campaign, although in April 2021 the U.S. and Iran agreed to indirect talks on returning to the nuclear deal. Sanctions government officials who are the architects behind these policies have admitted that sanctions were targeted at the Iranian people to create economic hardship for them so they will in turn become agitated and pressure the Iranian government to capitulate.[2] However, under an authoritarian style of leadership, pressure from the people does not force the hand of the government. Sanctions did not help President Trump achieve his goal, and President Biden will likely have to provide meaningful sanctions relief to convince Iran to return to the nuclear deal.

U.S. sanctions target virtually every financial sector in Iran but exempt transactions that are intended for humanitarian aid. Under the Trump Administration, former U.S. Special Representative of Iran, Brian Hook went so far as to dispel "myths about U.S. sanctions on Iran" targeting medical supplies, agricultural products, and other humanitarian aid intended for the Iranian people.[3] My thesis will empirically examine whether U.S. sanctions impede Iran's access to humanitarian aid in the form of pharmaceutical imports. Existing research shows that U.S. sanctions are restricting Iran's means to finance the purchase of humanitarian good such as food, medicine, and medical devices. Banks and other financial institutions fear incurring U.S.

sanctions despite the exemptions for humanitarian trade. As a result, they are overly cautious and over-comply in fear of triggering sanctions, thus further limiting access to humanitarian aid and essentially rendering humanitarian exemptions ineffective. Many other financial institutions have outright suspended relations with Iran because the costs far outweigh the benefits. Other institutions that want to do busines with Iran are often forced to overcome legal obstacles that at times can result in litigation. Consequently, the Iranian people are suffering the most from sanctions. High inflation rates coupled with massive unemployment over 10% for the past two decades have placed the country in an economic disaster.[4] Those with wealth and income in Iran can afford what little medicine is available in the country, and only the most fortunate are able to obtain a travel visa to go abroad for medical treatment. The vast majority of Iranian people do not have these privileges and cannot afford or access lifesaving medicine. While humanitarian relief is exempt from sanctions, evidence shows that they have severely impeded Iran's access to food, medicine and medical supplies, which in turn has hampered the government's ability to respond to diseases that require specialized care such as cancer, multiple sclerosis, hemophilia, and COVID-19.

This paper proceeds as follows. In the next section, I present the background, and in Section III, I provide a review of related literature. In Section IV, I present the data I employ to examine the relationship between sanctions and humanitarian trade. In in Section V, I develop a theoretical framework to explain this relationship. In Section VI, I demonstrate the empirical equations I estimate to study and I discuss the results for estimating those equations. In Section VII, I discuss policy implications moving forward, and in the final section I summarize and conclude my research.

II. Background

History of Sanctions on the Islamic Republic of Iran

The Iran Hostage Crisis in 1979 marked the end of diplomatic relations between the United States and Iran. Iranian students stormed the U.S. embassy in Tehran and took diplomats hostage for 444 days. Since then, the United States and the Islamic Republic of Iran have viewed each other as adversaries. The first round of sanctions by the United States were imposed by President Jimmy Carter in 1979 shortly after the Iran hostage crisis began. These sanctions froze $12 billion of Iranian assets and banned all Iranian imports into the U.S..[5] In 1984, President Regan imposed further sanctions designating Iran as a state sponsor of terrorism, a designation that brought about a sweeping set of new sanctions. In 1992, President Ronald Reagan signed into law the Iran-Iraq Arms Non-Proliferation Act preventing Iran and Iraq from acquiring goods and technology used to build weapons. This can reasonably be characterized as a reaction the Iran-Iraq war as an effort to prevent further military conflict between the two countries. The United States' primary foreign policy stance towards the Islamic Republic has been to impose economic sanctions as a means to coerce Iran. In fact, the United States is the "leading sanctioning country, [having] employed economic sanctions against over 30 countries for more than 120 times in the twentieth century."[6] Iran is a country that has been sanctioned more heavily than most countries in the world. As of December of 2020, the U.S. Department of Treasury's 'sanctions search list,' had over 800 sanctions imposed on Iran by the United States. While Belarus only has 23 sanctions imposed on their country by the United States, Cuba has 14, Venezuela has 176, North Korea has 182 and Syria has 573.[7] The U.S. has expended vast amounts of resources and energy towards imposing the world's toughest sanctions regime on Iran.

Sanctions under President Clinton

The Clinton Administration imposed sanctions on Iran through legislation and executive order to target several aspects of the Iranian economy. In 1996, President Clinton signed into law the Iran-Libya Sanctions Act, later known as the Iran Sanctions Act (ISA) in 2006, targeting Iran's investment in energy infrastructure by sanctioning companies that invest in Iran's petroleum sector. "By restricting investment in Iran's most important sector," the law denied "financial means to sustain its nuclear chemical biological and missile weapons programs."[8] The ISA is considered a secondary sanctions regime meaning companies that chose to do business with Iran's energy sector cannot also do business with the United States. Then in 2000, President Clinton signed into law the Iran Nonproliferation Act sanctioning "entities that provide goods, services, or technology to Iran related to nuclear, biological, or chemical weapons, and ballistic or cruise missile systems."[9] President Clinton also issued several executive orders banning all American trade with and U.S. investments in Iran as well as imposing "export controls on sensitive WMD technology."[10] These executive orders include EO 12938, EO 12957, EO 12959, and EO 13059. Table 1 provides a list of major U. S. sanctions actions between the Clinton and Trump administrations.

Sanctions under President George W. Bush

In the wake of the 9/11 terrorist attacks President George W. Bush signed a series of executive orders and legislation targeting sponsors of terrorism and money laundering. In 2006, President Bush enacted the Iran Freedom Support Act sanctioning "individuals and entities that aided Iran's development of chemical, biological, or nuclear weapons, or the acquisition of destabilizing numbers and types of advanced conventional weapons."[11] It also permanently

banned trade and investment in Iran by codifying Executive Orders 12957, 12959, and 13059 previously executed by President Clinton.

In 2001, President Bush signed EO 13224 blocking property and prohibiting transactions with persons who commit, threaten to commit or support terrorism. Iranian entities sanctioned under this order included Bank Sedarat, the Quds Force, and air and cargo companies connected with the Quds Force.[12] In 2005, President Bush signed EO 13382 blocking the property of weapons of mass destruction proliferators and their supporters. Sanctioned Iranian groups included the Islamic Revolutionary Guards Corps (IRGC), the Atomic Energy Organization of Iran, Defense Industries Organization, additional Iranian banks, and Iranian shipping lines. In 2007, EO 13438 was enacted in response to security concerns in Iraq to block the "property of individuals threatening the peace or stability" in the country. Given Iran's proxy activity in Iraq, several IRGC Quds Force commanders were sanctioned under this executive order.

Sanctions imposed by the United Nations

Between 2006 and 2010 the United Nations passed a series of resolutions to tighten sanctions related to Iran's nuclear program.

- On July 31, 2006, the U.N. Security Council adopted Resolution 1696 urging all states to "to exercise vigilance and prevent the transfer of any items, materials, goods and technology that could contribute to Iran's enrichment-related and reprocessing activities and ballistic missile programmes".[13]

- On December 23, 2006, the U.N. Security Council adopted Resolution 1737 further sanctioned Iran for failing to comply with Resolution 1696 and froze assets of certain individuals and companies related to Iran's enrichment activities.[14]

- On March 24, 2007, the U.N. Security Council adopted Resolution 1747 tightening sanctions in connection to Iran's nuclear program, freezing further assets and restricting travel of those engaged in such activities, and imposing a ban on the country's arms exports.[15]

- On March 3, 2008, the U.N. Security Council adopted Resolution 1803 further tightening restrictions to Iran's nuclear proliferation activity, increasing vigilance over Iranian banks and calling upon all states to inspect cargoes to and from Iran.[16]

- On June 9, 2010, the U.N. Security Council adopted Resolution 1929 imposing additional sanctions, expanding the arms embargo and tightening restrictions on financial and shipping enterprises contributing to Iran's proliferation-sensitive nuclear activities.[17]

- On July 20, 2015, the U.N. Security Council adopted Resolution 2231 implementing the JCPOA and terminating the sanctions set out in the resolutions adopted between 2006 and 2015.[18]

Sanctions under President Obama

When President Obama came into office, he vowed to do everything in his power to prevent Iran from acquiring nuclear weapons. His approach was to start with "aggressive, principled diplomacy without self-defeating preconditions, but with a clear-eyed understanding of our interests."[19] Like previous presidents Obama also imposed sanctions through the same mechanisms; however, his approach led to the diplomatic negotiations that gave way for the JCPOA.

In 2010, the U.S. Congress also assessed the Comprehensive Iran Sanctions, Accountability, and Divestment Act to "target firms investing in Iran's energy sector or selling refined petroleum to Iran, and foreign banks doing business with designated Iranian banks."[20] Congress passed additional legislation in 2011 to impose sanctions on the Central Bank of Iran and other national banks whose home country did not significantly reduce their oil imports coming from Iran.[21] In 2011, the United States also designated Iran as a jurisdiction of "primary money laundering concern."[22] With this new designation, section 311 of USA PATRIOT Act of 2001 was enacted imposing special measures on U.S. financial institutions that conduct business with Iran due to its "illicit and deceptive financial activities."[23] In 2012, Congress expanded the

threat of secondary sanctions on counties and individuals[i] that do business with the Islamic Republic through the Iran Threat Reduction and Syria Human Rights Act (TRA). In January 2013, Congress further expanded the threat of secondary sanctions against companies doing business in Iran with the Iran Freedom and Counter-Proliferation Act (IFCA).

President Obama signed a number of executive orders imposing sanctions for human rights abuses as well as on various sectors of the Iranian economy.

- EO 13553 sought to freeze assets of human rights violators in response to the Green Revolution in Iran.[ii]
- EO 13574 clarified the authority of the US Department of Treasury to implement sanctions under ISA.
- EO 13590 imposed sanctions on individuals who contribute to the maintenance or enhancement of Iran's petrochemical industries.
- EO 13599 blocked property of the Iranian government and financial institutions in U.S..
- EO 13606 froze assets of human rights abusers using information technology systems specifically targeting the IRGC, Ministry of Intelligence and Security, and the Law Enforcement Forces of Iran.
- EO 13608 prohibited certain transactions with and suspended entery into the U.S. of sanctions evaders with respect to Iran and Syria.
- EO 13622 expanded energy and financial sanctions specifically targeting foreign financial institutions that engage with the National Iranian Oil company or Naftiran Intertrade Company.
- EO 13628 expanded legislative sanctions under the ISA and TRA.

---

[i] The TRA included the prohibition of U.S. persons doing business in Iran to any foreign entity owned or controlled by a U.S. person.

[ii] This and the following bullet points in this section are cited from Samore, G. (2015). *Sanctions Against Iran: A Guide to Targes, Terms, and Timetables* (p. 47). Harvard Kennedy School Belfer Center for Science and International Affairs. https://www.belfercenter.org/sites/default/files/legacy/files/Iran%20Sanctions.pdf.

- EO 13645 targeted both the automotive and financial sectors by sanctioning firms that provide services to Iran's automotive industry, and by blocking U.S. assets of banks that do business in the Iranian rial.

- EO 13572 sanctioned those responsible for human rights abuses in Syria including the Quds Force and its commander, Qassem Suleimani.

Sanctions lifted under the Joint Comprehensive Plan of Action

A significant shift in U.S. foreign policy towards Iran took place in November 2013 when Iran and a group of countries referred to as the P5+1[iii] negotiated terms to Iran's nuclear program, and signed an interim deal called the Joint Plan of Action (JPOA).[24] With this agreement came limited sanctions relief and the release of some Iranian frozen assets.

- "The U.S. suspended its efforts to block all trade in Iranian crude oil and permitted 6 purchasers to continue importing Iranian crude, provided they do not increase their average purchase level."[25]

- "The U.S. and EU suspended sanctions on Iran's petrochemical exports and on gold and precious metals."[26]

- "The U.S. suspended sanctions on Iran's automotive industry."[27]

- "Iran [was] permitted to receive $700,000,000 monthly from its frozen accounts."[28]

Upon verifying that Iran was compliant with the JPOA, the P5+1 went on to negotiate the Joint Comprehensive Plan of Action (JCPOA). An agreement was reached on July 14, 2015, when in exchange for making meaningful concessions to their nuclear program, Iran was to receive significant sanctions relief from the United States, the United Nations and the European Union (EU). On Implementation Day of the JCPOA, Iran verified key measures of the agreement were implemented in exchange for sanctions relief. The JCPOA lifted sanctions related to

[iii] China, France, Russia, United Kingdom, United States—plus Germany.

nonproliferation, but kept in place sanctions related to Iran's money laundering, development of ballistic missiles, support for terrorism, and human rights abuses.

Sanctions under President Trump

In 2018, under the direction of President Donald Trump, the United States withdrew from the JCPOA and imposed a 'maximum pressure' campaign that reimposed the sanctions previously lifted under the deal, and imposed further sanctions to target key aspects of the Iranian economy. During his presidency, Trump took a number of actions to place pressure on the Iranian regime. He signed into law the Countering Iran's Destabilizing Activities Act of 2017 (CAATSA), imposing sanctions against Iran's ballistic missiles program and the sale or transfer of military equipment. In April 2019, Trump designated the IRGC as a foreign terrorist organization, which automatically imposes economic and travel sanctions on the IRGC and its subsidiaries.[29] President Trump additionally signed several executive orders to expand the scope and scale of the maximum pressure campaign.

- EO 13846 reimposed the sanctions that had previously been lifted under JCPOA.
- EO 13871 imposed secondary sanctions on Iran's iron, steel, aluminum, and copper sectors which has historically been the country's largest non-oil sources of export revenue.[30]
- EO 13876 imposed sanctions on key Iranian officials in response to the missile strike on U.S. military facilities in retaliation to the killing of Quds Force commander Qassem Soleimani.[31]
- EO 13902 authorized secondary sanctions relating to construction, manufacturing, mining, and textiles sectors, as well as yet-to-be-named sectors in the future.[32]
- EO 13949 imposed secondary sanctions on persons that support Iran's nuclear, missile, and conventional arms-related activities.[33]

Table 1: U.S. Sanctions Against Iran[iv]

Description	Year	President
Iran-specific legislation		
Iran and Libya Sanctions Act	1996	Clinton
Iran Non-Proliferation Act	2000	Clinton
Iran Freedom Support Act	2006	Bush
Comprehensive Iran Sanctions, Accountability and Divestment Act	2010	Obama
Section 1245 of NDAA 2012	2011	Obama
Iran Threat Reduction and Syrian Human Rights Act	2012	Obama
Iran Freedom and Counter-Proliferation Act	2013	Obama
Countering America's Adversaries Through Sanctions Act (CAATSA)	2017	Trump
Iran-specific executive orders		
EO 12957 (Bans petroleum investment)	1995	Clinton
EO 12959 (Bans trade with Iran)	1995	Clinton
EO 13059 (Export restrictions to Iran)	1997	Clinton
EO 13553 (Freeze assets of human rights violators)	2010	Obama
EO 13574 (Implement sanctions under ISA)	2011	Obama
EO 13590 (Sanction involvement in petrochemical industries)	2011	Obama
EO 13599 (Block property of Iranian institutions in U.S.)	2012	Obama
EO 13606 (Freeze assets of human rights abusers)	2012	Obama
EO 13608 (Targeting sanctions evaders)	2012	Obama
EO 13622 (Expanded energy and financial sanctions)	2012	Obama
EO 13628 (Expands legislative sanctions)	2012	Obama
EO 13645 (Automotive and rial sanctions)	2013	Obama
EO 13846 (Reimposing sanctions lifted under JCPOA)	2018	Trump
EO 13871 (Sanctions iron, steel, aluminum, and copper)	2019	Trump
EO 13876 (Sanction key Iranian officials)	2019	Trump
EO 13902 (Sanction construction, manufacturing, mining, and textiles sectors)	2020	Trump
EO 13949 (Continuation of arms embargo)	2020	Trump
Additional authorities		
EO 12938 (Sanctions WMD proliferation)	1994	Clinton
EO 13224 (Sanctions supporters of international terrorism)	2001	Bush
EO 13382 (Sanctions WMD proliferation)	2005	Bush
EO 13438 (Sanctions those posing threat to Iraqi stability)	2007	Bush
EO 13572 (Sanctions those responsible for human rights abuses in Syria)	2011	Obama
Section 311 Money Laundering designation under USA PATRIOT Act 2001	2011	Obama
JCPOA (limited sanctions relief)	2015	Obama
IRGC FTO designation	2019	Trump

[iv] Sources: Harvard Kennedy School Belfer Center for Science and International Affairs and the U.S. Office of Foreign Asset Control

The Humanitarian Impact of U.S. Sanctions

The U.S. sanctions on Iran permit humanitarian relief to enter the country without restriction. The Department of Treasury maintains that the U.S. has a "longstanding policy" not to sanction the flow of food and medicine into Iran.[34] Clarifying guidance provided by the Office of Foreign Asset Control asserts that "under U.S. law, the sale and export of nearly all types of food and medicine to Iran are broadly authorized, and require no specific license or special authorization from the Department of the Treasury's Office of Foreign Assets Control (OFAC) or any other agency of the U.S. government. The sale and export of basic medical supplies are likewise broadly authorized. Other types of humanitarian exports may be authorized pursuant to a specific license from OFAC. In such instances, where U.S. persons are either specifically or generally authorized to engage in humanitarian exports to Iran, financial institutions here and abroad are generally permitted under Iranian Financial Sanctions Regulations[v] to process all financial transactions necessary to facilitate the trade."[35] Although humanitarian trade is exempt, food, medical equipment, and medicine have found barriers to entry.

Pharmaceutical companies and other businesses have very little incentive to invest within Iran given that the United States has imposed the toughest sanctions regime in history. Even though many of these goods are exempt from sanctions, the Treasury Department has fined companies selling medical supplies to Iran. For instance, "Sandhill Scientific Inc was prosecuted for selling $6,700 of medical equipment to Iran, as was Brasseler USA for $5,000 in medical sales to Iran."[36] Government officials even noted that these companies would have likely been authorized to export the goods under a specific export license exempt from sanctions.

---

[v] For details on these restrictions, refer to section 561.201 of the Iranian Financial Sanctions Regulations, 31 C.F.R. Part 561 (IFSR), and section 560.532 of the Iranian Transactions and Sanctions Regulations, 31 C.F.R. Part 560 (ITSR).

The United States has used fear and intimidation to prevent companies from investing within Iran. Under the Obama administration, "Treasury Department officials met with more than 145 banks in over 60 countries to pressure them to cut off dealings with Iran."[37] When forced with the decision to choose between the United States and Iran, many banks and businesses erred on the side of caution and severed ties with Iran entirely because the risk was too high and the benefits were too low. While many economic sectors were impacted by the Obama administration's calculated approach, medical exports were not negatively impacted. Figure 1 shows U.S. medicine exports to Iran rose during President Obama's time in office compared to his predecessor Bush and successor Trump. Evidently, Republican policies deter humanitarian trade with Iran.

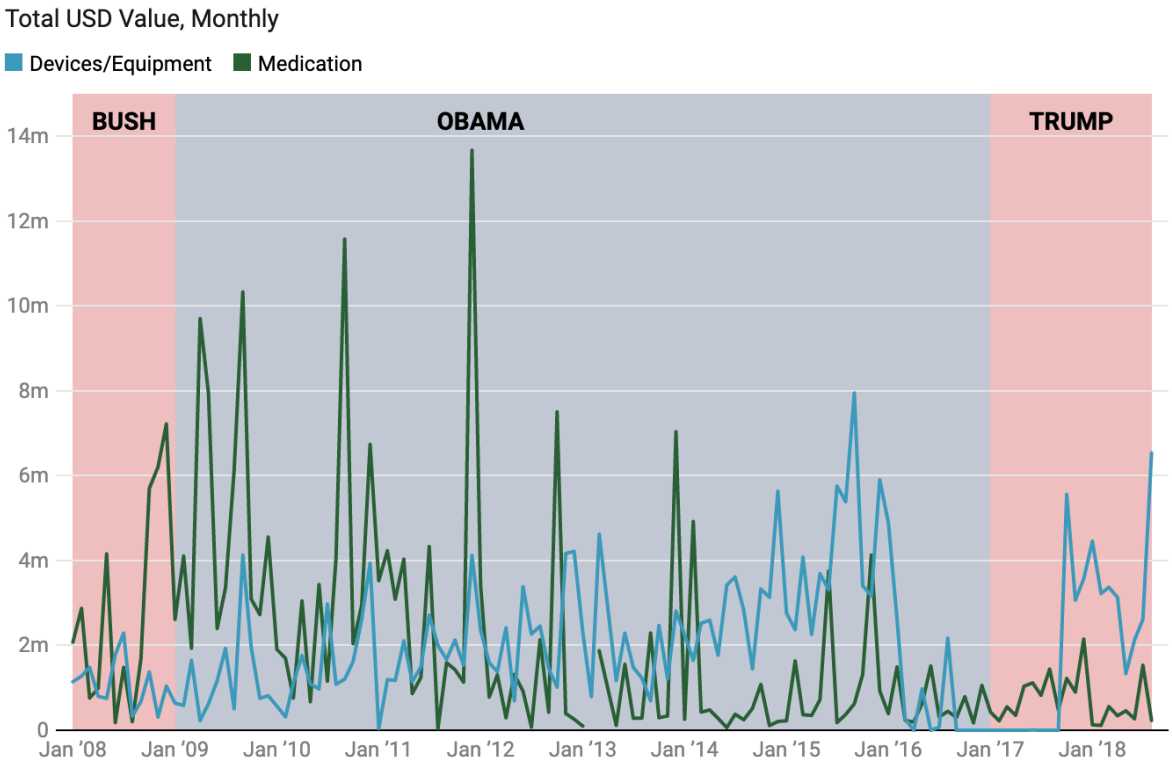

Figure 1: U.S. Exports of Medical Goods to Iran[38]

Under the Obama administration, there was international cooperation to impose multilateral sanctions on Iran. With the involvement of the P5+1 in the effort to curb Iran's nuclear activity, significant attention was placed on ensuring humanitarian trade was not impeded. President Trump, however, received very little support from the international community when he decided to withdrawal the U.S. from the JCPOA in 2018 and impose a "maximum pressure" campaign to subsequently renegotiate a better deal. Consequently, not as much emphasis was placed by the Trump administration to ease the humanitarian impact of sanctions. At its core, the maximum pressure campaign targets Iranian financial institutions, which deters international banks and firms from participating in financial transactions with Iran in fear of triggering secondary sanctions on themselves. Businesses with humanitarian exemptions from the regulations find it hard to export their goods into the country. Pharmaceutical companies willing to export medicine are unable to find banks willing to manage the transaction and shipment companies willing to transport the goods.

These sanctions have also hampered the ability of Iranian businesses from purchasing essential medicine and equipment to treat patients with critical medical conditions. Iran is unable to access the medicine it needs to ensure the health and well-being of its citizens. Reports have even surfaced claiming that U.S. sanctions are preventing Iran from being able to adequately respond to and contain the COVID-19 pandemic within its borders. Patients that rely on imported medicine find it difficult to access and continue the treatment they need to live. Nearly "6 million Iranians have life threatening diseases, such as cancer and AIDS, and are dependent on imported drugs for treatment."[39] Patients with asthma, cancer, diabetes, multiple sclerosis, and other diseases are struggling with shortages and skyrocketing prices. Many have chosen to stop treatment because they cannot afford it, and those that are fortunate enough travel abroad to

seek the treatment they need. Apart from the limited ability to import medicine due to sanctions, there is also the issue of cost. Between 2012 and 2013, the price of medicine in Iran "increased by 50-70 percent."[40] Coupled with the fact that economic sanctions contributed to an increase in unemployment and inflation, medicine in Iran has become less affordable to Iranian patients. It is also important to note that "Iran produces about 90% of its own drugs."[41] As a result of sanctions, Iran's domestic pharmaceutical companies are also struggling to get the supplies they need to manufacture locally produced medicine. Businesses and households across the country are facing shortages in essential medicines. Sanctions have created an environment where no banks or businesses are willing to process a humanitarian transaction to Iran.

Recognizing that Iran is struggling domestically to attain the medical supplies and pharmaceuticals they need, mechanisms have been put in place to try and alleviate the hardship. Shortly after the U.S. withdrew from the JCPOA, the EU created a financial channel called the Instrument in Support of Trade Exchanges (INSTEX) to facilitate trade between Europe and Iran in an effort to sustain the nuclear agreement. However, "recognizing their lack of political and economic leverage over U.S. policy" the EU had to limit the scope of the mission to only "trade in humanitarian goods."[42] Having only piloted one transaction as of August 2020, the instrument still has many obstacles to overcome before this instrument can be an effective channel for humanitarian trade.[43] INSTEX also does not have the support of the United States which, posing as a challenge to its success.

In February of 2020, the United States Department of the Treasury announced they finalized the Swiss Humanitarian Trade Agreement (SHTA) with the Swiss government to facilitate a financial channel designated for humanitarian trade.[44] Participating governments and financial institutions have to go through an onerous process in order to receive assurances from

the Treasury that they will not be sanctioned by the U.S. for engaging in humanitarian related transactions with Iran. Participants will be expected to "conduct enhanced due diligence and provide to Treasury a substantial and unprecedented amount of information, with appropriate disclosure and use restrictions, on a monthly basis."[45] The following information is expected by OFAC in order to maintain compliance:

- "The information used to identify the Iranian customers of the humanitarian trade and to verify their identities and beneficial ownership;
- The information used by financial institutions to understand the purpose and intended nature of business relationships between the seller and the customer in Iran;
- A monthly balance statement of any account of an Iranian financial institution with which they transact;
- A list of Iranian Specially Designated Nationals (SDNs) with which the Iranian customer indicates it has current business relations;
- Detailed information as to the commercial terms and logistics of the transaction, including information about the ultimate customer, all intermediaries involved in the transaction, and the financial arrangements and shipping and transportation logistics underlying the transaction;
- Written confirmation that the Iranian distributor will not allow the goods to be sold or resold to Iranian SDNs; and
- Additional information regularly obtained by the foreign financial institution in connection with its ongoing due diligence measures to verify the consistency of the transaction with the purposes of the humanitarian channel, among other things."[46]

Given the intensive reporting requirements, the incentive to use the financial channel is low and had only been used once in 2020.[47] Practically speaking, the Swiss channel is not a viable solution to conduct the level of humanitarian trade required to meet the needs of the Iranian people.

III. Literature Review

Studies have shown that the consequences of sanctions worsen public health conditions for people in target countries. Durksen Peksen argues that "economic sanctions worsen public health conditions by restricting access to basic needs, worsening economic well-being of civilians, and damaging the effective functioning of health services."[48] Peksen's study shows that sanctions are particularly effective when they are costly to the target economy and the United States is the sender. The economic wealth of the target nation or the involvement of an Intergovernmental Organization (IGO) in sanction imposition do not have a significant impact on mitigating the effect of economic coercion on public health. The study offered quantitative analysis by examining child mortality rate under five years old as a proxy for health status and utilized time series cross-nation data from 1970 to 2000.

The International Journal of Health Policy and Management published a study by Fatemeh Kokabisaghi, assessing the effects of economic sanctions on Iranian's right to health.[49] This study used the Human Rights Impact Assessment (HIRA) tool to assess economic sanctions and identified violated rights and obligations of states according to international human rights laws. The study showed that sanctions resulted in an overall deterioration of people's welfare and lowered their ability to access food, healthcare, and medicine. Sanctions on banking and shipping sectors also led to a scarcity in lifesaving medicines. Humanitarian exemptions do not protect Iranians from the effects of sanctions and sanctioning countries have violated Iranian's right to health.

A more recent study done by the Human Rights Watch focuses specifically on the humanitarian impact of sanctions on Iran after the Trump Administration withdrew from the JCPOA in May 2018.[50] This report argues that the 'Maximum Pressure' campaign poses a

serious threat to Iranians' right to health and access to essential medicines, and that U.S. sanctions against Iran have drastically constrained Iran's ability to finance humanitarian imports. The methodology of this study relied on interviews with individuals with direct ties to Iran or policy expertise on the matter as well as official government statements to conduct their research. The report went on to provide recommendations to the U.S. government, The U.S. Department of Treasury, Office of Foreign Asset Control, U.S. State Department, the U.S. Congress, the European Union and member states, and the Iranian government.

Another study assessed the impact of sanctions on the banking system in 2011 and the central bank in 2012 on the access to and the use of drugs for noncommunicable diseases.[51] The authors did a time series study assessing the effect of sanctions on drugs for diabetes, cancer, and multiple sclerosis. The results showed that market availability of 13 of the 26 drugs examined were significantly reduced. Ten of the drugs showed nonsignificant reductions in their market availability. The authors argue there is strong evidence that sanctions have a negative effect on the access to drugs, particularly those that are dependent on imports.

One such study claims however the sanctions have not reduced Iran's pharmaceutical imports from the European Union (EU).[52] A study done by a think tank called the Foundation for Defense of Democracies (FDD) examined pharmaceutical trades coming from the EU between 2018 and 2019. To gather their data, FDD utilized Eurostat, the EU statistical office that collects and publishes import and export data based on reporting by the Union's member states. The study examines the percentage of pharmaceutical imports going to Iran from the EU. FDD claims that imports are "16 percent higher than the amount imported during the first half of 2012, the height of sanctions under the Obama administration." They also explain that that was a 2.5 percent increase in pharmaceutical imports in the first half of 2019 compared to the first six

months of 2018. This study is problematic for several reasons. First, merely pointing to percent changes in pharmaceutical imports does not imply causality or correlation. There could be several factors other than sanctions inflating the percentage of trade between 2012 and 2019. This study is also problematic because it only examines imports into Iran coming from the EU. Iran has substantial trade relations with countries other than member states of the EU. A significant amount of medicine and medical supplies come from China, Russia, the United States, and South East Asia. Only examining trade with the EU can substantially skew and bias the results. The study conducted by FDD is methodologically flawed and does not offer sound evidence to assert that sanctions do not have an impact on humanitarian trade.

Another study conducted by a think tank called the National Iranian American Council (NIAC), measured the cost of sanctions on the sanctioning country.[53] This study looked at U.S. and international sanctions using a gravity model approach to analyze the data. NIAC found that the U.S. is the biggest loser of all sanctions enforcing nations. "From 1995 to 2014, the U.S. sacrificed between $203.1 and $271.8 billion in potential export revenue to Iran."[54] Between 2010 and 2012, sanctions cost the EU more than twice as much as the U.S. in terms of lost trade revenue.[55] This study is different from the literature previously mentioned in that it does not look at the humanitarian impact of sanctions, but rather the economic effects of sanctions on the sanctioning country. It does however provide valuable insight on how to employ a sound empirical model for examining sanctions and their impact on international trade.

My paper contributes to existing literature by doing a longitudinal assessment of the effects of sanctions on humanitarian imports into Iran. Iran is a good country to examine under Peksen's model because Iran is the most heavily sanctioned country by the United States. If public health effects of sanctions manifest themselves, they would most likely appear in Iran. My

study will also rely on empirical evidence to examine the claim that U.S. sanctions exacerbate public health effects in Iran. Although Human Rights Watch had good observational data to support its claims it does not have empirical evidence. My study will seek to support their claims through regression analysis. My approach will also be similar to NIAC in that I will be employing a gravity model to test my hypothesis that U.S. sanctions on Iran deter humanitarian trade. Lastly, my study will be looking at the imports of humanitarian goods exempt from U.S. sanctions. Prior studies have suggested looking at imports as evidence to show that imported drugs are more likely to be affected by sanctions. As such, my study will be look at pharmaceutical imports.

IV. The Data

The data were merged from four main sources in order to conduct this study. Part of the data come from the United Nations Comtrade Database.[56] These data capture information on the import and export levels of pharmaceuticals goods to and from Iran over the past two decades.[vi] The second portion of the data were collected from CEPII's GeoDist database.[57] The package provides country-specific geographical data including bilateral distance measures and "dummy variables indicating whether two countries are contiguous, share a common language or a colonial relationship."[58] The third portion of the data were created by me to capture various sanctions regimes imposed on Iran.[59] Given there is no standard way for classifying sanctions, a little more discretion was exercised in examining the data. U.S. sanctions on Iran have constantly been in place since the 1980s, and there are very few instances where they have been lifted. In order to capture variation in the data, I created dummy variables to examine sanction regimes by changes in leadership at the White House. Dummy variables were created for President Clinton through Trump. A dummy variable was also created to examine sanctions lifted under the JCPOA since this also provides an example in history when sanctions were meaningfully lifted on Iran. Another dummy variable was also created to capture sanctions imposed by the United Nations. The last part of the data was gathered from the World Bank database on world development indicators.[60] The primary variables extracted from this dataset include importer and exporter GDP. The data sources were merged according to year or country. Other variables were extracted as well to help avoid omitted variable bias. I ran analysis on variables for foreign direct investment, population growth, commercial banks, and other lending, and fuel imports and

[vi] UN Comtrade database does not have data available for 2007, 2008, 2009, and 2012. Although there are some gaps in the data, this will not be problematic for running regression analysis.

exports, however these variables were neither significant nor provided valuable insight. Ultimately, I determined that the gravity model for international trade will best assess the significance of my hypothesis. A table of descriptive statistics of variables used in the empirical model is provided at the end of this section. In this study there are 840 observations across a series of 21 years dating from 1997 to 2018. In general, the data are gathered from the best sources possible given the challenges that have presented themselves on a country known for unreliable data collection. Many sources that were examined were either untrustworthy or incomplete and therefore could not be used. The quality of the data has been improved through further research and the data set will allow for a consistent estimation of the empirical model presented in Section V.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Clinton	841	0.188	0.391	0	1
Bush	841	0.288	0.453	0	1
Obama	841	0.389	0.488	0	1
Trump	841	0.136	0.343	0	1
UNsanctions	841	0.344	0.475	0	1
JCPOA	841	0.205	0.404	0	1
comlang ethno	841	0.013	0.114	0	1
contig	841	0.038	0.191	0	1
lnGDP cons	841	26.757	0.22	26.392	27.052
lnPartnerGDP cons	840	26.527	1.675	20.313	30.517
lndistcap	841	8.284	0.699	6.292	9.629
lnTradeValueUS	841	14.29	2.863	2.708	19.616

V. Theoretical Model

The following is the theoretical model to demonstrate the mathematical relationship I am assuming in my thesis:

$$\boldsymbol{HT = f(S, G, D, P, e)} \quad (1)$$

Where: *HT* is humanitarian trade, *S* is sanctions, *G* represents GDP characteristics of importer and exporter countries, *D* represents kilometric distance between trade partners, *P* represents controls for characteristics of the trading partners, and *e* is a random error. The gravity model of international trade is presented here as an intuitive way of understanding trade flows. The term 'gravity' comes from Newton's law of gravity which states that gravitational pull is a function of the mass of and distance between two bodies. More specifically, gravitational attraction is directly correlated with mass and inversely correlated with distance. The gravity model of trade is a social science application that states "exports are directly proportional to the exporting and importing countries' economic "mass" (GDP), and inversely proportional to the distance between them."[61] In other words, I expect larger countries to trade more with Iran, but I also expect countries that are further apart to trade less due to higher trade costs. In Iran, sanctions have impacted every sector of the economy making it difficult for people to access adequate healthcare. Iran relies on imports to provide care for its people, and sanctions have hampered its ability to access the goods it needs to provide medicinal and pharmaceutical products. I next discuss the specifics of how I apply the gravity model to my data.

VI. Empirical Model

My thesis will examine the relationship between sanctions on Iran and the humanitarian impact it has on the country. I hypothesize that U.S. sanctions have reduced access to medicine and pharmaceutical imports to Iran while UN sanctions will have no discernable harm on humanitarian trade. Thus, the null hypothesis can be stated as:

H0: U.S. sanctions have reduced access to humanitarian trade, where:

The independent variables that are included in the model are as follows:

X_1 variable: Sanctions on Iran (Clinton, *Bush*, *Obama*, *Trump*, *JCPOA*, *UNsanctions*, *Rep*, or *Dem)*
X_2 variable: Importer GDP (lnGDP_cons)
X_3 variable: Exporter GDP (lnPartnerGDP_cons)
X_4 variable: Distance (lndistcap)
X_5 variable: Common Language (comlang_ethno)
X_6 variable: Contiguity (contig)
ε is the random error

The dependent variable is humanitarian trade, or more specifically, pharmaceutical imports to Iran. The true model is estimated as follows:

$$lnTradeValueUS = \beta_0 + \beta_1 sanctions + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (2)$$

There are two classifications of variables in my study: gravity model variables and sanction variables. Gravity model variables include the natural log of pharmaceutical imports, importer and exporter GDP, distance, shared language, and contiguity. Traditional gravity variables for former colony and common colonizer were dropped due to collinearity and thus are not included in the model. Sanctions variables are captured by presidential dummies for Presidents Clinton through Trump (which equal 1 for the years the person in question was president and zero otherwise) to capture sanctions regimes imposed by each administration. Dummy variables were created to capture political party of the president as well. Lastly, there

are dummy variables for the implementation of the JCPOA and the imposition of UN sanctions on Iran. A full list of variable names and explanations is provided in table 3 at the end of this section.

In gravity model literature, the control factors for historical and cultural links are significant determinants of bilateral trade. Countries with historical and cultural links are important determinants of trade. For instance, those that share a border or a common language are more likely to trade than not. I hypothesize that countries that share a boarder or common language with Iran will have a significant upward sloping relationship with humanitarian trade.

Observing imports on pharmaceuticals products is a sound approach to examining the humanitarian impact of sanctions because Iran primarily relies on imports to manufacture pharmaceuticals and medical supplies. I expect to see a significant downward sloping relationship between sanctions and humanitarian trade. The reason is because sanctions, by design, have broad sweeping effects on the economy.

Table 3: Variable Names and Descriptions

Variable	Description
Clinton	Dummy variable representing Iran sanctions regime during the Clinton administration
Bush	Dummy variable representing Iran sanctions regime during the Bush administration
Obama	Dummy variable representing Iran sanctions regime during the Obama administration
Trump	Dummy variable representing Iran sanctions regime during the Trump administration
JCPOA	Dummy Variable representing sanctions releif under the JCPOA
UNsanctions	Dummy variable representing Iran sanctions regime under the United Nations
contig	Dummy variable representing country pairs with a shared land border
comlang_ethno	Dummy variable representing country pairs with shared language, based off language spoken
lnGDP_cons	Natural log of dollar figures for Iran GDP converted from domestic currencies using 2010 official exchange rates
lnPartnerGDP_cons	Natural log of dollar figures for exporter GDP converted from domestic currencies using 2010 official exchange rates
lndistcap	Natural log of kilometric distance between two capital cities in country pair
lnTradeValueUS	Natural log of dollar trade value of pharmaceutical products by country pair

Model Structure

The models are logarithmic-linear (log-linear), meaning the variables are either in natural log or take the form of dummy variables that take on the value of one or zero (one indicates on, while zero indicates off). The logarithmic variables include trade value, trade partner GDP, Iran GDP, and distance. All regressions include a dummy variable indicating contiguity, shared language, as well as one sanctions dummy variable. The sanction variable either captures a sanction regime imposed by a U.S. president (with the variable named for the president in question), the United Nations, or the lifting of international sanctions under the JCPOA.

It is important to point out two procedures essential for the gravity model. First, I used the *robust* command in STATA to correct for violations of homoscedasticity. Second, I used the *cluster* command to group error terms as defined by the variable of choice. I use the distance variable as the clustering variable because, presumably, the distance between countries does not change and therefore this will robustly identify trading partners and address various quantitative issues.[62]

Lastly, it is important to note there are eight dummy variables representing sanctions. Each variable is run in a separate regression because issues with collinearity rule out the option of running one equation or even two equations. As such, the sanctions variables include: *Clinton*, *Bush*, *Obama*, *Trump*, *JCPOA*, *UNsanctions*, *Rep*, and *Dem*.

Model Equations

$$lnTradeValueUS = \beta_0 + \beta_1 Clinton + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (3)$$

$$lnTradeValueUS = \beta_0 + \beta_1 Bush + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (4)$$

$$lnTradeValueUS = \beta_0 + \beta_1 Obama + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (5)$$

$$lnTradeValueUS = \beta_0 + \beta_1 Trump + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (6)$$

$$lnTradeValueUS = \beta_0 + \beta_1 JCPOA + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (7)$$

$$lnTradeValueUS = \beta_0 + \beta_1 UNsanctions + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (8)$$

$$lnTradeValueUS = \beta_0 + \beta_1 Rep + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (9)$$

$$lnTradeValueUS = \beta_0 + \beta_1 Dem + \beta_2 lnGDP\_cons + \beta_3 lnPartnerGDP\_cons + \beta_4 lndistcap + \beta_5 comlang\_ethno + \beta_6 contig + \varepsilon \quad (10)$$

Regression Variable Analysis

Overall, the results conform with the literature on the gravity model and the humanitarian impact of sanctions. The results are displayed in tables 4 through 6. The overall explanatory capacity of the models explained by the R-squared variable are good considering a relatively small sample size of 840. According to the regression analysis my dependent variable explains nearly 22% of the variability in the independent variable. Another indication the model is performing well is through the model F-test which is highly significant. In all instances, it rejects the hypothesis that all coefficients on the independent variables are jointly equal to zero at the 99.99% confidence level, with an F-value ranging from 9.67 to 11.61.

The results consistently show that the natural log of GDP for both trade partners and Iran are significant at the 95% or 99% confidence level. The only exception to this is under the

Obama administration, where the natural log of Iran's GDP is statistically insignificant. GDPs for both Iran and trade partners were statistically associated with an increase in trade levels. The natural log of distance, contiguity, and common language were associated with a decrease in trade level, but these variables are statistically insignificant. This outcome is especially surprising since these variables generally are statistically significant in gravity model regressions. The sign of the relationship for distance, contiguity, and common language do align with my hypothesis however, in that those that do not share a common language or a border are less likely to trade. It may be reasonable to assume that the statistical insignificance can be attributed to data limitations. In looking more specifically at distance, it could also be reasonably argued that given the inelasticity of pharmaceutical products, distance does not play a significant factor because pharmaceuticals will move across borders without much consideration for costs. The coefficient for distance at -0.6 can be interpreted as an elasticity measure for pharmaceutical products, however this is an imprecise estimate given the lack of statistical significance.

The dummy variables for sanctions are particularly interesting. The variables for Presidents *Clinton, Bush* and *Trump* were statistically insignificant along with the *JCPOA*. However, the variables for President *Obama* and *UNsanctions* were statistically significant at the 95% and 90% levels, respectively. For both *Obama* and *UNsanctions,* a 1% increase in trade partner GDP is associated with a 0.82% increase in trade at the 99% confidence level.

Table 4: U.S. Sanctions Regime by President

VARIABLES	(1) Trump	(2) Obama	(3) Bush	(4) Clinton
Clinton				0.0724
				(0.269)
Bush			-0.250	
			(0.201)	
Obama		0.441**		
		(0.189)		
Trump	-0.328			
	(0.242)			
contig	-1.224	-1.227	-1.265	-1.244
	(0.792)	(0.788)	(0.790)	(0.793)
comlang_ethno	-0.731	-0.717	-0.741	-0.743
	(0.498)	(0.504)	(0.505)	(0.498)
lnGDP_cons	1.795***	0.980	1.363**	1.646**
	(0.551)	(0.632)	(0.555)	(0.730)
lnPartnerGDP_cons	0.821***	0.821***	0.821***	0.821***
	(0.140)	(0.140)	(0.140)	(0.140)
lndistcap	-0.623	-0.625	-0.631	-0.627
	(0.413)	(0.414)	(0.411)	(0.412)
Constant	-50.26***	-28.64	-38.57**	-46.28**
	(15.40)	(17.30)	(15.20)	(20.68)
Observations	840	840	840	840
R-squared	0.224	0.227	0.224	0.223

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Under Obama, pharmaceutical imports increased 44%. For instance, in 2015 a 44% increase in trade translates into $636,363,000.00. According to this analysis, lifting US sanctions resulted in an increase flow of humanitarian goods into Iran. The only substantial instance of variability of U.S. sanctions on Iran took place under the Obama administration. Therefore, it is reasonable to conclude that with the imposition of U.S. sanctions the reverse is true and humanitarian trade is impeded.

The imposition of UN sanctions also show that humanitarian trade increased by 32%. For instance, in 2011 a 32% increase in trade translates into $477,224,000.00. A 1% increase in

Iran's GDP was associated with the 0.26% increase in trade level.[vii] This pattern in trade is consistent with literature in that the involvement of an IGO in sanctions imposition has no discernable harm on the flow of humanitarian goods.

Even more interesting are the differences among party lines. When Democrats are in the White House, pharmaceutical imports have increased by 30% at the 90% confidence level. Alternatively, when Republicans have been in office, pharmaceutical imports decrease by 30%. Therefore, it is appropriate to assert that the Trump Administration's policy stance towards Iran was responsible for a decrease in global pharmaceutical imports by $477,225,000.00 in 2018.[viii] These results show that policies implemented by Democratic presidents improve the flow of humanitarian trade while Republican presidents impede that trade.

As hypothesized in my theoretical model, the findings support the basic intuition of the gravity model. The directional relationship between GDP and trade value suggests a positive association confirming that bigger countries tend to trade more. By contrast, the negative association between distance and trade value shows country pairs that are further apart trade less. Although the sign of bias shows an inverse relationship, it is not statistically significant and therefore is not appropriate to interpret. The results also confirm my hypothesis that U.S. sanctions have a negative impact on humanitarian trade with Iran. UN sanctions, however, do not have a negative impact but rather help with the flow of pharmaceutical imports to Iran.

In the next section I discuss the policy implications of these results.

[vii] In equation form $\Delta\ \% = e^{\beta x} - 1$.

[viii] It should be noted that the data cuts off at 2018 and does not reflect the entirety of President Trumps time at the white house.

Table 5: UN Sanctions and the JCPOA

VARIABLES	(1) JCPOA	(2) UN
UNsanctions		0.319*
		(0.177)
JCPOA	-0.333	
	(0.258)	
contig	-1.223	-1.217
	(0.795)	(0.792)
comlang_ethno	-0.726	-0.740
	(0.497)	(0.501)
lnGDP_cons	1.922***	1.256**
	(0.552)	(0.626)
lnPartnerGDP_cons	0.821***	0.821***
	(0.140)	(0.140)
lndistcap	-0.622	-0.622
	(0.412)	(0.413)
Constant	-53.63***	-35.98**
	(15.20)	(17.42)
Observations	840	840
R-squared	0.224	0.225

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: The Impact of Sanctions Along Party Lines

VARIABLES	(1) Republican	(2) Democrat
Dem		0.303*
		(0.166)
contig	-1.257	-1.257
	(0.791)	(0.791)
comlang_ethno	-0.732	-0.732
	(0.507)	(0.507)
lnGDP_cons	1.547***	1.547***
	(0.575)	(0.575)
lnPartnerGDP_cons	0.820***	0.820***
	(0.140)	(0.140)
lndistcap	-0.629	-0.629
	(0.413)	(0.413)
Rep	-0.303*	
	(0.166)	
Constant	-43.45***	-43.76***
	(16.03)	(16.05)
Observations	840	840
R-squared	0.226	0.226

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VII. Policy Recommendations

My results show that U.S. sanctions impede the flow of humanitarian trade to Iran. The results also show that whether deliberate or not, decisions along party lines significantly affect the outcome of the pharmaceutical trade. Although certain mechanisms exist to help with the humanitarian assistance, such as INSTEX and SHTA, these channels have been unsuccessful in overcoming the challenges that exist under U.S. sanctions. The extensive reporting requirements under the Swiss channel serve as a deterrent to use. As such, the channel has not been utilized to the volume required to meet the needs of the Iranian people. INSTEX also has its own problems as it does not have the official endorsement of the U.S. government which could put those who use it at risk of triggering U.S. sanctions. Private firms cannot be assured they will not be penalized even if they are exporting humanitarian goods.

While in theory the Swiss and EU channel were supposed to alleviate the humanitarian concerns of U.S. sanctions, in reality there are still barriers that make it nearly impossible for Iran to receive a meaningful level of pharmaceutical imports. A viable channel of financial transactions for humanitarian trade should be established to alleviate the suffering that the Iranian people are experiencing due to sanctions. The White House should set up a direct financial channel between the U.S. and Iran to alleviate the suffering. OFAC should issue a general license authorization for a U.S. bank to establish a relationship with an Iranian bank for transactions authorized under the Iranian Transactions and Sanctions Regulations.[63] Precedent exists for the U.S. to establish a direct financial channel with another country. Under the Burmese sanctions program, OFAC issued general licenses authorizing U.S. financial institutions to engage in transactions with Burmese financial institutions, subject to certain limitations.[64] Establishing a direct financial channel with Iran will remove major barriers for the private sector

and signal to banks that doing business in Iran is permissible. Financial institutions refuse to process authorized transactions in fear of triggering U.S. sanctions; however, by establishing a direct financial relationship with Iran, the U.S. could instill confidence in firms to safely and transparently trade with Iran. The U.S. would also control and oversee the channel to ensure legitimate transactions are being processed. This would alleviate some of the bureaucratic hurdles that businesses faced under SHTA since the United States would shoulder the burden of oversite and management of the channel. Setting up a direct channel would remove major barriers and create a viable channel for businesses to engage in permissible transactions with Iran.

Under the direction of President Biden, the United States Department of Treasury should also take major steps to issue clarifying guidance on the protection of humanitarian trade. It is important for businesses and banks to get a clear signal from the U.S. that they will not face legal or financial repercussions for participating in legitimate transactions with Iran that are exempted humanitarian goods. This would provide businesses and banks with the assurance and confidence they need to do business with Iran. The Treasury Department should take additional steps to "direct outreach to companies and financial institutions to clarify humanitarian exemptions."[65] This would further instill confidence in the private sector and banks that it is safe to do business with Iran.

When new data become available, more research should be conducted to examine the full effects of the maximum pressure campaign imposed by former President Trump. My data does not extend beyond 2018 and therefore I was not able to examine the full effect of Trump's presidency. Following up on this research when more data are available would also expand the country-sanction-year observations, likely providing meaningful and valuable insight and

enhanced precision in the estimates. In general, better data should also be collected to fill the gaps in my research and to also track the effectiveness of sanctions, both in terms of outcome but also in terms of allowing humanitarian aid as part of the implementation of any sanctions.

VIII. Conclusion

I set out to examine the relationship between U.S. sanctions and humanitarian trade. To accomplish this study, I created a dataset on the trade value of pharmaceutical imports to Iran, geographic distance measures, and economic development indicators. I also created several measures to capture various sanctions regimes. To measure this relationship, I used the gravity model of international trade. In general, the interaction between sanctions and humanitarian trade is significant. In particular, I find that when Republicans have been in the White House, they have impeded humanitarian trade with Iran while the reverse is true for Democrats—when Democrats have been in the White House, humanitarian trade with Iran has improved. My research also supports previous literature showing that sanctions imposed by IGOs do not have a negative impact on public health. Variables that are insignificant include distance, contiguity, and common language. While in other studies these variables are statistically significant, they are not in my study. I recommend further study when more data become available to examine these inconsistencies. Expanding the data would also increase the observation count, which would invariably strengthen the results.

Although observations are low for a study of this nature, the results are in no way limited in application and real-world value. This research can be taken to further improve policy decisions and outcomes at the White House with regards to humanitarian relief for Iran. One such viable solution would be to create a direct financial channel between the United States and Iran to assist with humanitarian relief. U.S. government officials can no longer claim myth to the humanitarian impact of U.S. foreign policy towards Iran. My study quantitatively supports the claim that U.S. sanctions on Iran reduce humanitarian aid intended for the Iranian people.

IX. References

[1] Tabatabai, A. M., & Samuel, A. T. (2017). What the Iran-Iraq War Tells Us about the Future of the Iran Nuclear Deal. *International Security*, *42*(1), 152–185. https://doi.org/10.1162/ISEC_a_00286

[2] *"Maximum Pressure": US Economic Sanctions Harm Iranians' Right to Health* (p. 47). (2019). Human Rights Watch. https://www.hrw.org/report/2019/10/29/maximum-pressure/us-economic-sanctions-harm-iranians-right-health

[3] ShareAmerica. (2020, September 23). *Dispelling myths about U.S. sanctions on Iran [video]*. https://share.america.gov/dispelling-myths-about-u-s-sanctions-on-iran-video/

[4] *Iran—Unemployment rate 1999 to 2020*. (n.d.). Statista. Retrieved March 28, 2021, from https://www.statista.com/statistics/294305/iran-unemployment-rate/

[5] Kumar Sen, Ashish. "A Brief History of Sanctions on Iran." Atlantic Council, May 18, 2018. https://www.atlanticcouncil.org/blogs/new-atlanticist/a-brief-history-of-sanctions-on-iran/. (The entirety of this paragraph summarizes facts provided from this source.)

[6] Peksen, Dursun. "Economic Sanctions and Human Security: The Public Health Effect of Economic Sanctions." *Foreign Policy Analysis* 7, no. 3 (2011): 237–51.

[7] Office of Foreign Asset Control. "Sanctions List Search." Government. Accessed November 4, 2020. https://sanctionssearch.ofac.treas.gov/.

[8] Samore, G. (2015). *Sanctions Against Iran: A Guide to Targes, Terms, and Timetables* (p. 47). Harvard Kennedy School Belfer Center for Science and International Affairs. https://www.belfercenter.org/sites/default/files/legacy/files/Iran%20Sanctions.pdf

[9] Samore, G., p. 32

[10] Samore, G., p. 5

[11] Samore, G., p. 32

[12] Samore, G., p. 43

[13] *Resolution 1696 (2006)*. (2006). United Nations Security Council. https://home.treasury.gov/system/files/126/1696.pdf

[14] *Resolution 1737 (2006)*. (2006). United Nations Security Council. https://home.treasury.gov/system/files/126/1737.pdf

[15] *Resolution 1747 (2007)*. (2007, March 24). United Nations Security Council. https://home.treasury.gov/system/files/126/1747.pdf

[16] *Resolution 1803 (2008)*. (2008, March 3). United Nations Security Council. https://home.treasury.gov/system/files/126/1803.pdf

[17] *Resolution 1929 (2010)*. (2010). United Nations Security Council. http://www.tandfonline.com/doi/abs/10.1080/13642980008406917

[18] *Resolution 2231 (2015)*. (2015). United Nations Security Council. https://home.treasury.gov/system/files/126/2231.pdf

[19] Obama, B. (2008, June 4). *Transcript: Obama's Speech at AIPAC*. NPR.Org. https://www.npr.org/templates/story/story.php?storyId=91150432

[20] Kumar Sen, Ashish.

[21] Samore, G., p. 34

[22] Samore, G., p. 45

[23] Samore, G., p. 45

[24] Kumar Sen, Ashish.

[25] Samore, G., p. 21

[26] Samore, G., p. 21

[27] Samore, G., p. 21

[28] Samore, G., p. 21

[29] Foreign Terrorist Organizations. (n.d.). *United States Department of State*. Retrieved April 6, 2021, from https://www.state.gov/foreign-terrorist-organizations/

[30] *Iran Attack: U.S. Sanctions Top Officials, Metals*. (2020, January 10). https://iranprimer.usip.org/index.php/blog/2020/jan/10/iran-attack-us-sanctions-top-officials-metals

[31] *Iran Attack: U.S. Sanctions Top Officials, Metals*. (2020, January 10). https://iranprimer.usip.org/index.php/blog/2020/jan/10/iran-attack-us-sanctions-top-officials-metals

[32] Boyce, S. T., Nelson, L., Schouten, S., & Territt, H. (2020, January 21). *New Sanctions Target Additional Sectors of Iranian Economy*. JD Supra. https://www.jdsupra.com/legalnews/new-sanctions-target-additional-sectors-19976/

[33] Wall, C., Fischer, N., Becker, S., Huntman, A., & Motazedi, R. (2020, October 12). *U.S. Steps Up Pressure on Iran with Sanctions on Additional Financial Institutions and Continuation of Arms Embargo*. Global Trade & Sanctions Law. https://www.globaltradeandsanctionslaw.com/u-s-steps-up-pressure-on-iran-with-sanctions-on-additional-financial-institutions-and-continuation-of-arms-embargo/

[34] "Clarifying Guidance: Humanitarian Assistance and Related Exports to the Iranian People." United States Department of Treasury, Office of Foreign Asset Control, February 6, 2013. https://home.treasury.gov/system/files/126/hum_exp_iran.pdf.

[35] Clarifying Guidance, p. 2

[36] Gordon, Jay. "The Human Costs of the Iran Sanctions." Foreign Policy, October 18, 2013. https://foreignpolicy.com/2013/10/18/the-human-costs-of-the-iran-sanctions/.

[37] Gordon, Jay.

[38] Batmanghelidj, E. (n.d.). *Under Trump, US Sale of Medical Goods to Iran Down Nearly 40%.* Bourse & Bazaar. Retrieved April 6, 2021, from https://www.bourseandbazaar.com/articles/2018/10/22/under-trump-us-sale-of-medical-goods-to-iran-down-nearly-40

[39] Gordon, Jay.

[40] Azodi, Sina. "How US Sanctions Hinder Iranians' Access to Medicine." *Atlantic Council* (blog), May 31, 2019. https://www.atlanticcouncil.org/blogs/iransource/how-us-sanctions-hinder-iranians-access-to-medicine/.

[41] Mohammadi, Dara. "US-Led Economic Sanctions Strangle Iran's Drug Supply." *The Lancet* 381, no. 9863 (January 26, 2013): 279. https://doi.org/10.1016/S0140-6736(13)60116-6.

[42] Erästö, T. (2020, August 27). *After UN Showdown, INSTEX Can Help Sustain Iran Nuclear Deal*. Bourse & Bazaar. https://www.bourseandbazaar.com/articles/2020/8/27/after-un-showdown-instex-can-help-sustain-iran-nuclear-deal.

[43] Erästö, T. (2020, August 27).

[44] *United States and Switzerland Finalize the Swiss Humanitarian Trade Arrangement | U.S. Department of the Treasury*. (2020, February 27). U.S. Department of the Treasury. https://home.treasury.gov/news/press-releases/sm919

[45] *Treasury and State Announce New Humanitarian Mechanism to Increase Transparency of Permissible Trade Supporting the Iranian People | U.S. Department of the Treasury*. (2019, October 25). U.S. Department of the Treasury. https://home.treasury.gov/news/press-releases/sm804

[46] Noorbaloochi, S. (2020, October 9).

[47] Noorbaloochi, S. (2020, October 9). *New Financial Sector Sanctions Will Eviscerate Humanitarian Trade with Iran*. Just Security. https://www.justsecurity.org/72749/new-financial-sector-sanctions-will-eviscerate-humanitarian-trade-with-iran/

[48] Peksen, Dursun. "Economic Sanctions and Human Security: The Public Health Effect of Economic Sanctions." *Foreign Policy Analysis* 7, no. 3 (2011): 237–51.

[49] Kokabisaghi, Fatemeh. "Assessment of the Effects of Economic Sanctions on Iranians' Right to Health by Using Human Rights Impact Assessment Tool: A Systematic Review." *International Journal of Health Policy and Management* 7, no. 5 (January 20, 2018): 374–93. https://doi.org/10.15171/ijhpm.2017.147.

[50] "Maximum Pressure': US Economic Sanctions Harm Iranians' Right to Health." Human Rights Watch, October 2019. https://www.hrw.org/report/2019/10/29/maximum-pressure/us-economic-sanctions-harm-iranians-right-health.

[51] Kheirandish, Mehrnaz, Vida Varahrami, Abbas Kebriaeezadeh, and Majid Cheraghali. "Impact of Economic Sanctions on Access to Noncommunicable Diseases Medicines in the Islamic Republic of Iran." *Eastern Mediterranean Health Journal* 24 (April 5, 2018). https://doi.org/10.26719/2018.24.1.42.

[52] FDD. "FDD | Sanctions Have Not Reduced Iran's Pharmaceutical Imports From EU, Data Show," October 30, 2019. https://www.fdd.org/analysis/2019/10/30/sanctions-have-not-reduced-irans-pharmaceutical-imports-from-eu-data-show/.

[53] Leslie, Johathan, Trita Parsi, and Reza Marashi. "Losing Billions: The Cost of Iran Sanctions to the U.S. Economy." National Iranian American Council, July 2014.

[54] Leslie, Johathan, Trita Parsi, and Reza Marashi. "Losing MORE Billions: The Cost of Iran Sanctions to the U.S. Economy." National Iranian American Council, December 2016.

[55] Losing Billions, Pp. 3.

[56] United Nations. "Download Trade Data | UN Comtrade: International Trade Statistics," n.d. https://comtrade.un.org/data/.

[57] Pachamaltese. (2021). *Pachamaltese/cepiigeodist* [R]. https://github.com/pachamaltese/cepiigeodist (Original work published 2020)

[58] Pachamaltese. (2021).

[59] aleph. "OpenSanctions." Accessed December 1, 2020. https://docs.alephdata.org/data-commons/sanctions.

[60] The World Bank. "World Development Indicators | DataBank," n.d. https://databank.worldbank.org/indicator/NY.GDP.MKTP.CD/1ff4a498/Popular-Indicators#advancedDownloadOptions.

[61] Shepherd, B. (2013). *The Gravity Model of International Trade: A User Guide*. United Nations. https://www.unescap.org/sites/default/files/full-report-gravity-model-2013.pdf

[62] Shephard, p. 28-29

[63] *Establishing a Direct Financial Channel between the United States and Iran*. (2014). National Iranian American Council. http://28d0so13ppai3ijpls45gl2s4gb.wpengine.netdna-cdn.com/wp-content/uploads/2014/11/NIAC-Policy-Memo-No.-2.pdf

[64] *Burma Sanctions Program*. (2015). Office of Foreign Assets Control. https://home.treasury.gov/system/files/126/burma.pdf

[65] "'Maximum Pressure': US Economic Sanctions Harm Iranians' Right to Health."