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Article

# The Macroeconomic Determinants and the Impact of Sanctions on FDI in Iran: A Case Study

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**Abstract:** In this paper, we examine the impact of the macroeconomic determinants of foreign direct investment inflows. We also investigate the moderating role of sanctions in FDI inflows into Iran. The empirical results reveal that macro determinants such as infrastructure, exchange rate, inflation rate, investment return, and governance have a long-run impact on FDI inflows in Iran. Our findings also show that GDP growth rate and trade openness have no significant effect on FDI. Our results indicate that sanctions do not have a significant moderating role in the relationship between macroeconomic factors and foreign direct investment. Surprisingly, international sanctions have a positive relationship with FDI inflows in Iran. Furthermore, sanction has a positive impact on inflation rate and exchange rate in Iran. Finally, our findings show that sanctions have had a significant impact on Iran's economic growth in recent years due to increasing the severity level of sanctions.

**Keywords:** FDI inflows, sanctions, political stability, macroeconomic factors, GDP growth, Iran

**JEL Classification:**

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## 1. Introduction

Foreign direct investment is an indispensable source of finance for developing countries, but policymakers must minimize their risks. FDI can help host countries to generate employment, technology diffusion, economic growth and sustainable development (UNCTAD, 2015). "The World Bank's edition of global development finance emphasize the importance of 'absorptive capacities' in the success of FDI. However, according to Alfaro et al, (2004) "absorptive capacities include (1) macroeconomic management (e.g. inflation and trade openness), (2) infrastructure (e.g. telephone lines and paved roads), and (3) human capital (e.g. share of labor force with secondary education and percentage of population with access to sanitation)". Furthermore, potential risk in developing countries should minimized through good governance and strong institutions, high absorption capacity and an effective legal framework (UNCTAD, 2015).

The inflows of FDI have shown an increasing trend over the last ten years of the 20th century, that doubles the world economy, trade flows (Rajana et al., 2008; Sinani & Meyer, 2004). However, prospects for global FDI inflows are good, with a projected growth of 11 per cent to \$1.37 trillion in 2015. It is expected that global FDI flows may increase further to \$1.5 trillion in 2016 and to \$1.7 trillion in 2017. Thus, based on UNCAD's FDI forecast model and its survey related to multinational enterprises (MNEs) show an increase rise of FDI flows in the future.

According to UNCTAD (2017), weak oil prices and political uncertainty continue to effect on FDI inflows in West Asia including Iran. FDI flows to the region in 2016, dropped by 2 per cent to \$28 billion, as persistent low oil prices, political and geopolitical uncertainties, as well as regional conflicts. These factors have long been critical determinants of FDI inflows in West Asia. FDI figures for oil and gas do not give a detailed picture of FDI in the industry; however, foreign entry into oil and gas industries often includes unconventional arrangements such as management contracts and production sharing agreements.

FDI figures for oil and gas do not give an accurate picture of the scale of MNEs' involvement in this industry, however, as foreign entry in oil and gas production often involves non-equity modes such as management contracts and production-sharing arrangements.

Depending on the levels of economic, social, and political development, there are many literatures on determinants of the FDI inflows (for example, Stack et al., 2017; Villaverde & Maza, 2015; Naude' & Krugell, 2007; Buckley et al., 2007; Asiedu, 2002; Dunning, 2002). The literatures found market size and growth (Bevan & Estrin, 2004); availability of natural resources (e.g. Elheddad, 2017); skilled and qualified human capital (e.g. Kar 2013; Ndeffo, 2010; Lewin et al., 2009); quality of infrastructure (Cheng & Kwan, 1999); and government policies (Cleeve, 2008); governance quality (Abdioglu et al., 2013); and political stability (Cleeve, 2012; Musibah, 2015). Therefore, these factors might help countries with slow or high economic growth. In the other word, countries that have FDI determinant factors are more likely to attract foreign direct investment. However, in the absence of FDI determinants, some countries might lose out in the attraction and retention of FDI (Cleeve et al, 2015).

While it is generally assuming that the boycott of bilateral direct trade between the United States and Iran has been the channel for economic losses for both sides, nothing could be further from the truth. For Iran, the real cost of direct trade losses is partly due to the impact of the decline in FDI, capital inflows and joint ventures. The impact of these non-trade effects on Iran is significant and as a result, it will be difficult for Iran to go back to business as usual with the US and its allies when sanctions are lifted (Askari et al., 2002). Accordingly, in this study we attempt to explain the issues of sanctions and to shed light on the FDI determinants by examining some macroeconomic factors and the business environment in light of Iran's policymaking on its FDIs. However, this study would attempts to investigate the impact of macroeconomic factors and the imposed sanctions on Iran's capability of attracting FDI inflows.

## **2. FDI inflows in Iran**

Iran is considered as an energy superpower. According to Goldman Sachs (2011), "Iran has the potential to become one of the world's largest economies in the 21st century". Iran as OPEC's second largest oil producer, possess approximately 94 billion barrels (10 percent of world oil reserves); and has 812 trillion cubic feet reserves of natural gas in the world (17 percent of total). Iran also has enormous mineral resources, including iron, coal, copper, sulfur, and zinc as well as gold. Thus, these natural resources generate a number of processing industries. However, in case of doing business with Iran, the political and currency stability considered as the most problematic factors. In addition, due to sanctions, adversity to access international financing is also a major concern.

According to recent policy in Iran, the development of non-oil exports is a priority. Iran has a broad domestic industrial base, an educated and motivated workforce, energy resources and geographical location advantages, which provides access to an estimated population of 300 million people in Caspian markets, Persian Gulf states and countries further east. According to UNCTAD, Iran has ranked sixth in FDI attraction in 2010.

Table 1. Iran's economic factors (1980-2015).

Year	<u>GDP, current prices</u> (billions <u>IRR</u> )	<u>Implied PPP conversion rate</u> ( <u>USD/IRR</u> )	<u>GDP per capita, PPP</u> ( <u>USD</u> )	<u>Inflation index</u> (average <u>CPI</u> )	<u>Current account balance</u>	<u>Population</u> (million)
1980	6,622	40	4,267	0.5	-3.6	38
1985	16,556	53	6,469	0.9	-0.9	48
1990	35,315	101	6,410	2.5	-2.7	55
1995	185,928	399	7,265	9	3.4	64
2000	580,473	940	9,666	21	12.5	64
2005	1,831,739	2,025	13,036	40	15.4	69
2010	4,333,088	3,498	16,664	82	27.3	74
2015	13,077,142	9,788	16,918	253	6.9	79

Source: IMF - World Economic Outlook Database (2015).

The years of government control over the economy and the lack of private investment coupled with the market liberalization and recent reforms have led to interesting business and investment opportunities in many sectors. However, there is no challenge in finding areas of the Iranian economy that require investment.

Despite the uncertainty about the nuclear energy policy, the level of technology and infrastructure available to many industries in Iran makes it possible to develop partnerships with foreign companies. In fact, the presence of MNCs in Iran has increased dramatically over the past 20 years, due to open regulatory policy that makes multinational corporations face less difficulty for investing in Iran (Soltani & Wilkinson, 2011).

According to the "Vision 2025" plan of the Iranian government, within two decades (2025-2005), Iran needs \$ 3.7 trillion investment, of which \$ 1.3 trillion should be in form of foreign investment. Table (2) shown FDI inflows and outflows in the last six years.

Table 2. Iran FDI flows 2011–2016 (Millions of dollars).

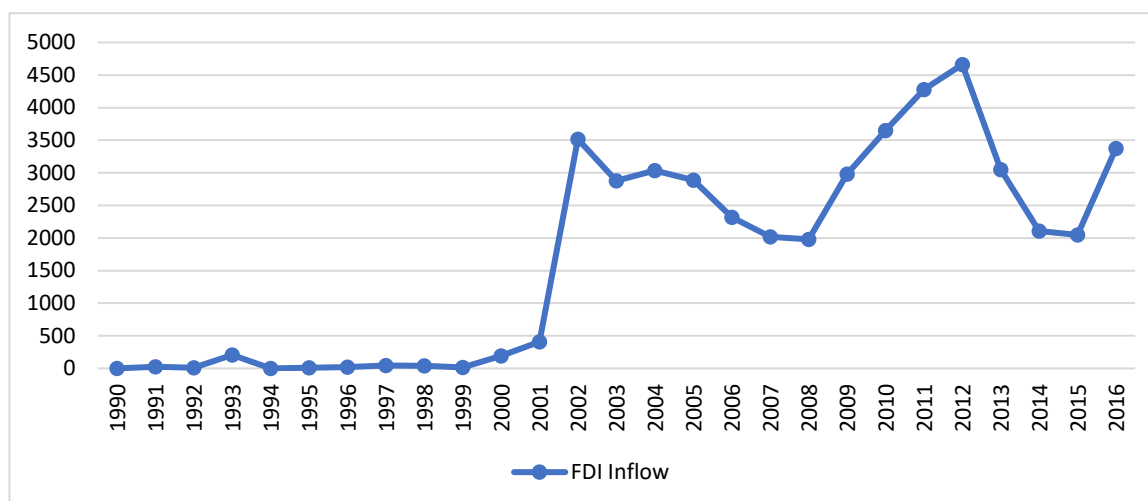
Year	<u>FDI Inflows</u>						<u>FDI Outflows</u>					
	2011	2012	2013	2014	2015	2016	2011	2012	2013	2014	2015	2016
Iran	4277	4662	3050	2105	2050	3372	227	1441	146	605	120	104

(UNCTAD, 2017).

The opening of the Iranian market for foreign investment can also create a new investment opportunity for the multinational corporations that invest in different sectors of production and services in the next decade of about \$ 600 billion to \$ 800 billion in Iran.

Foreign investors focus on several sectors of the Iran's economy including; oil and gas industries, vehicle manufacturing, copper extraction, petrochemicals, food and pharmaceuticals. Iran absorbed US\$34.6 billion financing for 485 projects from 1992 to 2009, and \$24.3 billion of foreign investment from 1993 to 2007.

However, Figure 1 demonstrate the trend of FDI inflows in Iran from 1990 to 2016 according to UNCTAD (2017) reports.



**Figure 1.** Iran FDI Inflow during the period 1990-2016.

Jafarnejad et al. (2009) studied the determinants of FDI inflows in Iran, using data for the period of 1991-2006. They have found a significant positive impact of openness of trade and GDP per capita have on FDI. Further, inflation, oil extraction and production had a negative correlation with FDI. Furthermore, their results also show that infrastructural factors, market size, research and development (R&D), education and scientific output encourage FDI inflows. They concluded that FDI in Iran is more market-seeking and resource-seeking than an efficiency seeking. Soltani and Wilkinson's study (2010) examines international assignees' perceptions and experiences in a sample of Iranian-based MNC affiliates in high growth sectors. Their study indicates that the international assignees' perceptions of managing an MNE affiliate in Iran was often formed prior to their departure and their performance is strongly linked to the level of congruence between MNC and subsidiary's managerial orientation. Their finding reveals that performance tends to deteriorate when subsidiaries are requested to conform to MNC policies and practices. Table (3) shows Iran FDI stock in four periods (during 1990 to 2016).

**Table 3.** Iran FDI stock (Millions of dollars).

Year	FDI Inflows Stock				FDI Outflows Stock			
	1990	2000	2010	2016	1990	2000	2010	2016
Iran	2039	2597	28953	48469	56	414	1713	3744

(UNCTAD 2017).

### 2.1. Gross Domestic Product

The GDP growth rate, is a measure for the country's economic performance. The national economy development can be determined by criteria such as the amount of production, consumption, quality and diversity of goods, and other economic indicators (Musibah et al, 2015).

The growth of GDP can be as a determinant of FDI inflows to countries (UNCTAD, 1998). However, Sahoo (2006) asserts that countries with higher and sustained growth rate will receive more FDI flows.

Kahai (2011) argues that foreign investors are considering the size of the current market as well as potential for future growth in the market. In addition, the importance of GDP growth has been confirmed in many studies (Stack, 2017; Arbatli, 2011; Nonnemberg & Mendonca, 2004; Nunnenkamp & Spats, 2002).

Mina (2014) studied 52 middle-income countries and found an effect of GDP on FDI. In addition, Pradhan and Kelkar (2014) and Badr & Ayed (2015) studies indicated a positive

relationship between GDP and FDI inflow. further, favorable investment conditions and the rapid economic development in a host country would attract FDI.

H1. GDP growth has a positive impact on FDI inflows.

## 2.2. Infrastructure

Good infrastructure is essential in recipient countries to realize FDI benefits. The existence of developed infrastructure significantly reduces the cost of doing business for foreign investors and, as a result, increases their investment returns (Morriset, 2001). Therefore, good infrastructure is one of the characteristics of economic development. The development economics literature also emphasizes the need for access to basic infrastructures for poverty alleviation (Yamin and Sinkovics, 2009).

Iran has strong and extensive economic infrastructure. For instant, Iran's transportation network includes 12,000 kilometers of railways and 220,000 kilometers of roads. The country has nine commercial facilities in the south, including the Shahid Rajaei port in the north of the Strait of Hormuz, which deals with more than 80 foreign ports through 35 container lines. In addition, three commercial ports of the Caspian Sea in the north. Iran now has 167 Internet servers or 2.12 per million people and 31% of the people use the Internet. Furthermore, Iran has 29 million Landlines number and 65 million mobile phones number.

H2. Infrastructure has a positive impact on FDI inflows.

## 2.3. Exchange Rate

The literature acknowledges that there is a relationship between the exchange rate and the inflow of foreign direct investment. For instant, Clare & Gang (2010), Kiyota & Urata (2008) and Mowatt & Zulu, (1999) have learned that the exchange rate could lead to fluctuations in foreign direct investment by affecting the cost of acquiring foreign currency. This is because the devaluation of the domestic currency against the value of the foreign currency will make the investment less expensive for a foreign investor in the host country. however, depreciation of domestic exchange rate will stimulate foreign direct investment inflows to that country (Musibah et al, 2015). In the other hand, If the value of a country's currency is decreasing, foreign investors are encouraged to buy assets at lower prices in that country (Blonigen & Ma, 2011).

H3. Exchange rate has an impact on FDI inflows.

## 2.4. Inflation Rate

The rate of inflation represents the overall financial performance of host countries. In addition, high inflation indicates the government's failure to manage the country's budget, representing that the central bank failed to make an effective monetary policy (Hailu, 2010; Schneider & Frey, 1985). Inflation is considered as an important element in the flow of foreign direct investment. In general, higher inflation rates will reduce FDI inflows (Bissoon, 2012; Kok & Ersoy, 2009). However, there is a positive relationship between inflation and FDI (Ali, Khrawish, & Siam, 2010; Azam & Lukman, 2010). In contrast, studies such as Shahzad and Al-Swidi, 2013; Anyanwu, 2012; and Parajuli & Kennedy, 2010, have found no significant relationship between inflation and FDI inflow.

H4. Inflation rate has an impact on FDI inflows.

## 2.5. Political Stability

In the case of political instability in a country, foreign investors reluctant to start any project unless they are confident that there is a favorable environment to encourage investment (World bank, 2011; UNCTAD, 2010; Brada et al., 2005).

Alcantara and Mitsuhashi (2013) reveal that political risk is one of the risks that affects the choice of the location, and indicating the unpredictability and instability of legal and political conditions in a host country.

Host countries where the political structure or even the preferences of policymakers are unstable create more uncertainty and risk for MNCs, because changes in laws, taxes, and government permission after entry have led to undesirable shifts of their FDI (Henisz and Macher, 2004; Globerman and Shapiro, 2003; Delios and Henisz, 2003).

Shahzad et al. (2012) and Younis et al. (2008) reveal that political instability has significant impact on FDI inflow. However, it is assumed that the political stability can assist in attracting FDI inflows.

Madani and Nobakht, (2014) and Kim, (2010) assert that property rights and civil rights as proxies of political stability have key role in the attraction of FDI into the country.

H5. Political stability has a positive impact on FDI inflows.

## 2.6. Trade Openness

Traditional neoclassical theory states that the liberalization of trade and investment accelerates technological progress, improves labor efficiency, increase trade, and ultimately boosts economic growth (Cleeve et al, 2015). The positive association between trade openness and FDI has led to many studies in developing countries, for example, Little et al, (1970) studied the association of trade orientation and economic performance in developing countries. The more a country opens up its domestic market to external trade, the more the country can attract FDI. Trade openness is captured by the ratio of the country's exports plus imports to the GDP (Sahni, 2012; Nuneset al., 2006). Furthermore, researchers have analyzed the role of FDI in the growth of several economies to investigate the relationship between investment and growth. It is assumed that FDI is a significant source for obtaining capital, up-to-date technology, managerial skills, and enhanced marketing know-how.

In the host country, there are two main channels that determine the trade and FDI relationship. First, countries with a high degree of openness tend to attract more FDI inflows. Second, the inflow of foreign direct investment can affect trade flows through technology transfer and export expansion in the manufacturing sector (Chowdhury & Mavrotas, 2006).

In the case of Iran, the total volume of imports increased by 189% from \$ 13.7 billion in 2000 to \$ 39.7 billion in 2005 and \$ 55.189 billion in 2009. Over the past five years, Iran's imports have fallen by 8.9% year-on-year, from \$ 70.4b in 2010 to \$ 43.9b in 2015, and are currently the world's 51 largest importers. The main trading partners of Iran are China, India, Germany, Japan, France, South Korea, Italy and Russia. Also, about 80% of machines and equipment in Iran are of German origin (Gheissari, 2009). Trade openness is considered as a key determinant of FDI and it is generally expected to have a positive influence on FDI inflows (Sahni, 2012; Sahoo, 2006; Asiedu, 2002).

H6. Trade openness has a positive impact on FDI inflows.

## 2.7. Investment Return

Foreign direct investment goes to countries with higher returns. But finding a suitable measure for the return on investment for developing countries is difficult due to the lack of a well-functioning capital market (Asiedu, 2002). Considering that profitability is one of the key determinants of investment. Therefore, the rate of return on investment in a host economy affects the investment decision. Further, the marginal product of capital is equal to the return on capital. However, capital-scarce countries have higher returns (Alavinasab, 2013, Asiedu, 2002).

Edwards (1990), Jaspersen et al. (2000) and Asiedu, (2002) employed the inverse of per capita income as a measure for return on investment, and their results showed that GDP per capita was inversely related to FDI. In contrast, Schneider and Frey (1985) reveals a positive relationship between GDP and FDI. It can be argued that GDP is providing better prospects for foreign direct investment in the host country.

H7. Investment return has a positive impact on FDI inflows.



## 2.8. Governance

In recent years, discussions have been held on international development and political discourse within the framework of good governance, and for this reason the attraction of foreign investment is an important factor for the good functioning of the country's market. In fact, governments seeking to attract foreign direct investment should create favorable conditions for multinational corporations. On the other hand, the FDI decision-making process for investors and foreign organizations is very valuable in understanding the status of governance indicators in terms of transparency of administrative processes, reducing corruption and the peaceful environment (World Bank, 2006).

Morisset (2000) draw the conclusion that increase administrative costs due to corruption and bad governance, will reduce FDI inflows. Moreover, other studies argue that political and institutional factors are necessary to encourage FDI to developing countries (e.g. Stein and Daude, 2001; Stevens, 2000). In addition, Globerman and Shapiro in 2002, assert that the governance infrastructure, including the nature of the legal system is an important determinant of FDI inflow in US.

Samimi and Ariani (2010) employed three governance indicators including political stability, corruption control and the rule of law for investigating the impact of a better quality of governance on FDI inflows in MENA region. They found that these indicators have a positive impact on FDI inflows and improve the governance.

In other study, Mengistu and Adhikary (2011) employed six indicators of good governance included political stability, government effectiveness and rule of law, the absence of violence and control of corruption. Their result reveal that these six indicators have impact on FDI inflows in 15 Asian countries and therefore, can increase the attraction of FDI.

H8. Governance has an impact on FDI inflows.

**Table 4.** Most recent macro studies on FDI.

<b>Authors</b>	<b>Sample</b>	<b>Variables</b>	<b>Finding</b>
Marie M Stack et al. (2017)	European countries	GDP, skills, trade cost, distance, FDI intensity cost	The findings indicate the presence of both vertical and horizontal motives of FDI with a shift over time towards the latter. In identifying the efficiency of FDI integration relative to maximum potential levels, the stochastic frontier specification of the KK model indicates a mixed degree of FDI performance.
Mohamed M. Elheddad (2017)	MENA countries	Political instability, Corruption, labor force, trade openness, GDP, resource FDI	The natural resource impact positively on resource FDI. The impact of corruption is on oil FDI. The result confirms the hypothesis of foreign firm prefer to invest their money in corrupted areas which allow them more access to the natural resource and low taxes.
Jose´ Villaverde & Adolfo Maza (2015)	European regions	R&D expenditure, Human capital, Openness degree, GDP, unemployment rate,	The economic potential, labour market characteristics, technological progress and competitiveness exert a significant impact on FDI location patterns; in contrast, market size



		Population, productivity	Labor	and labour regulation do not seem to play any noteworthy role.
Emmanuel A. Cleeve et al. (2015)	Sub-Saharan Africa	human capital, inflows	FDI	Human capital to have influenced, holding on the other non-traditional and traditional determinants of FDI. Irrespective of the indicator of educational attainment used and composition of control variables considered, the FDI effect of human capital was found to be robustly positive and significant.
Anwar Salem Musibah et al. (2015)	Yemen	political stability, gross national income, growth, exchange rate, inflation rate, balance of payment	gross GDP	The moderating variable, political stability is used together with other variables such as exchange rate, inflation rate, balance of payment and gross national income. The results show that political stability is critical for the future growth of Yemen economy.
Olga Kuzmina et al. (2014)	Russia	FDI per capita, Governance indicators: Inspection Police, Pressures, Income per capita.	quality Bribes, Agencies, Criminal Strikes,	Higher frequency of using illegal payments and higher pressure from regulatory agencies, enforcement authorities, and criminals, negatively affect foreign direct investment. Moving from the average to the top governance quality across Russian regions more than doubles the FDI stock.
Khaled Guesmi & Frédéric Teulon (2014)	SAARC*	FDI, openness, growth rate, exchange rate, inflation rate		The macroeconomic variables have long-term effect on the FDI inflows. However, economic instability and fluctuations in exchange rates have a negative effect on inward FDI flows and can therefore deter foreign investment.
Chor Foon Tang et al. (2014)	Malaysia	FDI, GDP, exchange rate, financial development, corporate income tax, macroeconomic and social uncertainty		Indicate that GDP, real exchange rate, financial development and macroeconomic uncertainty are positively related to inward FDI in the long-run. Corporate income tax and social uncertainty have a negative impact on inward FDI.
Dilek Temiz & Aytac	Turkey	FDI GDP		Mention that no significant relation is determined between the FDI inflow and GDP

Gokmen (2014)				growth in Turkey both in the short and long run.
Abhilas Kumar Pradhan & Suneel Kelkar (2014)	India	GDP, CPI, Trade Openness, Exchange Rate, Foreign Exchange Reserves, Gross Capital Formation		Foreign Exchange Reserves (FOREX), Inflation (CPI) and Gross Capital Formation (GCF) are determinants of FDI inflows in India over the years.
Priscila Gomes de Castro et al. (2013)	Brazil and Mexico	FDI, GDP, Openness, Exchange rate, international commodities prices		The importance of GDP and trade openness as attractive for FDI. Trade liberalization was a major attraction factor to FDI in both countries, and the size of the domestic market stood out as a determinant in Brazil. The foreign investment attraction depends on investments in policies that promote trade and economic growth.
Arfan Shahzad & Abdullah Kaid Al-Swidi (2013)	Pakistan	FDI, GDP growth, Exports, Imports, Inflation Rate, Balance of Payment, Political Stability		The GDP growth rate, exports, imports and balance of payment have positive effects on FDI inflows. The GDP growth rate and balance of payment tends to be a determinant of FDI inflows when the moderating effect of the political stability is accounted for.
Sajid Anwar & Lan Phi Nguyen (2011)	Vietnam	FDI ,exports, imports and net export		Both exports and imports are complementary to FDI. Geographical distance has a negative effect on trade volume and the impact of increase in per capita income on trade flows is large and significant.
Elizabeth Asiedu (2011)	112 developing countries	Democracy, FDI Natural resources		Democracy facilitates FDI in countries where the share of natural resources in total exports is low, but has a negative effect on FDI in countries where exports are dominated by natural resources.

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\*Six major countries in the South Asian Association for Regional Cooperation (SAARC).

### 3. Sanctions

Sanctions are an economic weapon for countries to fulfill their foreign policy goals. Over the last century, various countries imposed many international economic sanctions against other nations (Hufbauer et al., 2007). Thus, Eaton and Engers (1992), Elliot and Hufbauer (1999), Davis and Engerman (2003), and van Bergeijk (2009) suggested various theoretical frameworks to explain how sanctions work.

After the Iranian revolution, and after the hostage taking of US agents in 1979, the United States stopped its economic and diplomatic ties with Iran, banned the import of Iranian oil and froze approximately \$ 11 billion of its assets (Krauss, 2015 ). In 1996, the US government approved the Iranian-Libyan Sanctions Act (ILSA), which prohibited US (and non-US) companies from investing and trading more than \$ 20 million annually with Iran. Since 2000, items such as pharmaceuticals and medical equipment have been excluded from these sanctions (DeRosa and Hufbauer, 2012).

Iran's nuclear program has been debated since 2006, over suspicions of its intentions. The UN Security Council has imposed sanctions on selected companies associated with the nuclear program, which would cause the country's economic isolation (Gheissari, 2009). In particular, targeted sanctions on nuclear, missile and many military exports to Iran, and investment in oil, gas and petrochemicals, export of refined petroleum products, financial transactions, banks, shipping and insurance. In 2012, the European Union made its sanctions harder by joining the US oil embargo against Iran (Solomon, 2014). In addition, the last round of sanctions can bring about \$ 50 billion in lost oil revenue annually to Iran.

The UN Security Council has gradually established an international sanctions regime against Iran in 2005, which is committed by all member states.

In 2006, in the first resolution, the Security Council unanimously confirmed that measures include the embargo on materials and technology used in the production and enrichment of uranium, as well as in the development of ballistic missiles, and the blocking of financial transactions related to nuclear and ballistic missile programs. Subsequent resolutions in 2007 and 2008 blocked non-humanitarian financial assistance to Iran. The fourth resolution approved in June 2010, adopted the U.S. approach, linking Iran's oil profits and its financial sector, including its central bank, to proliferation efforts, therefore subjecting them to international sanction.

Over the years, sanctions have serious consequences for the Iranian economy and people. The United States has made many international efforts to convince Western governments of the threat of Iran's uranium enrichment program and the development of nuclear weapons capability. However, Iran has denied this and believes its nuclear program is for civilian purposes, including power generation and medical purposes (Guzman, 2013).

Iran increasingly uses barter trade since it has been denied access to the international dollar payment system.

Monetary factors also cause problems, as sanctions cause a sharp fluctuation in the value of the Iranian Rial. In addition, a weak currency will make imports more expensive, and affect everything that is based on the Rial, including wages, stocks, homes, pensions, and gold. Thus, businesses also can hardly determine the price of goods and the value of their services.

It is therefore important that there is different between (i) the sanctions imposed on imports of nuclear-related products in 2006 and 2007, (ii) the sanctions imposed on non-oil exports in 2008, and (iii) the financial sanctions (Such as SWIFT, Banking) against Iran in 2012 (Haidar, 2015).

However, sanctions have been categorized based on their effect on Iranian economy: 1) Political sanctions: block the assets of individuals who are determined to support international terrorism. The list includes dozens of Iranian individuals and institutions, including banks, defense contractors. The Iran-Iraq Non-Proliferation Treaty (1992) prohibits anyone or entity that contributes to Iran's nuclear, chemical or biological weapons. 2) Trade sanctions: The United States bans sanctions that most US companies are banned from trading or investing in Iran until 1995. Although it slowed down in 2000, it almost finished decades later. The Obama administration has taken exception to the sanctions on the sale of consumer telecommunications equipment and software. 3) Energy sanctions: Energy Sanctions: The US's main focus is on reducing Iran's oil revenues. In this way, the pressure on the non-proliferation of nuclear weapons will increase. Prior to 2012, oil exports accounted for half the revenue of the Iranian government and made up one-fifth of the GDP. Extraterritorial sanctions target foreign companies that provide services or participate in investing in energy activities, including oil and gas and petrochemicals, supplying equipment used in oil refining as well as oil export activities, Such as shipbuilding, port operations, and shipping insurance.

4) Financial and Banking sanctions: US sanctions by the Treasury Department have sought to isolate Iran from the international financial system. Under the 2011 Comprehensive Iran Sanctions,

Accountability, and Divestment Act (CISADA), foreign financial institutions, or subsidiaries that deal with banned banks prevented from conducting transactions in the United States and with US Dollars. In late 2011, the United States also prevented importers of oil imports to make payment through the Central Bank of Iran. Other aspects of the financial sanctions include limiting Iranians' access to foreign currencies, so that the funds from oil exports can only be used for bilateral trade with the buyer country or for access to humanitarian goods.

Askari et al (2002) believe that financial sanctions policies that are less discussed have had more important and long-term effects. Financial sanctions and policies that can be adequately measured include restriction on export financing, limiting the IMF and World Bank financing, reducing commercial financing, restricting Iran's debt-rescheduling efforts, and reducing FDI inflows (especially in the energy sector). However, effects that are not measurable include air travel restrictions, tourism, and risk assessment of Iran, which in turn affects foreign direct investment in non-energy sectors and other joint ventures.

The data released by the Central Bank of Iran in 2012 indicates a decline in the share of Iranian exports of petroleum products. Sanctions have reduced Iran's access to products needed for oil and energy, and forced many oil companies to stop their activities or exit from Iran. It also reduced oil production due to reduced access to the technologies needed to improve their facilities and performance. Many international companies are also reluctant to do business with Iran because of the fear of losing access to larger Western markets. However, we can state that in better political circumstances, such as non-US sanctions, it is likely to have much higher FDI.

H9. Sanctions moderates the relationship between macroeconomic factors and the FDI inflow in Iran.

**Table 5.** International sanctions against Iran (1984-2016).

<b>Date</b>	<b>Source</b>	<b>Name/No.</b>	<b>Elements of sanctions</b>	<b>Type of sanctions</b>
Jan. 1984	US	State Sponsor of Terror designation	• Banned arms sales and foreign assistance to Iran.	Political
Oct. 1987	US	Executive Order 12613	• Banned import of all goods from Iran, including oil.	Trade
Oct. 1992	US	Iran-Iraq Arms Proliferation Act	Non- • Sanctioned transfer of goods or technology related to WMD and some conventional arms.	Political
Nov. 1994	US	Executive Order 12938	• Imposed export controls on sensitive WMD technology.	Political
May 1995	US	Executive Orders 12957, 12959	• Prohibited all U.S. investment in Iran, including in oil sector. • Banned export of American goods to Iran.	Trade
Aug. 1996	US	Iran and Libya Sanctions Act	• Sanctioned companies that invest more than \$20 million in Iranian oil sector.	Trade
Aug. 1997	US	Executive Order 13059	• Expanded ban on exports to Iran.	Trade
Mar. 2000	US	Iran Non- proliferation Act	• Sanctioned entities providing goods related to WMD or ballistic missiles.	Political
Sep. 2001	US	Executive Order 13224	• Blocked property of terrorists and financial supporters.	Financial

Jun. 2005	US	Executive Order 13382	<ul style="list-style-type: none"> <li>• Blocked property of WMD proliferators.</li> </ul>	Political
Jul. 2006	UN	1696	<ul style="list-style-type: none"> <li>• Called upon states to exercise vigilance and prevent the transfer of material for nuclear and ballistic missile purposes.</li> </ul>	Political
Sep. 2006	US	Iran Freedom Support Act	<ul style="list-style-type: none"> <li>• Sanctioned involvement in Iranian development of WMD/advanced conventional weapons.</li> <li>• Codified U.S. trade ban.</li> </ul>	Political
Dec. 2006	UN	1737	<ul style="list-style-type: none"> <li>• Banned export to Iran of all items, materials, equipment, goods and technology related to nuclear activities or development of nuclear weapon delivery systems.</li> <li>• Banned provision to Iran of technical or financial assistance related to nuclear activities.</li> <li>• Banned Iranian export of nuclear-related equipment and material.</li> <li>• Froze assets of individuals and companies involved in nuclear and ballistic missile programs.</li> </ul>	Trade
Feb. 2007	EU	Council Common Position 2007/140/CFSP	<ul style="list-style-type: none"> <li>• Banned export of sensitive nuclear and ballistic missile technology.</li> <li>• Prohibited financial and technical assistance related to nuclear or missile activities.</li> <li>• Froze assets and denied travel of designated individuals and companies.</li> </ul>	Political
Mar. 2007	UN	1747	<ul style="list-style-type: none"> <li>• Banned export by Iran of any arms or related materiel.</li> <li>• Expanded list of sanctioned individuals and companies.</li> </ul>	Political
Jul. 2007	US	Executive Order 13438	<ul style="list-style-type: none"> <li>• Blocked property of those involved in destabilizing Iraq.</li> </ul>	Political
Mar. 2008	UN	1803	<ul style="list-style-type: none"> <li>• Expanded prohibitions on trade in sensitive nuclear equipment and materials.</li> <li>• Banned travel by sanctioned individuals.</li> <li>• Expanded list of sanctioned individuals and companies.</li> </ul>	Political
Jun. 2010	UN	1929	<ul style="list-style-type: none"> <li>• Prohibited Iranian investment in foreign nuclear activities.</li> <li>• Banned export to Iran of major weapons systems and banned provision to Iran of technical or financial assistance related to acquiring these systems.</li> <li>• Called on states to inspect all cargo to and from Iran if suspected of transferring illicit materials.</li> </ul>	Trade

			<ul style="list-style-type: none"> <li>• Called on states to prevent the provision of financial services that would facilitate Iranian sanctions evasion.</li> <li>• Expanded list of sanctioned individuals and companies.</li> </ul>	
Jul. 2010	US	Comprehensive Sanctions, Accountability & Divestment Act	Iran • Sanctioned sale to Iran of gasoline or supporting domestic gasoline industry.	Energy
			<ul style="list-style-type: none"> <li>• Sanctioned foreign financial institutions connected with WMD or terrorism.</li> </ul>	
Jul. 2010	EU	Council Decision 2010/413/CFSP	<ul style="list-style-type: none"> <li>• Banned export to Iran of all arms and materiel.</li> <li>• Prohibited financial and technical assistance related to nuclear activities or weapons acquisition.</li> <li>• Banned export to Iran of key equipment and technology related to oil and natural gas industry.</li> <li>• Prohibited provision of insurance or re-insurance to Iranian entities.</li> <li>• Expanded list of designated individuals and companies.</li> </ul>	Energy
Sep. 2010	US	Executive Order 13553	<ul style="list-style-type: none"> <li>• Blocked property of those involved in human rights abuses in Iran.</li> </ul>	Political
Apr. 2011	US	Executive Order 13572	<ul style="list-style-type: none"> <li>• Blocked property of those involved in human rights abuses in Syria, including Iranians.</li> </ul>	Political
Apr. 2011	EU	Council Decision 2011/235/CFSP	<ul style="list-style-type: none"> <li>• Froze assets and denied travel of individuals involved in human rights abuses.</li> </ul>	Political
Nov. 2011	US	Executive Order 13590	<ul style="list-style-type: none"> <li>• Sanctioned contributing to maintenance or expansion of Iranian petroleum resources.</li> </ul>	Energy
Nov. 2011	US	USA PATRIOT Act	<ul style="list-style-type: none"> <li>• Designated Iranian financial sector as jurisdiction of primary money laundering concern.</li> </ul>	Financial
Dec. 2011	US	Section 1245, NDAA FY 2012	<ul style="list-style-type: none"> <li>• Restricted export of Iranian oil.</li> <li>• Codified Section 311 Money Laundering designation.</li> </ul>	Energy
Jan. 2012	EU	Council Decision 2012/35/CFSP	<ul style="list-style-type: none"> <li>• Banned import, purchase or transport of Iranian crude oil and petrochemical products.</li> <li>• Prohibited provision of financing, insurance or reinsurance related to Iranian crude oil sale or transport.</li> <li>• Prohibited export to Iran of equipment for petrochemical industry and provision of technical or financial assistance.</li> <li>• Prohibited sale of gold, precious metals and diamonds to Iran.</li> </ul>	Energy

Feb. 2012	US	Executive Order 13599	<ul style="list-style-type: none"> <li>Blocked all Iranian government property under U.S. jurisdiction.</li> </ul>	Financial
Mar. 2012	EU	Council Decision 2012/152/CFSP	<ul style="list-style-type: none"> <li>Banned provision of financial messaging services to designated Iranian banks (i.e., denied access to SWIFT).</li> </ul>	Financial
Apr. 2012	US	Executive Order 13606	<ul style="list-style-type: none"> <li>Blocked property of those involved with human rights abuses perpetrated through information technology.</li> </ul>	Political
Jul. 2012	US	Executive Order 13622	<ul style="list-style-type: none"> <li>Sanctioned foreign financial institutions that facilitate petroleum sales.</li> </ul>	Financial
Aug. 2012	US	Iran Threat Reduction and Syria Human Rights Act of 2012	<ul style="list-style-type: none"> <li>Sanctioned support of petroleum sector.</li> <li>Mandated that Iran's oil revenue be locked up in special escrow accounts.</li> </ul>	Energy
Oct. 2012	US	Executive Order 13628	<ul style="list-style-type: none"> <li>Expanded Iran Threat Reduction and Syria Human Rights Act</li> </ul>	Political
Oct. 2012	EU	Council Decision 2012/635/CFSP	<ul style="list-style-type: none"> <li>Banned purchase, import or transport of natural gas from Iran.</li> <li>Banned export of shipbuilding technology.</li> </ul>	Energy
Jan. 2013	US	Iran Freedom and Counter-Proliferation Act of 2012	<ul style="list-style-type: none"> <li>Sanctioned involvement in Iranian energy, shipping or shipbuilding, or provision of insurance or reinsurance to shipping firms.</li> <li>Sanctioned provision of precious metals to Iran.</li> </ul>	Trade
Jun. 2013	US	Executive Order 13645	<ul style="list-style-type: none"> <li>Sanctioned involvement in Iranian automotive industry.</li> <li>Blocked assets of banks doing business in Rials, the currency of Iran.</li> </ul>	Financial

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Source: Belfer Center for Science and International Affairs, Samore (2015).

The United Nations Security Council Resolution (No. 2231) was adopted on July 20, 2015. Therefore, a plan to suspend and eventually abolish United Nations sanctions with provisions to re-impose UN sanctions in case of non-performance by Iran. Under the Joint Comprehensive Plan of Action (JCPA), to suspend and eventually lifting UN sanctions, almost immediately the EU and the United States announced that sanctions already imposed on Iran were lifted. In practice, all sanctions imposed by the EU were removed. Some US sanctions, but not all of them, have been lifted. Between \$ 100 billion and \$ 150 billion of Iranian financial assets were released. In addition, trade sanctions that limited Iran's oil exports, as well as restrictions on imports of many goods, were also lifted.

Hence, it is expected that the lifting of the EU sanctions would have the greatest impact on macroeconomic policy in Iran and elsewhere, because oil accounts for 64 percent of Iran's export earnings, and Iran has a relatively high share (8 percent) of total world exports. In addition, the removal or reduction of inspections on imports and exports of Iran that were imposed as part of the regime of sanctions. Therefore, transport costs are expected to decrease in trade with Iran. Furthermore, due to the fact that the US and other partners have abolished restrictions on financial transactions services, Iran's import of financial services are expected to increase (Ianchovichina et al., 2016).

Nevertheless, on May 8, 2018, President Trump announced that the United States would withdraw from the JCPA agreement.



#### 4. Data and Methodology

The study tries to identify the determinant factors of foreign direct investment in the Iranian economy based on the secondary data sources for the period of 1991-2014. We seek to explain inward investment in the country based on a number of macroeconomic variables such as infrastructure, trade openness, governance, growth rate, political stability, inflation and exchange rates. These variables have already used in literature as factors that may influence FDI inflows. Since international sanctions made some restrictions on Iran's economy and those may affect FDI as well as macroeconomic factors, therefore, we study the moderating effect of sanctions on FDI during above period.

The data are on an annual basis and taken from various sources including UNCTAD statistics, the World Bank Indicator reports, Political Risk Services (PRS), Worldwide Governance Indicators (WGI), the International Telecommunication Union (ITU) database as well as Iran's Central Bank reports.

FDI INFLOW is actually used FDI. GDP GROWTH is the real gross domestic product (GDP) growth rate. The growth rate can be a representation of the wealth of a country. The good INFRASTRUCTURE will increase investment productivity and encourage FDI inflows (Asiedu, 2002). However, infrastructure measured by the number of mainline telephones per 100 of population, is used to proxy for the level of infrastructural development. GOVERNANCE measures the level of governance and institutional quality in a country. The data regarding the variable is taken from the World Bank Website and the Worldwide Governance Indicators. However, we study the impact of the six governance indicators on FDI inflow measured by the KKM Index, a broad governance measure developed by Kaufmann, Kraay and Mastruzzi (2009) which consists of the average of six indicators including voice and accountability, political stability and absence of violence, regulatory quality, government effectiveness, rule of law, and control of corruption.

Trade OPENNESS represents the degree of openness of a country to international trade and foreign investors. It is measured by the ratio of total imports and exports over gross domestic product. Further, it is recognized as a key factor in attracting FDI to the country (e.g. Cleeve et al, 2015; Sahni, 2012; Sahoo, 2006). INFLATION Correspond to the Consumer Price Index (CPI) change in years. It is a proxy for macroeconomic stability. Therefore, it shows the government's overall ability to manage the economy.

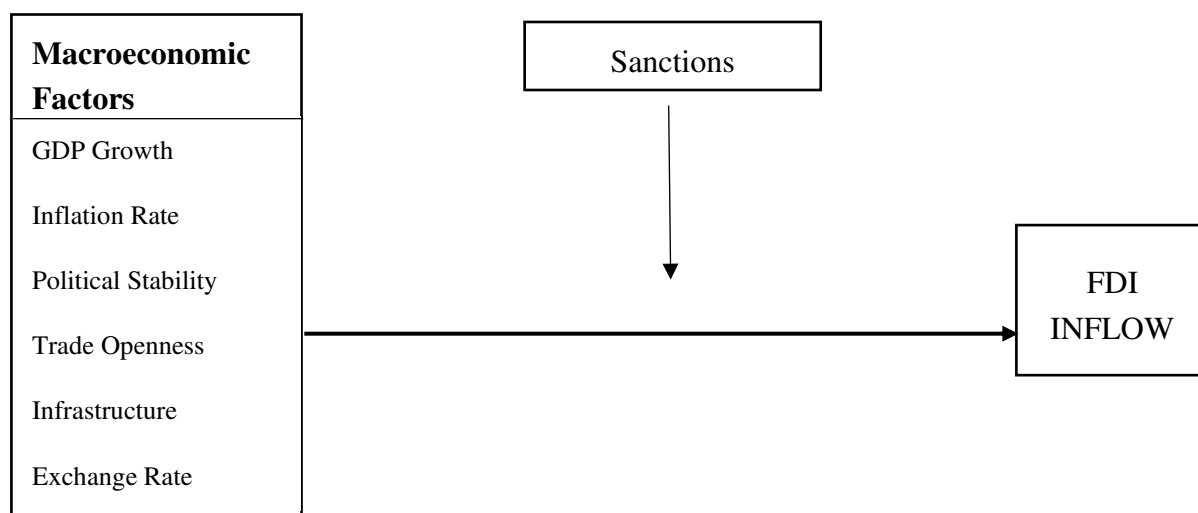
The high inflation rate creates uncertainty about the assets and liabilities of investors. Therefore, companies have less incentive to invest in high inflation countries (Abdellah et al., 2012). Thus, inflation has a negative impact on foreign direct investment. POLITICAL Stability is measured by ICRG, which is the measure of democracy published in the International Country Risk Guide (ICRG). Political Risk Services (PRS) publish the data, it reflect the extent to which elections are free and fair, and the degree to which the government is accountable to its electorate. However, the index ranges from one to six which a higher score implies more democracy and accountability (Asiedu and Lien, 2011). EXCHANGE Rate is time-variant real exchange rate. It represents competitiveness in international trade and the extent of market liberalization in the foreign exchange market (Yao and Zhang, 2001). The depreciation of a host country's currency makes host country's assets become interesting investment targets for foreign investors. In order to measure the INVESTMENT Return, we follow Jaspersen et al. (2000) and Asiedu (2002) to use inverse of per capita income as a proxy for return on investment. Thus, investing in countries with higher per capita income should have lower return, and therefore, real GDP per capita is inversely related to FDI inflow.

SANCTIONS have been categorized based on their effect on Iranian economy: 1) *Political sanctions*: frozen assets of entities determined to be supporting international terrorism, including individuals and institutions, defense contractors; and any person or entity that assists Iran in weapons development. 2) *Trade sanctions*: an embargo that prohibits most firms from trading with or investing in Iran. 3) *Energy sanctions*: sanctioning services and investment related to the energy sector, including investment in oil and gas fields, sales of equipment, and participation in activities related to oil and gas export. 4) *Financial sanctions*: isolating Iran from the international financial systems such as central bank, credits and swift system.

However, to measure SANCTIONS variable, we first explored all sanctions against Iran. However, as shown in Table (5), during 1990 to 2014, about 25 sanctions by the United States (US), 6 sanctions by the European Union (EU) and 9 sanctions the United Nations Security Council (UN) have imposed against Iran.

Then, through interview, we have asked twenty economists to categorize sanctions; and determine the significance of each sanction based on its intensity and impact on Iran's economy. As a result, financial boycotts (found to be the most effective and toughest sanctions on Iran, then energy sanctions, and after that trade; and finally, political sanctions have less impact on Iranian economy. Therefore, we calculated the value of each year's sanctions effects by weighting them based on the type and the number of sanctions imposed for each year. For example, for 2006, there are three political sanctions and one trade sanction, therefore, the value of sanction variable for this year is 0.4 ( $2 * 0.1 + 1 * 0.2$ ). Moreover, since previous sanctions are still in place, the value of previous year added to the value of sanction in year 2006.

The research framework in Figure (2) shows the impact of selected macroeconomic factors on FDI inflows. However, we expect that the sanction have moderation role in the expected relationship of macroeconomic variables with the FDI inflows in Iran.



**Figure 2.** Research framework.

Having established co-integration among the variables, we investigate their impact on the FDI inflows. For this purpose, we propose Ordinary Least Squares (OLS) method to estimate long-term relationships.

## 5. Results

Spurious regression can be avoided if characteristics of time series data are analyzed at the start to know the nature of variables. These variables can either be stationary or non-stationary. However, we used Unit Root Test and Augmented Dickey Fuller (ADF) method in this study. As shown in Table 6, the dependent variable of FDI inflows and the variety of macroeconomic variables are stationary.

**Table 6.** ADF unit root test results using the trend and intercept.

Variables	Level		1st Diff		2st Diff		3st Diff		Lag
	t	Prob	t	Prob	t	Prob	t	Prob	
FDI	-2.533	0.3107	-4.237	0.0152					0
GROW	-3.894	0.0073							0
CPI	2.638	0.9995	1.976	1.000	1.529	0.9999	-4.391	0.0150	6
ICRG	-3.273	0.0993	-2.681	0.0938	-6.067	0.0005			3
OPEN	-2.655	0.2619	-2.892	0.0624	-5.812	0.0001			1
INFR	2.088	0.9997	-3.798	0.0374					2
EXCH	-1.863	0.6389	-2.191	0.2148	-5.566	0.0002			1
INVS	-1.865	0.3416	-5.463	0.0002					0
GOVE	-3.430	0.0729	-4.566	0.0018					1
SANC	0.942	0.9996	-3.274	0.0289					0

FDI: FDI Inflow; GROW: GDP Growth; CPI: Consumer Price Index as a proxy for inflation; ICRG: International Country Risk Guide as a proxy for political stability; OPEN: Trade Openness; INFR: Infrastructure; EXCH: Exchange rate; INVS: Investment return; GOVE: Governance; SANC: Sanctions.

**Table 7.** Correlations.

Variables	1	2	3	4	5	6	7	8	9	10
1 FDI	1									
2 GROW	-.241	1								
3 CPI	.762**	-.441*	1							
4 ICRG	-.462*	-.413*	-.353	1						
5 OPEN	.822**	-.211	.822**	-.530**	1					
6 INFR	.824**	-.410*	.983**	-.421*	.835**	1				
7 EXCH	.685**	-.512*	.946**	-.233	.632**	.929**	1			
8 INVS	.177	.328	-.123	-.641**	.151	-.035	-.212	1		
9 GOVE	-.835**	.280	-.818**	.360	-.878**	-.803**	-.705**	.091	1	
10 SANC	.800**	-.473*	.952**	-.215	.841**	.930**	.894**	-.256	-.892**	1

\*\* Correlation is significant at the 0.01 level.\* Correlation is significant at the 0.05 level .

**Table 8.** Simple linear regression.

Variable	GDP Growth	Inflation Rate	Political Stability	Trade Openness	Infra-structure	Exchange Rate	Investment Return	Governance	FDI Inflow
	0.459**	.964***	-.299	.798***	.971***	.814***	-.215	-.827***	.789***
Sanctions	(-2.422)	(16.943)	(-1.470)	(6.215)	(19.223)	(6.563)	(-1.033)	(-6.903)	(6.018)
<b>R Square</b>	.211	.929	.089	.637	.944	.662	.046	.684	.622
<b>Adjusted R<sup>2</sup></b>	.175	.926	.048	.621	.941	.647	.003	.670	.605

The number in parenthesis is t-value.

**Table 9.** OLS Regression.

Variable	Predictors	T value	Moderated	T value	Interactions	T value
Constant		-3.140		-2.141		-.050
GDP growth	.056	.503	.060	.531	-.023	-.149
Political stability	.113	.693	.077	.455	-.893*	-1.849
Infrastructure	1.968***	4.522	1.902***	4.253	1.130	1.285
Governance	-.440**	-2.118	-.406*	-1.896	.167	.437
Exchange rate	.393**	2.275	.260	1.090	.297	.375
Investment return	.238*	2.063	.300*	2.162	.318	1.453
Inflation rate	-1.818***	-4.226	-1.988***	-4.129	-1.722	-.673
Trade openness	.070	.355	-.086	-.314	-.333	-.440
Sanctions			.521	.823	1.018	1.206
GDP*SANC					-.489	-1.301
ICRG*SANC					-1.044	-1.496
INFR*SANC					1.419	.206
GOVE*SANC					-.661	-1.769
EXCH*SANC					-2.402*	-1.994
INVS*SANC					.117	.627
CPI*SANC					2.158	1.020
OPEN*SANC					-.989	-1.619
R Square	.934		.937		.977	
Adjusted R Square	.899		.896		.924	
R Square change	.934		.003		.040	
F statistic	26.505***		23.127***		18.458***	

\*\*\* Significant at the 0.01 level; \*\* Significant at the 0.05 level; \* Significant at the 0.1 level.

The Durbin-Watson Statistic used to test for the presence of serial correlation among the residuals. The value of Durbin-Watson is 1.879, approximately equal to two, indicating no serial correlation.

Table (8) demonstrate the effect of sanctions on macroeconomic factors. The result of simple linear regression reveal that sanctions has a positive significant impact on inflation rate ( $t=16.943$ ), trade openness ( $t=6.215$ ), infrastructure ( $t=19.223$ ), and exchange rate ( $t=6.563$ ). Nevertheless,

international sanction against Iran has a negative significant impact on GDP growth ( $t=-2.422$ ) and governance ( $t=-6.903$ ). Furthermore, sanctions has a positive impact on FDI inflows in Iran.

The regression results in Table (9) show that the macroeconomic variables explained approximately 90 percent variations in foreign direct investment in Iran. The value of the F-statistic shows that the equation has a good fit, that is, the explanatory variables are good explainer of changes in FDI inflow in Iran.

As expected, infrastructure is very significant with positive sign and statistically significant. Hisarciklilar et al (2006) also found this variable in their study in case of MENA region countries, with positive significant impact on FDI inflows. However, previous studies (e.g. Jafarnejad et al, 2011; Ramirez, 2009; Asiedu, 2005) indicate positive significant relationship between infrastructure and FDI.

The governance of the host country found to be significant in attracting FDI into Iran, and the variable has the negative sign. That means a 1 percent depreciation in the level of governance causes FDI to increase by approximately 0.44. Thus, our result is inconsistent with other studies (e.g. Mengistu and Adhikary 2011; Samimi and Ariani, 2010; Globberman and Shapiro, 2002).

Moreover, the results illustrate that the exchange rate is significant in explaining changes in FDI. The finding is in line with other studies (e.g. Nurudeen, Auta, & Wafure, 2011; Adam & Tweneboah, 2009; Kaya & Yilmaz, 2003). Accordingly, they found a positive impact of exchange rate on FDI inflows. However, other such as Masayuki and Ivohasina (2005) found that exchange rate depreciation may encourage the inflow of foreign direct investment to the host country.

Furthermore, the results reveal that trade openness of the economy and political stability are statistically insignificant but positively related to foreign direct investment. A similar finding highlighted by Brewer (1983) indicated a very weak correlation between government instability and FDI. Other studies (Asiedu, 2002; Olibe & Crumbley, 1997) also fail to show a statistical association between FDI and political instability. However, the result is in the context of developed countries (Jimenez et al., 2011; Bitzenis et al., 2009). Similarly, the results show that GDP growth has an insignificant effect on foreign direct investment in Iran. This is consistent with Abdel-Rahman (2002) results that indicate GDP growth rate has positive but mainly insignificant impact on FDI in Saudi Arabia. Lastly, error correction parameter is significant and correctly signed, implying that the variables are con-integrated, and that a long run relationship exists among the variables.

In addition, the estimation also illustrates that inflation rate in Iran has a significant negative effect on FDI inflows. Some studies (e.g. Bissoon, 2012; Parajuli & Kennedy, 2010; Bouoiyour, 2007; Asiedu, 2006) reveal that high inflation will hinder FDI inflows. Furthermore, there is a positive significant relationship between inflation and FDI (Azam & Lukman, 2010; Ali, Khrawish, & Siam, 2010). In contrast, several studies (e.g. Shahzad & Al-Swidi, 2013; Anyanwu, 2012; Parajuli & Kennedy, 2010) reveal that the relationship between inflation and FDI is not significant.

Another result of estimation is that investment return of the economy has a positive relation with FDI inflows, and the variable is significant. The positive impact of investment return on FDI reflects the situation in the Iran's oil sector that has continued to attract more foreign investment regardless of the political situation in the country. Furthermore, the results have shown a negative effect of governance on FDI inflows; therefore, our OLS regression results are consistent with the empirical literature (e.g. Kuzmina et al. 2014); the worse the governance quality is the less foreign investment we observe in Iran.

A common explanation of this evidence would be that corruption and potential pressure create uncertainty for investors in terms of their future cash flows, acting as an additional tax and increasing the risks of business capture, thereby decreasing the attractiveness of a particular region (Kuzmina et al. 2014).

Moreover, the result in model (3) shows that when the sanctions moderates the relationship between macroeconomic determinants and FDI, political stability and exchange rate have a negative significant impact on FDI inflow in Iran. Similarly, Krifa-Shneider and Matei (2010) reported a negative association between political risk levels and FDI inflow. The negative association between political risk and FDI inflows has been supported by some studies (e.g. Acheampong & Osei, 2014; Burger, M., et al., 2013; Solomon & Ruiz 2012; Kim, H. 2010; and Asiedu 2006). However, despite the

argument that political risk could minimize FDI inflow, some studies (e.g. Eseye & Yaroson, 2014; Samimi & Rezanejad, 2013; Bitzenis, 2007; Block, 2000) have shown that political risks play a key role in the decision of the firm to invest abroad. Nevertheless, some authors (e.g. Li and Resnick 2003) fail to show a significant impact of political instability on the FDI inflows.

## 6. Conclusions and Implications

Following the literature, this paper examines the known macroeconomic factors from the literature in the context of Iran, which has a unique context, quite different from those of other countries, given its unique geographical and historical situation and especially the unique international sanctions faced by the country. A comprehensive research into the established FDI macroeconomic factors in Iran in the light of the unique international sanctions, would therefore throw new light on the subject, particular the impact of international sanctions on incoming FDIs in a country. This is obviously also a very important issue to post-revolutionary as well as post-sanctions Iran.

Our findings demonstrate that most of macroeconomic factors tend to impact on the FDI inflow into Iran. Gross & Trevino (1996) state that countries which have high levels of GDP growth are highly inclined to increase foreign direct investment flows by attracting trust from multinational corporations (MNCs) and encouraging them to invest. However, according to Biglaiser & DeRouen (2011), more economic development attracts investors and they believe that the potential market is for a high return on investment.

Further, there is a positive significant relationship between infrastructure and FDI. This imply that development of infrastructures will increase inflows of FDI to Iran (Alavinasab, 2013).

FDI investors are usually looking for location that have suitable infrastructure such as roads, transportation and telecommunications. Investing in developed host markets, can reduce investor's production costs and then increase their profits. Foreign investors in Iran have more focused on energy sectors including oil and gas, petrochemicals, as well as telecommunications, car manufacturing, and mine industries.

Javidan & Dastmalchian (2003) have, however, indicated that there are two internal movements with totally different thoughts to determine the direction of the future of the country: those who are not opposed to development and consider it as a means to achieve religious goals; and those who feel that the survival of Islam and the progress of Iran require a more modern perspective. However, continued confrontation between the two streams has caused political instability and turmoil, and has slowed the progress of the country.

Our finding indicate that sanctions has a significant impact on governance. This imply that Circumvent of sanctions may lead to the corruption and bad governance, which increase administrative costs and therefore reduce FDI inflows. However, the governance affects the security of property rights, transparency and legal process.

Furthermore, the results indicate a negative effect of sanction on GDP. This may be due to embargos on Iran's oil and gas, and by which reducing oil exports. Along with dependency of real GDP growth in Iran is oil. Therefore, sanctions have had a significant impact on Iran's economic growth in recent years due to increasing the severity level of sanctions.

Additionally, sanction has a positive impact on inflation rate and exchange rate in Iran. When international financial sanctions hampered access to oil revenues, Iran experienced a currency crisis that led to a sharp decline in the Rial. On the other hand, the government faced a problem to increase foreign currencies for its import needs, since demand for foreign currencies exceeded supply, which in turn led to a depreciation of the Rial. Moreover, sanctions are not the major cause of exchange rate crisis in recent years.

Our results indicate that sanctions do not have a significant moderating role in the relationship between macroeconomic factors and foreign direct investment. Surprisingly, international sanctions has a positive relationship with FDI inflows in Iran. This means that, despite the sanctions, some of multinational companies have realized the opportunities in the Iranian market as a developing economy; and have invested in less-under-threatened industries. Moreover, the special conditions of



Iran during the years after the Iraq-war, including the abundance of natural resources, geographic location, the young and educated population; and the growing economy, have set the country as one of the objectives of direct foreign investment.

However, over the years, sanctions have serious consequences for the people and the economy of Iran. Nevertheless, the impact of sanctions is often denied in the Iranian press.

Iran has taken measures to circumvent sanctions, in particular through using barter trade and with help of front countries or companies. Moreover, in response to the sanctions, the Iranian government has backed a "resistance economy," such as more domestic use of oil due to limited export markets and the use of alternative industries.

After, the agreement between Iran and the P5+1 in 2015, the so-called post-sanction era has begun in Iran.

In addition, sanctions relief will affect Iran's economy in four main ways: (1) the release of Iran's frozen funds abroad by 2015, which is over \$ 100 billion; (2) the lifting of the sanctions against Iran's oil exports; (3) allowing foreign companies to invest in oil and gas, automobiles, hotels and other parts of Iran; (4) permitting trade with the rest of the world and access to a global banking system, such as SWIFT. However, with lifting sanctions, prospects are brighter for Iran, with new opportunities arising in oil and gas, and investment in manufacturing industries. Iran's government have established several incentive programs in order to encourage foreign companies to invest to Iran.

In addition, the attitude toward providing incentives for attracting FDI among economists is widely different. Moreover, some economists (e.g., Blomstrom & Kokko, 2003; Bora, 2002; Black & Hoyt, 1989) argued that providing incentives will attract more foreign investment, create jobs, and provide access to new technologies; and will result to other social and economic benefits. Cleeve (2008) argue that incentive costs outweigh their benefits, and he believe that improvements in local infrastructure, political stability, and macroeconomic stability are better tools for stimulating foreign direct investment inflows.

Nevertheless, in order to maximize the benefits of sustainable development through FDI (and other external sources of finance), policy makers must be mindful of minimizing risks. Therefore, through good governance, stakeholder participation, creating relevant local capacities and increasing absorption capacity (entrepreneurship, technology, skills and communication); and creating an effective standards and regulatory framework, risks can be minimized (UNCTAD, 2015). Moreover, developing countries need to provide incentive packages to attract foreign investment (Pajunen, 2008).

Haidar (2015) assert that while export sanctions against Iran have not reduced total exports, but it has increased export costs. If the goal is to reduce total exports, export sanctions may not be effective in a global economy. He argued that sanctions might be less effective in globalized world because exporters can shift their exports from an export destination to the other. Thus, the idea that a country can impose trade sanctions on another does not necessarily prove the effectiveness of such sanctions, unless the country's exporters are not able to find alternatives and new business partners.

Foreign investors are more motivated to invest in the host country when they are certain that there is a proper market for their products. This can be achieved by creating a suitable environment and incentives for production activities. The Iranian government must strive to make more deregulation in its economy in order to attract more foreign direct investment. This is true since the inflow of foreign direct investment has increased since the introduction of the "investment incentive program" in 2005.

Hereafter, the Iran's government should strengthened the political institutions and adopt principles that will ensure stability within the polity. The sanctions on Iran and current crisis in the Middle East region has been a major obstacle to instability of Iran's economy. Thus, the restoration of peace in the region will in turn woo more foreign investment to Iran.

However, our results suggest that the government need to allow the exchange rate to depreciate, as this will reduce the price of some of the poor indigenous industries, thus attracting more foreign investment in the form of mergers and acquisitions. Furthermore, Iran needs to increase the competitiveness of the investment environment through investing more in infrastructure and



ultimately increase the inflow of FDI. Finally, all this should be accompanied with ongoing reforms in the Iranian economy.

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