A Comparative Analysis of the Tehran Stock Exchange and Selected Stock Markets: Evidence from a Correlation Matrix

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ABSTRACT

The aim of this thesis is to investigate the impact of financial crisis on Tehran Stock Exchange, comparative empirical investigation to measure the market correlation technique between Iran and specific regions by using time series data from 2000 to 2009.

In particular, it focuses on market integration, measuring the co-movement of the market using monthly returns, calculated from the main price index between Iran's market and those of the United States, England, Japan, Brazil, India, China, Russia, Turkey and Kuwait. Thesis focuses on correlation techniques calculated for three significant periods of time. These periods include before the 2007 financial crisis which includes the 2000-2006, during the financial crisis, which includes the 2007 period, and post financial crisis which includes from 2008 to 2009.

Global financial crisis has affected the Iranian economy; it has not however had considerable impact on the Tehran stock exchange as compared to those of other emerging and developed markets, but there is indirect effect by decreased the demand of the oil and gas in the world. It caused deficit in the government's budget; increased the inflation and interest rate.

The empirical results indicate that Iran is a viable option for these countries to diversify their investment by investing in the market. Iran might be a beneficial economy to be a final destination for their investment.

Keywords: International Diversification, Tehran Stock Exchange, Emerging Stock Market

ÖZ

Bu tezin amacı, pazar korelasyon tekniğini kullanarak, Tahran Menkul Kıymetler Borsası'nın 2000 ile 2009 arası zaman serisi verilerini kullanarak, İran ve belirli bölgeler arasındaki borsa getiri korelasyonlarını ölçmek ve finansal krizin etkilerini araştırmaktır.

Özellikle, İran ve Amerika Birleşik Devletleri, İngiltere, Japonya, Brezilya, Hindistan, Çin, Rusya, Türkiye ve Kuveyt arasındaki aylık borsa fiyat indeksi getirileri hesaplanarak, piyasa ve pazar entegrasyonu üzerinde odaklanılmaktadır. Tezde, üç önemli dönem için hesaplanan korelasyon sonuçlarını kullanılmaktadır. Bu dönemler, 2007 dönemini kapsayan mali kriz, 2000-2006 mali kriz öncesi, ve 2008-2009 mali kriz sonrasıdır.

Küresel mali kriz, İran ekonomisini etkiledi, ancak diğer gelişmekte olan ve gelişmiş pazarlar ile karşılaştırıldığında,Tahran borsasına önemli bir etkisi olmadı. Dolaylı olarak, dünya petrol ve doğal gaz talebi azaldı ve bunun sonucunda, İran hükümetinin bütçe açığı, enflasyon ve faiz oranı arttı.

Ampirik sonuçları, İran pazarının yatırımlarını çeşitlendirmek için incelenen ülkeler için uygun bir seçenek olduğunu göstermektedir. İran, yatırım için nihai bir hedef olarak faydalı bir ekonomi olabilir.

Anahtar Kelimeler: Uluslararası Çeşitlendirme, Tahran Menkul Kıymetler Borsası, Gelişen Piyasalar.

ACKNOWLEDGMENT

To My Parents

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Chapter 1

INTRODUCTION

One of the main tools to reduce investment risks is diversification. The old saying that states "Do not put all your eggs in one basket" clearly tries to give the investor an advice on diversification. There are investors that are tempted to invest in a sure deal at a given point in time however one thing needs to be kept in mind and that is that no investment option is a sure deal in the first place. Investment portfolio diversification can be achieved at several levels. An investor could invest in different stocks all belonging to the same category such as S&P500 or the investor could invest in cross category securities. The highest level of diversification for an investor to achieve is to create a portfolio that includes securities from different countries and economies. This is called international diversification which is one of the main focuses of this thesis.

Iran's unique geographical positioning has placed it at the heart of one of the most interesting places in the world. Iran has borders with strategic countries such as Afghanistan, Pakistan, Iraq, Turkey, Azerbaijan and Turkmenistan. In the south, the Persian Gulf provides a rich source of Gas and Oil for Iran. In the north the Caspian Sea plays a similar role. Iran has played a significant role in the Middle East for several decades. However this role has been greatly amplified after the 1979 revolution. Because of its somewhat radical political views, Iran has been the target of several sanctions which have worked towards its isolation. The stability of the Middle East region is volatile and wars can be waged against countries in a matter of

days. Iran has also been the target of some of these wars. Altogether the financial and political ups and downs of the Middle East in addition to those of the world in general have affected the Iranian economy.

The main focus of this thesis is on market integration, measuring the co-movement of the market using monthly returns, calculated from the main price index. A price index (PI) is a normalized average (typically a weighted average) of prices for a given class of goods or services in a given region, during a given interval of time.

In this study, an attempt will be made to compare the Tehran Stock Exchange PI with those of the following countries

1. Middle East and Persian Gulf: IRAN, JORDAN, TURKEY, EGYPT, KUWAIT
2. BRIC: BRAZIL, RUSSIA, INDIA, CHINA
3. Developed Markets: UK(FTSE100), USA(S&P500), JAPAN(NIKKEI225)

Developed countries chose from different geographical area such as UK in the Europe, USA selected from North America and Japan in the Asia. These countries have top rank for market capitalization of stock Exchange in a specific region.

BRIC: These four countries would be the wealthier than most of the current major economies. China and Brazil become the biggest suppliers of the goods and services, Brazil and Russia become suppliers of row materials in the world. These countries have no alliance or formal trading association such as European Union.

Middle East and Persian Gulf countries are in a same region, anything happen in this area will affect to the economy of the other countries. Jordan, Egypt with Iran: After Iran's revolution they cut all the economical and political relation with Iran and there is no any trade between these countries. This is an opportunity for these countries to invest in each other and make profit in new market and diversify their portfolio.

Turkey and Iran: They have same border and large amount of trading for energy specially oil and gas also have contract to transfer oil and gas to the Europe from Iran by Turkey. In 2010 trading between Iran and turkey reaches 7 Bill Dollar.

In this thesis try to takes a closer look at the concept of international diversification as a means to reduce domestic investment risks. Conditions under which international diversification is beneficial are investigated. More specifically countries are divided into two groups of developed markets and emerging markets. Economies of these countries are becoming more uncorrelated with each other, international diversification opportunities become more available to the investors of both countries. In order to be able to hedge domestic investment risks, an investor needs to create a portfolio that not only includes domestic securities but also embodies foreign investments. It is obvious that international investment itself can be risky so these risks are divided to country specific risks and foreign exchange risk. On the hand this study looks at the Iran's economical and financial structure and ability. A brief history, segmentation and operation of the TSE are provided and the different historical breakthroughs that the TSE has been through, specifically TSE before and after the revolution, is more closely studied.

The main goal of this thesis is compare the correlation coefficient of the changes in return stock index between Iran and the specific countries in three different periods namely before financial crisis (2000-2007), during the financial crisis (2007) and post crisis (2008-2009). The different behavior of the correlation between the indexes of Iran with any of the other countries is investigated and international diversification opportunities that might be available during the periods of time are signified.

The rest of this thesis is structured as follows: The next chapter will discuss the concept of International Diversification. Chapter 3 will explain economic overview of Tehran Stock Exchange. Chapter 4 will provides the modeling framework and introduce the data and the methodology used in the thesis and chapter 5 will point out the conclusion of the thesis along with the suggested policy implications.

Chapter 2

AN OVERVIEW OF INTERNATIONAL

DIVERSIFICATION

2.1 International Diversification versus Domestic Diversification

When an investor creates a portfolio of only a single stock, s/he has tied the success or failure of his/her portfolio to the faith of a single company. Assuming other factors are constant, the investor has a 50 percent chance of either success or failure. Once the number of stocks in a given portfolio increases, the risk is distributed among all the stocks. If a few of the companies included in the portfolio misbehave, hopefully the success of the others would be in a way so that it offsets the losses.

It can be argued that if an investor creates a portfolio of all the stocks in one stock category, for example all the stocks in the NY stock exchange, then the investment risk in that category would be minimal. However since the risks involved in a single category are interdependent, the portfolio is still vulnerable to risks that would affect the category as a whole. The investor can mitigate these risks by creating a portfolio that is sufficiently diversified among multiple categories. Yet the portfolio would be vulnerable to the risks that would affect the economy of the invested country as a whole. From this point on the investor can benefit from investing in the markets of multiple countries with different risk characteristics and interdependencies. This is where international diversification comes into play. Like any diversification

technique; international diversification seeks to reduce the risks involved in investments. .

Thesis tries to show that the even greater reduction of risk can be attained by diversifying a portfolio internationally. Movements in stock prices in different countries are almost unrelated: Changes in price in on the S&p500 appear independent of stock price fluctuations on the London exchange, and so on. When securities of one country are doing worse than expected another market is likely to be doing better, hence offsetting the losses. Simply by investing in stocks of different countries, the risk is drastically reduced (Solnik, 1974).

There is possibility for the local investor to trace the specific country risk and eliminate these risks also domestic diversification allows SME's to diversify their portfolio with small amount of money. International diversification also beneficial for developed countries to diversify and hedge their portfolio. On the other hand country risk appear to be a good determinant of diversification benefits, countries with high level of risk such as emerging countries have potential benefit of international diversification. (Joost Driessen, 2009)

Companies in the world are increasingly moved into foreign markets as part of their growth strategy and trade in international market and make profit from diversify their portfolio. That is linked to the effects of globalization and increase the competition. Access to the deferent countries market can overcome growth challenges and caused the company performance. (Ang, 2007)

International diversification lets firms to compete in the international market and used the international resources such as human resource or R&D. They can sell their product in different countries and growth in the market with different branches. International diversification allows firms to increase efficiency. Also increased

learning and innovation result from economies of scope gained through international diversification. (MICHAEL A. HITT et al., 1997)

This chapter studies international diversification by first defining the different categories of markets that an investor can choose to invest in. It then looks at the risk factors involved when investing abroad. The chapter tries to investigate whether international diversification is still beneficial in a global economy which is trying to bring countries closer together. The chapter concludes by looking at the concept of asset co-movement.

2.2 International Diversification: Developed Markets and Emerging Markets

Developed countries are richer. These countries are more established politically and economically. As a result of this establishment, the sequence of events resulting in their prosperity or poverty is more predictable. Therefore, an investor investing in the equity markets of these countries faces fewer risks. However, emerging markets exist in countries that are usually not as rich (Bodie et al., 2005) and some of these countries have been gifted with extremely valuable assets such as large amounts of natural resources that could be used to provide a stable future. However, due to the national and international political turmoil that these countries are usually involved in, investing in the markets of these countries could become extremely risky. As will be shown shortly, a large percentage of the global market capitalization resides in developed markets; however the stock indexes of some emerging markets have proven to outperform those in the developed markets. This has provided domestic investors with the opportunity to diversify their portfolio across national boundaries.

Several social and economical key factors differentiate between developed and emerging markets. For example economists usually use the level of industrialization

to determine the level of development of the market. Other economical factors, such as the degree of prevalence of the service sector over other sectors of the economy and the role that information technology plays in finding new and innovative ways of doing business are also accountable("Developed ", 2011).

However one of the most traditional economical views is to use the ratio of Gross Domestic Product per capita. GDP refers to the approximate value of all the products and services that were produced within a country in a determined time frame, usually a year. This number is then divided by the number of people living in that country in the specified time ("Gross Domestic Product", 2011)

The result of this division can be interpreted as the average income of the people in that country. According to the definition in year 2000, those countries with average income of 9,300 dollars and higher would be categorized as developed countries (Bodie et al 2005).

With respect to the above definition, Table 1 lists 25 developed countries along with their market capitalization over the years 1996 to 2001. Market capitalization can be defined as the value of all the equity markets within a country or region. Columns 9 and 10, "Percent of World", represent the ratio of each country's market capitalization to that of the world in years 1996 and 2001 respectively. These two columns can be compared to determine whether the economical weight of a given country or region has increased or decreased over the five year period. An example of this comparison can be made between the United States and Japan. The market capitalization of U.S. has increased from 36.5 percent of the world to 49 percent, while Japan's share has decreased from 24 percent to only 11. Column 10, Growth 1996-2001, represents the percentage of growth between 1996 and 2001. For example, the United States market capitalization has increased from $5,294 billion in

1996 to \$12,597 billion in 2001 with a growth rate of 137.9%. A negative growth rate represents the decline in the value of equities. This situation can be seen with respect to the market capitalization of the Pacific Basin region with a growth rate of -4 percent. This growth rate is on the contrary with the situation of the Pacific Basin region during 1980s and early 1990s (Bodie et al, 2005).

Columns 11, 12 represent the GDP of the country or region in 2001, in billions of dollars, and the GDP per capita respectively. The thing to note with respect to GDP and GDP per capita is that although GDP may be variable across nations, the GDP per capita stays more or less the same across developed countries. A comparison between the GDP values for Canada and the United Kingdom will make this point more clear. While the GDP value of U.K. is twice as much as that of Canada, the GDP per capita for both countries is more or less in the same range (Bodie et al, 2005).

Column 13, Capitalization as Percentage of GDP 2001, is ratio of market capitalization and GDP of the year 2001. Calculating this ratio for the United States for example, using the GDP of 10,208 and the market capitalization of 12,597, results in 123%. The result obtained for this ratio shows similar characteristics of variability with respect to the GDP itself (Bodie et al, 2005). The relationship of these two parameters will be investigated more closely later in this chapter.

The aggregate market capitalization share for developed countries is approximately 79 percent. This might lure some portfolio managers to believe that building a portfolio that solely consists of the equities in these markets is diversified enough. However others might still seek opportunities in less conventional markets.

Table 3 lists the market information for 20 emerging markets. These markets include countries like China, Brazil and Korea. An astute businessman would notice

China's economical growth of 651% during the 1996-2001 periods. This is when China's market capitalization with respect to the world total was only a fraction of one percent in 2001. Other emerging markets such as India, Poland and Korea all show potentials for noticeable growth in the future so diversifying a portfolio over the markets of these countries could be rewarding. However it should not be forgotten that investment in emerging markets can also become risky. This situation can be observed by noticing Thailand with a negative rate of growth (Bodie et al, 2005).

Table 1: Market Capitalization of Stock Exchanges in Developed Countries

Country	Market Capitalization U.S. Dollars (billions)						Percent of World		Growth 1996-2000	GDP 2001	GDP Per Capita 2001	Capitalization As % of GDP 2001
	2001	2000	1999	1998	1997	1996	2001	1996				
World	$25,711	$31,668	$26,198	$20,703	$17,966	$14,494	100%	100%	77%	30,960	5,450	83
North America	13,169	15,601	13,166	10,008	7,685	5,590	51.2	38.6	135.6	-	-	-
USA	12,597	14,882	12,623	9,528	7,271	5,294	49	36.5	137.9	10,208	35,900	123
Canada	572	719	543	479	413	295	2.2	2	94	700	22,525	82
Europe	7,305	9,185	7,657	6,948	4,878	3,585	28	25	104	-	-	-
United	2,256	2,639	2,475	2,179	1,635	1,206	8.8	8.3	87	1,424	23,750	158
France	1,119	1,356	937	843	518	427	4.4	2.9	162	1,307	21,910	86
Germany	896	1,204	1,062	992	709	481	3.5	3.3	86	1,848	22,500	48
Switzerland	633	712	662	596	447	303	2.5	2.1	109	247	34,019	256
Netherlands	559	723	634	607	479	339	2.2	2.3	65	381	23,810	147
Italy	556	736	526	464	247	214	2.2	1.5	160	1,090	18,950	51
Spain	336	337	310	311	212	150	1.3	1	124	582	14,590	58
Sweden	212	375	253	247	188	139	0.8	1	52	210	23,580	101
Finland	164	379	173	93	60	42	0.6	0.3	295	121	23,260	136
Belgium	130	158	152	173	105	82	0.5	0.6	58	230	22,420	56
Denmark	90	101	75	88	61	44	0.3	0.3	103	163	30,450	55
Ireland	76	75	58	59	36	27	0.3	0.2	185	103	27,140	73
Norway	69	54	52	56	47	35	0.3	0.2	100	165	36,600	42
Greece	55	88	83	51	27	17	0.2	0.1	224	116	11,000	47
Portugal	49	74	59	75	47	23	0.2	0.2	111	110	10,940	45
Israel	39	47	35	29	24	18	0.2	0.1	120	110	17,159	35

Source: (Bodie et al, 2005)

Table 2: Market Capitalization of Stock Exchanges in Developed Countries

Country	Market Capitalization									GDP 2001	GDP Per Capita 2001	Capitalization As % of GDP 2001
	U.S. Dollars (billions)						Percent of World		Growth 1996-2000			
	2001	2000	1999	1998	1997	1996	2001	1996				
Austria	24	28	31	35	27	26	0.1	0.2	-8	189	23,078	13
New	19	23	26	26	36	29	0.1	0.2	-34	49	12,763	39
Pacific	4,642	6,184	4,764	3,201	4,729	4,830	18	33	-4	-	-	-
Japan	2,947	4,246	3,092	2,188	3,138	3,509	11	24	-16	4,148	32,720	71
Hong Kong	532	553	404	254	452	289	2.1	2	84	162	10,940	329
Australia	363	384	378	249	276	219	1.4	1.5	65	357	18,459	102
Taiwan	205	331	260	173	232	152	0.8	1	35	282	12,620	73
Singapore	113	143	133	72	116	138	0.4	0.9	-18	86	20,880	132

Source: (Bodie et al, 2005)

Table 3: Market Capitalization of Stock Exchanges in Emerging Countries

Country	Market Capitalization									GDP 2001	GDP Per Capita 2001	Capitalization As % of GDP 2001
	U.S. Dollars (billions)						Percent of World		Growth 1996-2000			
	2001	2000	1999	1998	1997	1996	2001	1996				
China	$170	$94	$78	$67	$48	$23	0.66%	0.16%	651%	1,180	928	14%
Brazil	169	220	155	135	175	86	0.66	0.59	97	503	2,810	34
Korea	151	218	181	35	95	104	0.59	0.72	45	423	8,870	36
Mexico	140	128	115	96	97	74	0.55	0.51	89	621	6,190	23
South Africa	101	123	126	121	148	124	0.39	0.86	-19	112	2,520	90
India	88	139	93	72	113	88	0.34	0.61	-1	485	470	18
Malaysia	76	98	90	50	170	167	0.3	1.15	-54	89	3,720	86
Russia	66	49	35	44	93	37	0.26	0.25	80	310	2,144	21
Chile	53	49	47	45	61	48	0.2	0.33	10	64	4,170	82
Turkey	36	75	39	54	36	24	0.14	0.16	50	148	2,230	24
Argentina	29	37	51	48	56	43	0.11	0.3	-31	267	7,120	11
Thailand	26	30	46	17	46	89	0.1	0.61	-71	115	1,820	23
Poland	22	29	25	14	7	6	0.09	0.04	287	176	4,566	13
Philippines	20	23	41	26	55	62	0.08	0.42	-68	71	862	28
Indonesia	19	32	39	12	76	60	0.07	0.41	-68	145	688	13
Czech	10	13	12	13	11	13	0.04	0.09	-26	52	5,137	19
Hungary	9	14	14	15	8	4	0.04	0.03	128	56	5,482	16
Peru	6	8	7	8	11	10	0.02	0.07	-36	54	2,070	11
Colombia	6	5	7	10	22	17	0.02	0.12	-65	83	1,940	7
Venezuela	4	4	4	4	10	4	0.02	0.03	2	130	5,280	3

Source: (Bodie et al, 2005)

2.3 International Diversification Risk Factors

There are two main risk factors that are involved when investing in foreign markets. These two are the currency exchange risk and the country-specific risks. The following sections try to provide an overview and examples of each of these types of risk (Bodie et al, 2005).

2.3.1 Currency Exchange Risk

The ups and down in price of the currency rate represents only part of the foreign investment, since the investor want to hedge their portfolio they have to control the foreign exchange risk and capital restrictions on foreign holding. More important is the instability of exchange risk in the world market. Investors have to trace all news related to the exchange rate for hedging their portfolio. One way to remove exchange risk from international portfolio investment is to hedge foreign holding. (Solnik, 1974)

The currency exchange risk is defined as the risk involved by the fluctuations in the exchange rate between the local currency and the foreign currency. This risk is present when investments are made in foreign markets. If the exchange rate between the two currencies at the beginning of investment is assumed to be E_{start} and by the end of investment it fluctuates to E_{end}, then the return of investment, $Return_{Foreign}$ would be positively or negatively offset by the ratio of the two exchange rates, E_{start}/E_{end} (Bodie et al, 2005).

There are two types of foreign investments that can be made. One type of investment is made in safe markets of a foreign country. Examples of such markets include the bond market with a usually fixed and predetermined rate for $Return_{Foreign}$. These markets usually carry little or no risk at all. In this case, the risk involved in investing in a foreign market is the pure exchange rate risk. However not all markets

are risk free. An example of a risky market is the equity market. If investments are made in the equity market of a foreign country, then the amount of Return$_{Foreign}$ is not known beforehand. The convenience of knowing the amount of Return$_{Foreign}$ beforehand would help us in hedging the currency exchange risk by entering into forward or future contracts (Bodie et al, 2005).

2.3.2 Country Specific Risk

For an investor to be successful in a foreign market, s/he not only needs to study the overall workings of the target country's economy, that is the macroeconomics, but s/he also needs to take into account the series of internal or external influences that may affect the investments one way or another. There is no doubt that countries could get involved with each other over political indifferences. Wars are waged as a claim over a region or territory. Governments are changed as a result of peaceful elections or hostile cues and as a result, the political structure of the country could change overnight. Countries could go bankrupt altogether. All of these risks could be categorized under the country-specific risks.

An investor investing in his home country usually knows about the political and the overall economical and financial situations of the country. S/he, therefore, can make a sound decision as to whether or not invest in a given market at a given period of time. However, when investing in foreign markets, the knowledge of the risks threatening the investments can be scarce and expensive (Bodie et al, 2005).

There are different methodologies that one can use to analyze the risks involved in foreign investments. Previously, individuals having experience investing in a foreign market are the most expert people to provide an insight about the risks involved in investing in that country. However the opinions provided by these individuals could be based on personal reasoning and not necessarily on given facts. As foreign

investment has become more and more important different institutions have tried to come up with structured ways to analyze the risks involved. One of the credible organizations currently operating in the field of country risk analysis is the Political Risk Services Group. The PRS publishes monthly reports that include a comprehensive risk analysis for different countries based on several criteria (Bodie et al, 2005).

The risk calculated for each country is composed of three factors that could influence the investments. These factors are the political risk, the financial risk and the economical risk. In each risk factor, there are different indices that could contribute to the overall variation of that risk factor. These indices are scored and added together. The sum of all the indices represents the value of the given risk factor. Once the value for all risk factors are calculated separately, their average is calculated with the political risk having a highest weight of 0.5, and the financial and economical risks having an equal average of 0.25. The final result is a number between 100 (least risky) to 0 (most risky). Based on the calculated number, countries are divided into five categories. These categories are; very low risk (100-80), low risk (79.9-70), moderate risk (69.9-60), high risk (less than 50) (Bodie et al, 2005).

The indices that are used to calculate each risk factor is summarized in the following table: (Bodie et al, 2005)

Table 4: PRS Risk Score Variables Relating to Country Specific Risk

Political Risk Variables	Financial Risk Variables	Economical Risk Variables
Government Stability	Foreign debt (% of GDP)	GDP per capita
Socioeconomic conditions	Foreign debt service (% of GDP)	Real annual GDP growth
Investment profile	Current account (% of exports)	Annual inflation rate
Internal conflicts	Net liquidity in months of imports	Budget balance (% of GDP)
External conflicts	Exchange rate stability	Current account balance
Corruption		
Military in politics		
Religious tensions		
Law and order		
Ethnic tensions		
Democratic accountability		
Bureaucracy quality		

Source: (Bodie et al, 2005)

2.4 Is International Diversification Still Beneficial?

When an investor spreads his portfolio across international equities, s/he is hoping to reduce the risk of his/her investments. Since the risks of investing in one market are not directly attached to the risks of investing in another, the average risk could be managed in a beneficial manner.

The detachment of investment risks among nations is a direct result of the amount of interdependencies between the economies of the invested countries. The key to the benefits of international diversification is the presence of a low correlation index among the international markets. This is the most basic logical conclusion that an investor should take into consideration when investing abroad (Yavas, 2007).

In addition the benefit of diversification in crisis depends on the investment horizon over the short run, pain is fairly well distributed across markets and diversification is at weakest. Over longer period however, there are meaningful differences in realized returns. (Clifford S. Asiiess et al., 2011)

However, over the years, different factors have been introduced that have increased cross-country correlation bringing nations closer together economically. Some of these factors have historical backgrounds while others have materialized in the past two decades or so. The following section will look briefly at some of these intervening factors. Some believe that the effect of these factors has decreased the benefits of international diversification (Yavas, 2007).

2.4.1 Development of Multinational Companies

The formation of multinational companies is not a new concept. The first multinational corporation was the Dutch East India Company formed in 1602. This mega-corporation had monopoly of trade in the Asia and had the backing of the

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government. It celebrated wealth and success for over two centuries ("Dutch_East_India_Company ", 2011).

Modern multinational companies are formed to provide their products and services in more than one nation. These companies take different forms and shapes to adapt themselves to the culture and environment of their target locations ("Multinational_corporation ", 2011)

As a result of this situation, the economies of the countries being invested by multinational companies become interdependent. The economical success or failure of the company relies on the economical success or failure of all the countries involved. This interdependency has brought the economies of the countries invested in by multinational corporations, closer thus reducing benefits of international diversification.

2.4.2 Advances in the Information Technology Field of Science

In recent years, blazing advances in information technology has provided a platform on which news and information can be passed on, on a click's time. This event can be regarded as another factor which has brought international economies closer together therefore reducing the benefits of international portfolio diversification. Nowadays, gathering information regarding the market of a foreign country has been made extremely easy using the Internet. New tools have been developed that provide investors with easy online access to the markets of several countries at once. Even the small dependencies, that would have usually gone unnoticed previously, are magnified and elaborated using the benefits of information technology. Because of these rapid changes, today countries can see themselves as being more interdependent economically than before (Murali et al, 2008).

2.4.3 Deregulation of the Financial Systems of Major Industrialized Countries

Previously, limitations were in place that would prevent major sectors of an economy from interfering in each other's area of expertise. For example, banks were not allowed to own insurance companies and vice versa. In the previous decade or so some countries have passed laws that would alleviate such limitations. A very notable example of such deregulations was the Financial Services Modernization Act of 1999 which was passed on October 22nd 1999 by the Clinton administration (McLaughlin, 1999). This law, also referred to as the Gramm-Leach-Bliley Act, effectively repealed the 60 year old Glass-Steagall Act of 1933. The latter would prohibit banking, security and insurance companies from entering into each other's area of business while the Gramm-Leach-Bliley act removed such limitations. As a result of this new law banking, institutions would be able to acquire institutions of other types. One such merger was negotiated between the Citigroup bank and the insurance company of Travelers Group ("Gramm-Leach-Bliley-Act", 2011).

Examples of such attempts are collectively referred to as the deregulation of the financial system and are trends happening in some of the major industrialized countries.

As a result of the mergers of different institutions with different areas of business, the risk involved in investing in one business becomes merged with the risk of the other. Therefore, the economical success or failure of the company is now spread across multiple businesses. This would result in increased interdependency and correlation between businesses. Some experts even call the Gramm-Leach-Bliley Act the root cause of the 2007-2010 Subprime mortgage crises("Gramm-Leach-Bliley-Act ", 2011).

2.4.4 Growth in International Capital Flows

International capital flows are generated as a result of international trade. When goods and services are imported or exported, the buyer and seller exchange monetary payments just as in any ordinary financial transaction. This exchange creates a balance that could be positive or negative. When the balance is positive, the country exports more goods and services than it imports and vice versa (Ott, 2008).

In recent years, as a result of the creation of a global network of communication, transportation and trade, the rate of international capital flows has shown signs of explosive growth. This has made some countries creditors and others debtors. Therefore, the economical success or failure of one country has been highly dependent on the others. As a result of this interdependency, the cross-country correlation has been increased and the benefits of international portfolio diversification have diminished.

It is interesting to note that one of the factors of globalization is the creation of a global network of communication which is itself the result of the advances in the information technology field. This shows that the factors that influence the increase of the correlation among nations are themselves interdependent ("Globalization ", 2011)

2.4.5 Abolishment of Foreign Exchange Control

Foreign exchange control refers to any restrictions that are imposed by authorities in a country or region regarding the trade of foreign currency. Examples of such controls are keeping the foreign exchange rates fixed, limiting the trade of foreign exchange by amount or authorized exchanger and any limitation on the import or export of foreign currency. This situation usually happens in countries which are poorer or their economies are experiencing a phase change. The abolishment of

foreign exchange control by itself has little effect on international diversification however it is by itself a direct result of globalization ("Foreign ", 2010).

In all the arguments so far the topic of a huge and external shock has been left out. Examples of such a shock are the September 11th attacks on the US soil. It should be noted that international markets act somewhat similarly in response to these shocks. In other words, the correlation between markets would increase after such events. Investors willing to invest in foreign markets should be prepared to deal with risks of this kind in addition to all the other economical risk factors (Yavas, 2007).

By studying the co-movements of different markets in relation to each other, we may come to the conclusion that these markets are more or less correlated with each other. However, there are still opportunities present for international diversification. In keeping in line with the logic of international portfolio diversification, it can be concluded that investors should direct their investments towards international markets that have a lower degree of correlation relative to others. Examples of such markets are emerging economies which are usually less correlated with the economy of industrialized markets (Yavas, 2007).

2.5 Co-movement of Assets: A Theoretical Overview

The price of one asset may in times show similar characteristics, with respect to the direction of increase or decrease, to the price of another asset. This relationship has many applications is finance and can be specifically used to optimize an investment portfolio. Many theories have been presented to explain the relationship of asset co-movement and many complex mathematical models have been devised. This section briefly looks at some of the theories involved. (Veldkamp, 2005)

2.5.1 Traditional View

Every asset has a fundamental value. The fundamental value of each asset is determined by its future cash flows. The future cash flows are then converted to present value with the use of a discount rate. This value is called the fundamental value (intrinsic value) of the asset. In other words, the fundamental value reflects the price of the asset.

In one theory, the co-movement in the prices of assets is caused by the co-movement in fundamental values. This is the traditional theory that tries to explain co-movement. This theory is best suited for friction-less economies in which investors make rational decisions with respect to their investments (Shleifer, 2004).

According to the traditional view, the prices of two assets that have similar cash flows, and therefore, their fundamental values are similar, would move similar to each other. This theory holds true if much of the investor population make rational decisions about their investments. This model is often called a friction-less economical environment (Shleifer, 2004).

Another set of theories tries to detach the co-movement in asset prices from their fundamental values. These theories are best suited in economies in which the decisions of investors with respect to their investments are not always rational. These theories are also called sentiment-based theories of co-movement. Sentiment-based theories are composed of three different views which are the Category view, the Habitat view and the Information Diffusion view. Each of these views tries to explain the co-movement of asset prices from a different perspective (Shleifer, 2004). The following section explains each of these views briefly.

2.5.2 Category View

Stocks are categorized with respect to common characteristics. Examples of such stock categories are internet stocks and oil industry stocks. Some categories are even the opposite of each other. Examples of such stocks are small-cap stocks versus large-cap stocks and value stocks versus growth stocks. Dividing stocks into categories simplifies the decision making process for many investors. Instead of choosing between many stocks, investors can invest in the category which includes the related stocks. Traders can allocate funds at the level of the category and transfer funds from one category to the other if they anticipate better investment opportunities across categories (Charpentier, 2009).

Category view co-movement can be explained through the behavior of noise traders who might transfer funds in and out of one category without a rational decision making process. In such a scenario, the correlated sentiment could cause a demand pressure on the assets of the category. This increase in demand could increase the prices of the stocks in that category. This can happen to all assets in the category whether or not their fundamental values are related (Charpentier, 2009).

Supportive examples of the category based co-movement versus the traditional fundamental value co-movement are the so-called "twin stocks". Twin stocks are claims to the same cash flow which are traded at different locations. The stocks in one location tend to co-move with the movement of the dominant indices in their respective location. These stocks may even move in opposite directions of each other based on the prosperity of their index locale. A very good example of this scenario is Royal Dutch and Shell. The two companies merged at 1907 and are representatives of the same cash flow. Royal Dutch shares are mostly traded in the United States and the Netherlands while Shell shares are traded in the United

Kingdom. The movement behaviors of these two stocks are closely tied with the movement of the S&P and the FTSE indices respectively (Charpentier, 2009).

2.5.3 Habitat View

It has been observed that many investors tend to allocate funds to only a subset of all available securities (Bodie et al, 2005). The decision as to which securities to invest in can be based on several factors from which risk aversion, sentiment, liquidity needs, transaction costs, international trading restrictions and lack of information are a few (Shleifer, 2004).

For example, low priced stocks are more traded by individual investors. These investors, often called retail investors, are not part of any larger firm and merely buy and sell securities for their own accounts. Another study shows that certain investors are more attracted to stocks that have lottery features. A lottery featured stock is usually low-priced and has a high degree of volatility and skewness. These investors are categorized according to certain socioeconomic characteristics (Kumar et al,2009).

Risk aversion is one factor that can create subsets of investors with different habitats or stock categories. Investors with high risk aversion tend to invest in stocks that are low in volatility. On the contrary, investors with high risk tolerance tend to invest in more volatile markets (Kumar et al,2009).

Habitat view co-movement is explained through the behavior of the investors that trade in the stocks categorized in a specific habitat. These investors trade in and out of their habitats as their decision making factors change. If there is a correlated sentiment with respect to the stocks in a given habitat, this could induce a common factor on the returns of the stocks in that habitat (Kumar et al,2009).

2.5.4 Information Diffusion View

Information diffusion is the rate at which the release of a piece of relevant information affects the price of securities. Some stocks tend to absorb information more quickly than others and are hence more sensitive to information release. Other stocks absorb information as well however with some amount of delay. The reason for this stock behavior could be many. For example, the owners of a group of stocks could have better and faster access to news while others do not. Some stocks could also be less costly to trade and therefore, could be bought and sold with less overhead than others (Shleifer, 2004).

Information diffusion view co-movement is explained through the behavior of the investors who own stocks which incorporate information at similar rates. When good or bad news is released these stocks move up or down together regardless of their fundamental value (Shleifer, 2004).

2.6 Systematic and Unsystematic Risks

The risks involved in any investment can be divided into two components. One set of risks are related to the overall market movement. These risks are evident when looking at the market as a whole. Examples of such risks include the level of inflation, changes in the interest rates and political and economical situations within a market or set of markets. Risks of this nature are collectively called systematic risks. Systematic risks affect the great portion of the market and cannot be mitigated using diversification. The reason is that when such overall changes affect the market, the individual shares in a diversified portfolio co-move therefore the affect of diversification is negated. (Charles et al, 2005)

On the other hand, another category of risks, called unsystematic risks, are affective when investing in any individual stock or company. These risks are the

direct result of the operation of the company. Examples of these risks may include labor strikes, inventions and research and development. Unlike systematic risks, unsystematic risks can be achieved greatly through diversification.

Figure 1 depicts the affect that diversification has on unsystematic risk reduction. According to this figure, as the number of funds in a given portfolio rises, the ratio of unsystematic risk decreases. This behavior is evidently visible when the number of funds reaches 15. At this point about 90 percent of the unsystematic portion of the investment risk is reduced. The unsystematic risk can be reduced to 96 percent when the number of assets in the portfolio reaches 25. The funds included in a diversified portfolio can be randomly select from a set of well defined funds. (Charles et al, 2005)
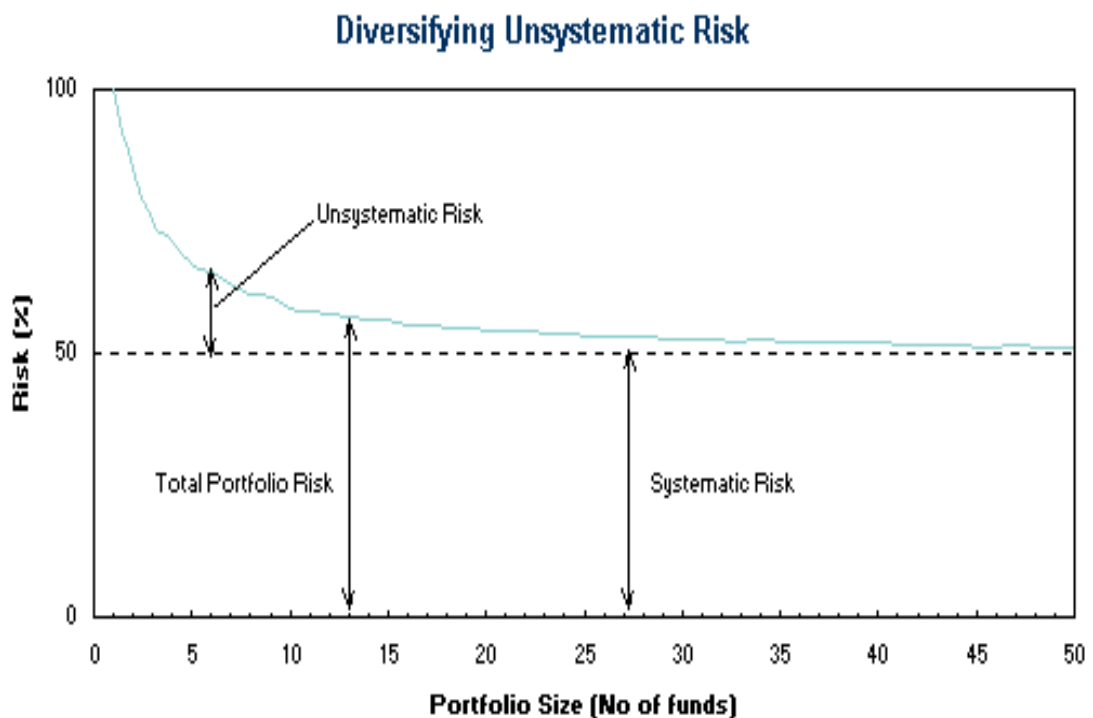
Figure 1: The Relationship between Unsystematic Risk and Diversification

Source: (Charles et al, 2005)

Chapter 3

TEHRAN STOCK EXCHANGE

This chapter provides an introduction to the Tehran Stock Exchange which is the official entity for trading securities in Iran. The chapter starts by looking at some of Iran's potential economical strongholds which, if managed correctly, could transform Iran into an attractive business alternative. The chapter continues to provide a brief history of the formation of the Tehran Stock Exchange since its inception and growth in the 1960s to its standstill position and following rebirth after the 1979 revolution. The current organizational structure and its present role in Iran's economy are explained next. The chapter also looks at foreign investment opportunities that have been provided through regulation of foreign investments and concludes with a brief analytical overview of international diversification risks involved when investing in Iran.

3.1 Iran as a Potential Investment Heaven

Iran has many characteristics that could potentially turn it into one of the most attractive investment options. Its unique geographical location borders it with significant business partners far and near, so much that many consider it to be a cross-road connecting Middle East to Europe and Asia. Iran has a demand oriented consumer base. Its domestic market is still growing as its seventy million populations is expected to grow in the future.

Iran has invested a lot in the training of its youth. The system of public and private universities was expanded, starting from the 1980s, to meet the need of the Iranian baby boomers that were born during that era. The result of this effort has emerged into a highly educated and motivated work force that could potentially be put to work in various areas of the industry thus expanding the economical horizons("Tehran Stock market ", 2009).

Iran has also been gifted with plentiful amounts of natural resources. Its vast oil fields located in the south and partly in the north region of the country are a huge source of income. New fields are actively being explored and investments are being made to make use of the huge gas fields located in the south. It has many metallic and non metallic mines currently being explored.

Because of its geographical vertical stretch, Iran appreciates a four season climate. During one day the north parts of Iran could be at minus 20 degrees Celsius while the climate of the regions in the south could reach as high as 20 degrees above zero. This has given Iran an agricultural advantage.

Iran is continuously working on its transportation system. It has become clear that the importance of road based transportation is as much as transportation by air and sea. Iran's road, especially those connecting east to the west have become a vital vein in global transportation system ("Tehran Stock Market ", 2009)

3.2 History of the Tehran Stock Exchange

Upon the ratification of the Stock Exchange Act in 1967, the Tehran Stock Exchange was formed as a small center for trading corporate and government bonds. During the 1970s, Iran's economy was experiencing a booming period as a result of high oil prices. This led to the release of suppressed demands for equities. In response to this high demand, the government would actively grant shares of

companies that would either belong to the government or were privately owned by families. This supply and demand cycle caused the market to reach its peak exactly before the 1979 revolution. (Iranbourse, 2009)

After the Islamic revolution, the economic principles were changed drastically. Interest-based activities were banned, and many firms and organizations were nationalized. Iran got into an eight year war with its neighboring country, Iraq, and many resources were shifted towards this war. All this, hand in hand, caused the Tehran Stock Exchange to come into a stand still. ("Tehran Stock Market", 2009)

During the reconstruction period, attention was given again towards the privatization of industries. In 1989, the government decided to privatize many of its state-owned industries. This affected the TSE's operation as one of the main tools to achieve this goal. According to article 44 of the Islamic Republic constitution, the government should only assume the role of a policy maker rather than the direct owning and managing of its firms and industries. In compliance with this constitutional article, many state-owned firms have recently been privatized using the Tehran Stock Exchange and many more are expected to follow suit. ("Tehran Stock Market ", 2009)

Today, TSE is a member of the World Federation of Exchanges and has also helped found the Federation of Euro-Asian Stock Exchanges. According to July 2010 statistics, TSE lists the information for 337 companies and has a total market capitalization of 72 Billion USD. Different industries ranging from automotives, telecommunications, agriculture, banking and insurance, petrochemicals, mining and steel are listed on TSE.

3.3 The Tehran Stock Exchange Structure

TSE itself has gone through a process of privatization by which the Tehran Stock Exchange Corporation was born from the Tehran Stock Exchange Brokerage Organization through a process of demutualization. The shareholders of the company mostly include several banks and insurance companies and other financial institutions. These shareholders elect 7 non executive members to form the board of directors which is a two year term position. The board of directors elects a managing director who is responsible for the day to day operation of the corporation for a two year term. Figure 2 shows the organization chart of the TSE and shows the various departmental units that are responsible for various operations of the corporation. ("Tehran Stock Market ", 2009).
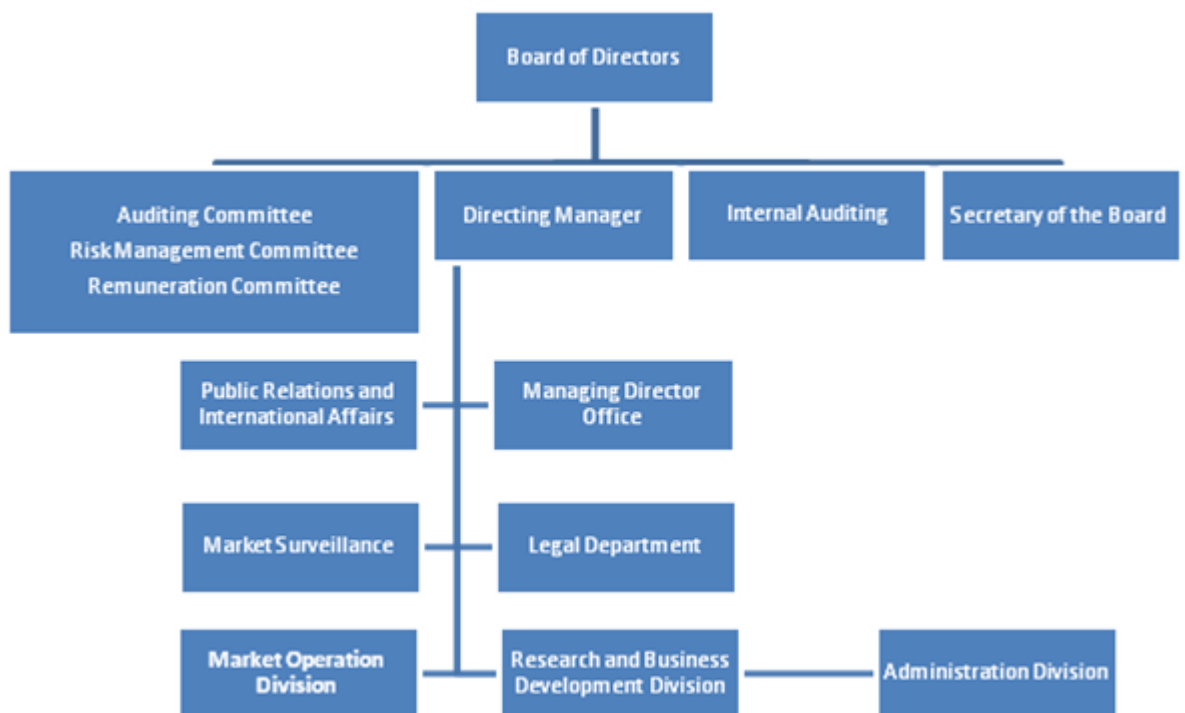
Figure 2: The TSE Organization Chart

Source: (Asl, 2009)

3.4 TSE Market Segmentation

The TSE market is divided primarily to a main market and a secondary market. The secondary market is a fair market to trade securities of small and medium sized companies where the main market is used to trade the stock of large corporations with huge market capitals. The main market is also divided to a main board and a secondary board. Besides the two markets there exists a third segmentation for trading participation bonds. Participation bonds are issued by the government at a fixed rate to provide financing for different governmental projects. This third segment of the TSE is called the Corporate Participation Certificates market. Each company is listed in one of the segments according to the minimum listing requirements. The minimum listing requirements for the main and secondary markets is outlined in the following table:

Table 5: Tehran Stock Exchange Market Segmentation

Description	Main Board	Secondary Board	Secondary Market
Minimum Capital (Billion IRR)	200,000	100,000	30,000
Minimum Share Holders	1000	750	250
Free Float (%)	20	10	15
Minimum Term of Operation (Years)	3	-	-
Profitability (Years)	3	2	1
Equity to Asset Ratio (%)	30	20	15
Market Makers	Selective	Selective	Mandatory

Source: ("Tehran Stock Market ", 2011)

3.5 Trading System

The hours of operation of TSE are Saturday to Wednesday. TSE is closed on Holidays. The trading time is between 9:00 am to 12:00 pm. TSE uses an order-driven trading system and all transaction are carried out according to the principles of open auction. The system allows brokerages to place order to the system simultaneously. The system then matches the buying and selling orders on the basis of best price priority and time priority. A selling order is considered to be best price if it is at the lowest price. A buying order, on the other hand, is considered to be best price if it is at the highest bid. Once the buying and selling orders have been matched according to the best price criteria, the system carries out the transaction on a first come first served basis, which implements the time priority aspect of the trading system.

The TSE trading system is also able to derive and display various statistical information related to previous and current transactions. This statistical data can be of valuable use to traders as it informs them of the prices, volumes traded and outstanding buying and selling orders.

Price fluctuations on shares and rights are a maximum 3 percent and 6 percent respectively from the last closing. This can be changed by the board of directors in special situations. Short selling is not allowed. There are no minimum trading requirements. The following table outlines the TSE trading system:

31

Table 6: The Tehran Stock Exchange Trading System

Days	Saturday to Wednesday
Hours	9:00 am to 12:00 pm
Market Segmentation	Main Market (Main and Secondary Boards), Secondary Market
System	Automated Trading System (Order-Driven)
Mechanism	Open/Continuous Auction
Market Maker	Selective
Instruments	Shares, Rights and Corporate Participation Bonds
Currency	Iranian Rials
Real Time Information	Bid/ask, Prices, Volume, Value and Company announcements
Dividend Tax	None (22.5% tax is obtained from the source company)
Capital Gain Tax	None

Source: (Asl, 2009)

3.6 Market Information Availability

One of the main principles of fair and transparent operation is market information availability. TSE has tried to accomplish this by continuously issuing news in relation to the market operation. This information is also readily available through the TSE website for free.

The Securities and Exchange Organization, SEO, was founded as the result of the new Securities Act passed by the parliament in 2005. Its role is to supervise the operation of the TSE and enforce the legislations passed by legislators in relation to the trading and general operation of the stock exchange market in Iran. The aim of the legislations in general is to provide a fair and transparent environment in which traders can invest and corporations can compete. An information system named CODAL, accessed at www.codal.ir, has been implemented by the SEO to provide news that directly affects the market. Investors can access and use this information for free. (Asl, 2009)

3.7 TSE Indices

The all share price index is called the Tehran Stock Exchange Price Index or TEPIX. The TEPIX is used to get an insight of the overall price movement in the market and is used using a weighted sum ratio of the value of all the shares accommodated through TSE. The TEPIX calculation formula is shown below:

$$TEPIX = \frac{\sum P_{i,t} C_{i,t}}{\sum P_{i,b} C_{i,t}}$$

$P_{i,t}$ is the price of the share of company *i* at time *t*, while the $P_{i,b}$ is the price of the share of the company on the closing of the trade on March 21st 1990. C is the total number of shares. TEPIX is calculated every two minutes.

The TSE also calculated various other indices that are used to get a perspective of the particular industry sectors of the market. For example each company has an individual index in addition to an industry specific index which describes the situation of that industry or sector. Other notable indices include the TSE Dividend

and Price Index or TEDPIX, TSE All-Share FF adjusted or TEFIX, TSE Cash Dividend Index or TEDIX, and the TSE-50 (Asl, 2009).

3.8 Foreign Investment in the TSE

Foreign investments in Iran's stock market are regulated through the Foreign Investment Promotion and Protection Act or FIPPA. FIPPA provides the frameworks by which natural persons or legal entities, which are registered in their place of jurisdiction, are able to invest in Iranian security market. This section briefly looks at FIPPA and the amendments that were added to relax foreign investment on 18th of April 2010. (Asl, 2009)

3.8.1 FIPPA Investment Procedure

According to the original regulation, foreign investors, either individuals or legal entities were allowed to invest in the TSE upon receiving a special Investment License under FIPPA. The amount of shares held by such foreign entities could not exceed 10 percent of the overall shares of the invested company. In the event that this occurs, the entity is required to sell the excess amount in a limited time frame, usually a week. Foreign entities could not assume the management role of an Iranian company, regardless of the amount of shares that they hold.

Funds required to purchase the securities need to be transferred to an Iranian bank account. This account should solely be used for the purpose of making payments towards purchasing the stock or receiving payments resulting from selling the stocks in addition to the dividends received from the profits of the stocks acquired. There is a so called Lock-in period of three years by which the funds cannot be transferred back. However Iran has guaranteed to provide the necessary foreign exchange when the entity needs to transfer the funds. ("Iran's ", 2002)

3.8.2 FIPPA Amendments

On April 2010 amendments were made to FIPPA that relaxed many of the limitations introduced therein. An example of the ease that was provided by the new amendments was the increase of the maximum amount of share ownership from 10 percent to 20 percent. Foreign entities could also get involved in the management of the corporation. In addition, funds transferred into Iran could be transferred back any time and the Iran Central Bank would guarantee to provide the necessary funds to do so. The range of investment has also been broadening allowing foreign entities to invest in a variety of investment sectors. (Geological Survey of Iran, 2004)

3.9 An Analysis of International Diversification Risk Factors for Potential Foreign Investors in TSE

Iran's geographical location in the Middle East has brought along several unique considerations when it comes to investments. Its dependable economy on oil has poised several threats as well as the merits that it usually brings. It can be argued that Iranian people have lost their trust in their politicians over the years of corrupted, dishonest and unlawful periods of governance. It would be extremely important for any foreign investor to get a solid insight into Iran's current situation in terms of the risks involved in the investment.

3.9.1 Currency Exchange Risk in Iran

The US dollar exchange rate versus the Iranian rial has had a very interesting relationship in the past few years. As part of its economical regulations in the mid 1990s the Iranian government decided to interfere in its domestic currency market to keep the value of its currency, the Iranian rial, fixed in relation to most of the important currencies such as the US dollar and the GBP. The value of rial has been estimated to be far less than what the government has been trying to adjust

artificially. For example, in the 1990s each US dollar would be traded for around 8,000 Iranian rials. This number has gradually increased in the past decade or so to be presently around 10,000 rials. This is when the current value of each US dollar has been estimated to be more than 25,000 rials. The government has been successfully able to flood the market with foreign currency using the vast amount of foreign income it acquires from selling oil.

Between 1997 and 2005, while president Khatami was in office, the Iranian foreign policy was aimed towards good relations with most nations, especially with the western countries. This provided Iran with a hassle free foreign market in which it could easily sell oil to keep the currency market adjusted. It was during this period that some of Iranian-American citizens applied for loans in the form of credit from banks in the United States. The annual interest on these loans was normally set to around 3 to 4 percent. They would then convert this money to Iranian rial and invest it in Iranian banks with annual interest rates amounting to 23 or 24 percent. Since the exchange rate was kept fixed around 10,000 rials, the money would easily double in terms of US dollars in around 5 to 6 years.

However since president Ahmadinejad has taken office in 2005, the foreign policies of Iran has changed dramatically towards hostility with the western nations especially the US. Iran has been the target of several United Nations sanctions that has crippled Iran's presence in many foreign markets. Many fear that eventually these sanctions would prevent Iran from selling its oil in a proper fashion and would cut Iran from one of it vital veins of income. Although still today the exchange rate between US dollar and rial is still 10,000, many consider investing in Iranian banks to be an extremely risky endeavor. The current situation in Iran could be an example

of another type of risk involved in foreign investment. This second type of risk is called country-specific risk and is detailed in the next section.

3.9.2 Country Specific Risk in Iran

Like many other countries in the Middle East, Iran's political structure has, throughout most of its history, been summarized by an elite ruling party holding most of the political, financial and military power. The 1979 revolution promised to solve all that however it created its own set of problems and complications. The system faced serious trouble during the 2009 presidential elections and the following protests which crippled the country for a few following months. In the eyes of many, Iran's political structure is shifting sides by eliminating groups that are opposed to the current situation.

Many believe that the United States played a key part in providing directions and fueling the opposition parties in Iran. Because of its unique position with respect to Israel and the United States, Iran has always been the target of several political and economical restrictions. Because of these restrictions, Iran has turned to countries like China and India. China's huge thirst for cheap oil together with Iran's need of a veto power at the United Nations Security Council have made these two countries very close economical partners. This has made the matters more complicated and the future turnout of events is unknown to the naked eye. Studying the current country specific risks in Iran needs a more thorough investigation which would be outside the scope of this document.

3.10 The Subprime Mortgage Crisis

Subprime lending refers to high risk loans that are issued to borrowers who may not be able to return the loan. Although there is no single definition of an eligible borrower, subprime borrowers usually have a poor credit rating and may not be able

to make regular payments towards their loan. Therefore, the probability of defaulting on the loan is much higher. Subprime lending can be in the form of loans that are issued to finance real estate or automobiles, or they can be in the form of credit cards issued to clients with poor credit ratings.

The easy credit conditions created during the years prior to 2006 motivated more US households to obtain low interest mortgages to finance houses with appreciating prices. According to statistics, homeownership rate increased from 64% in 1994 to 69.2% in 2004. However, many US households may not have been eligible for a loan to buy the property they were seeking, therefore, banks and other financial institutions turned to subprime lending to provide this group of borrowers with the cash they needed. ("Subprime-Mortgage-Crisis ", 2011)

Subprime loans provided an easy way for a larger division of US households to attempt to buy real estate property. This ease of acquisition fueled the demand side of the housing market. In response to this demand, local and foreign investors shifted their capital into this flourishing market. The availability of funds to be invested in the housing market fueled the supply side of the equation. Together, this huge demand and supply formed a positive cycle which caused the housing market boom ("Subprime-Mortgage-Crisis ", 2011). This cycle can be summarized in Figure 3.

Easy credit conditions prior to 2006
•Low interest rates
•Easy initial grace periods
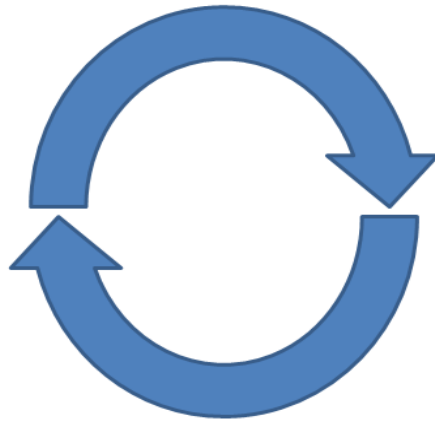
Boom in the housing market
•Investors investing in the booming real estate market
•Large inflows of foreign funds

Figure 3: The Boom Cycle of the Housing Market

Source: Author

As can be seen in Figure 3, the more easily loans were granted, the more investors were ready to invest in the market to provide the market with the number of houses it required.

On one hand, the more house prices appreciated, the more the owners were willing to refinance their loans in order to extract the equity that had been accumulated in their property. Some of these home owners would even get second loans to refinance another property. The general belief was that the property price would not decline drastically ("Subprime-Mortgage-Crisis ", 2011).

On the other hand, as investors were building more houses, the house prices started to peak in mid 2006. By this time, the house prices started their gradual decline. As house prices began to fall, refinancing the loans became more and more difficult since there was not enough equity left in the property. By this time many loan borrowers were not able to pay back their mortgages since they were not

qualified for the loan they possessed in the first place. This caused the foreclosure rate of properties to rise significantly. Even the loan borrowers that could pay the mortgage found themselves in a situation where they owed the bank more than the actual price of the house. This latter group of mortgage holders entered what is called a strategic default by which they would deliberately surrender the property to the bank. The rate of mortgage delinquency or foreclosure rose to 9.2 percent of all U.S. mortgages by August 2008 (SHACHMUROVE, 2011).This situation created a negative cycled which can be summarized in the following Figure:

Easy refinancing of subprime loans
•The inability to pay back the loan once the initial grace period expired
•Taking out second loans therefore depleting the equity of the property

Large numbers of strategic foreclosures
•Foreclosed property would enter the market at below specified price

Excessive investing in the real estate market
•House prices started to decline as a surplus in the market was created

Figure 4: The Bust of the Housing Market

Source: Author

Chapter 4

DATA, METHODOLOGY AND RESULTS

The 2007 financial crisis is believed by many economical experts to be far worse than the 1930Great Depression in the United States. The crisis has been speculated to have left far deeper impacts not only in the United States but also in other parts of the globe. Beginning in the United States, the crisis has effectively spread itself across the economies of many countries and regions, impacting even the smallest most unrelated financial systems.

The chapter starts by investigating the nature and causes of the 2007 financial crisis. It then continues by taking a closer look at the behavior of Iran's economy in general. The goal is to investigate Iran's economical behavior to the crisis and its relationship with the economies of a selected set of developed and emerging markets. The approach in this chapter is to use the correlation matrix between Iran's main stock exchange with each of the other country's main stock exchange indexes before, during and after the 2007 financial crisis. Using the correlation matrix approach, a conclusion can be made as to whether investment options in Iran are still beneficial with respect to international diversification.

4.1 Empirical analysis

Many financial experts have tried to explain the conditions that led to the subprime mortgage crisis using different theories. However, most agree that the deregulation of the financial market has played a significant role. The Gramm-Leach-Bliley Act mentioned in previous chapters has laid the basis of this

deregulation. Regardless of the causes of the crisis, its effects are of more attention at the moment. The following section examines the effect of the crisis on Iran's financial market.

Before starting with the market correlation analysis, it is important to clarify and explain the source of the data that has been used in this analysis. The correlation matrixes have been calculated using the data obtained from the official websites of the each of the specific countries' main stock exchange markets. This data represents the daily returns of investments according to the stock exchange index. Once obtained, the data has been processed in order to obtain the monthly return for each of the specified indexes. This calculation uses the returns in the first day of each month as a reference point. For example, in order to calculate the return of January the following formula has been used:

$$\text{(1)} \qquad Monthly\ Return\ of\ January = \frac{P_2 - P_1}{P_1}$$

In this formula P1 is the amount of the index on the first day of January and P2 is the amount of the index on the first day of February. Following this formula, twelve return amounts will be calculated for each year for a given country. The next step is to calculate the correlation between the monthly returns of each of the indexes with that of Iran's main index, the TSE.

Knowing the correlation between two securities has many advantages to the investor. A correlation coefficient is a value that ranges between +1 and -1. Specifically this number is a statistical representation of the relationship between the return movements of the two securities. A positive value means that the two securities' gain and loss are similar to each other. For example, if one of the

securities gains value at a specific point in time, the value of the other one also appreciates and vice versa. A negative value, signals a reverse (negative) relationship in the gains or losses of the two securities. If the value of one security appreciates at a given point in time, the value of the other one depreciates. A correlation coefficient of 0 represents a totally unrelated statistical movement. In other words, the gain or loss of one security does not necessarily reflect the gain or loss status of the other one. Upon knowing the correlation coefficients between securities, an astute investor can make wiser decisions as to how to better diversify its portfolio. By investing in securities whose correlation coefficients are negative with respect to each other, the investor can reduce the amount of unsystematic risk of the investments. (DirexionFunds, 2007) The formula that has been used in order to calculate the market returns between Iran's and the other countries is shown below:

$$(2) \qquad Correlation(X,Y) = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2 \sum(y-\bar{y})^2}}$$

This correlation has been calculated for three significant periods of time and they have been organized in different tables. These periods include before the 2007 financial crisis which includes the 2000-2006 period, during the financial crisis, which includes the 2007 period, and post financial crisis which includes from 2008 to 2009.

4.2 Before the Financial Crisis

Iran's economy has many unique characteristics that set it aside from other developed and emerging markets. Some of these characteristics are symptoms for common economical malfunctions that are created by the mistreatment of the

economy for several decades. Although governments have tried to correct the path, lots of works still needs to be done. (Financial crisis, 2008)

Firstly, Iran's economy is largely controlled by the government. Many strategic products are produced by institutions that get their funding from the government. Although Iran has tried to ease the burden of the government by privatizing many of its industries through different channels such as its stock exchange market, many of the policies have not been successful. Many industries have been acquired by semi private companies that are still funded by the government one way or the other. Many economical policies that are in affect today are in fact aimed towards the government doing business in the first place. (Financial crisis, 2008)

Secondly, Iran's economy has been suffering from a chronic Dutch Disease. In other words, its vast natural oil and gas resources have been exploited for many years. This has provided Iran with a single huge channel of foreign cash flow. Iran is also dependent on foreign raw material importation in order to provide for its other strategic industries such as mining and infrastructure development. This dependency has caused Iran to adopt a fixed foreign exchange rate policy in order to be able to provide raw material at a lower price. This foreign exchange policy has not only affected the importation of raw material but has also impacted other non-strategic products as well. In effect, the low currency exchange rate has diminished the advantage of domestic manufacturing. Products that are manufactured domestically cannot compete with those that are imported to Iran at a low Dollar to Rial exchange rate. This has made Iran a very good consumer market for countries like China and India. (Financial crisis, 2008)

Table 7 demonstrates the correlation matrix between Iran's main stock index and the stock indexes of the countries that have been chosen for this study before the

financial crisis. These countries range from developed markets such as the United States and England to emerging markets such as China and Brazil.

In this study tried to choose different emerging countries from different geographical place that have direct relationship with each other specially have economies dependent on oil, gas and row material. These countries chosen from East Asia such as china, North America (Brazil), Africa (Egypt), Europe (Turkey) and from Middle East and Persian Gulf (Jordan, Kuwait, India).

According to this table, it can be observed that the correlation between the market indexes of Iran is negative with developed countries such as the United States, England and Japan. This negative correlation signals that whenever the market index of Iran is rising, the market index of these countries is falling and vice versa. This relationship signifies an international diversification opportunity for the named developed countries prior to the financial crisis. In other words, Iran could have been considered as an investment option for portfolio builders who were seeking to hedge their investment risks using international diversification.

Table 7: Correlation Matrix before the Financial Crisis in 2007

Correlation Matrix	IRAN	USA	ENGLAND	BRAZIL	RUSSIA	JAPAN	CHINA	TURKEY	INDIA	JORDAN	EGYPT	KUWAIT
IRAN	1	-	-	-	-	-	-	-	-	-	-	-
USA	-0.05	1	-	-	-	-	-	-	-	-	-	-
ENGLAND	-0.03	0.85	1	-	-	-	-	-	-	-	-	-
BRAZIL	-0.10	0.68	0.63	1	-	-	-	-	-	-	-	-
RUSSIA	0.08	0.50	0.46	0.42	1	-	-	-	-	-	-	-
JAPAN	-0.10	0.38	0.45	0.48	0.49	1	-	-	-	-	-	-
CHINA	-0.26	0.07	0.02	0.17	0.17	0.12	1	-	-	-	-	-
TURKEY	0.16	0.03	0.02	0.09	0.08	0.01	-0.08	1	-	-	-	-
INDIA	0.01	0.40	0.41	0.54	0.21	0.58	0.07	0.29	1	-	-	-
JORDAN	0.03	-0.03	-0.01	0.00	0.06	-0.01	-0.12	0.00	0.05	1	-	-
EGYPT	-0.14	0.10	0.05	0.10	0.00	0.11	0.05	0.23	0.23	0.08	1	-
KUWAIT	0.01	0.04	-0.09	-0.02	-0.04	0.05	-0.16	0.24	0.02	0.13	0.13	1

Other conclusions can also be made with respect to the data provided by Table 7. The relationship of Iran's market index with that of the so called BRIC countries is also of interest. The market index of emerging markets such as Brazil and China are in negative correlation with the market index of Iran before the 2007 financial crisis. Similar diversification opportunities would have been provided for the investors in these countries. However, countries like Russia and India are in positive correlation with Iran. This relationship can be explained through the geographical proximity of these countries with Iran as well as deep economical ties that Iran has with these two countries. This has resulted in their economies to become interdependent, therefore diminishing any possibilities of international diversification.

Iran's market index correlation with some of its other neighbors, especially the neighbors located in the Persian Gulf, is also of interest. An example of such countries is Kuwait. Not only Kuwait is Iran's close neighbor but also both countries have economies that are dependent on oil. In addition, decision making bodies such as OPEC usually work towards common economical policies that would affect both countries in the same direction. This has resulted in the market correlation between these two countries to take a positive value.

Iran's political relationship with Egypt took a downturn in 1978 during Iran's revolution. Therefore, these two countries currently do not have any economical ties together. This relationship is evident by the negative correlation relationship between the market indexes of these two countries. Although this signifies an international diversification opportunity, due to the lack of diplomatic relations, this could have been very difficult to achieve. Figure 5 depicts a chart-based representation of the data provided by Table 7.
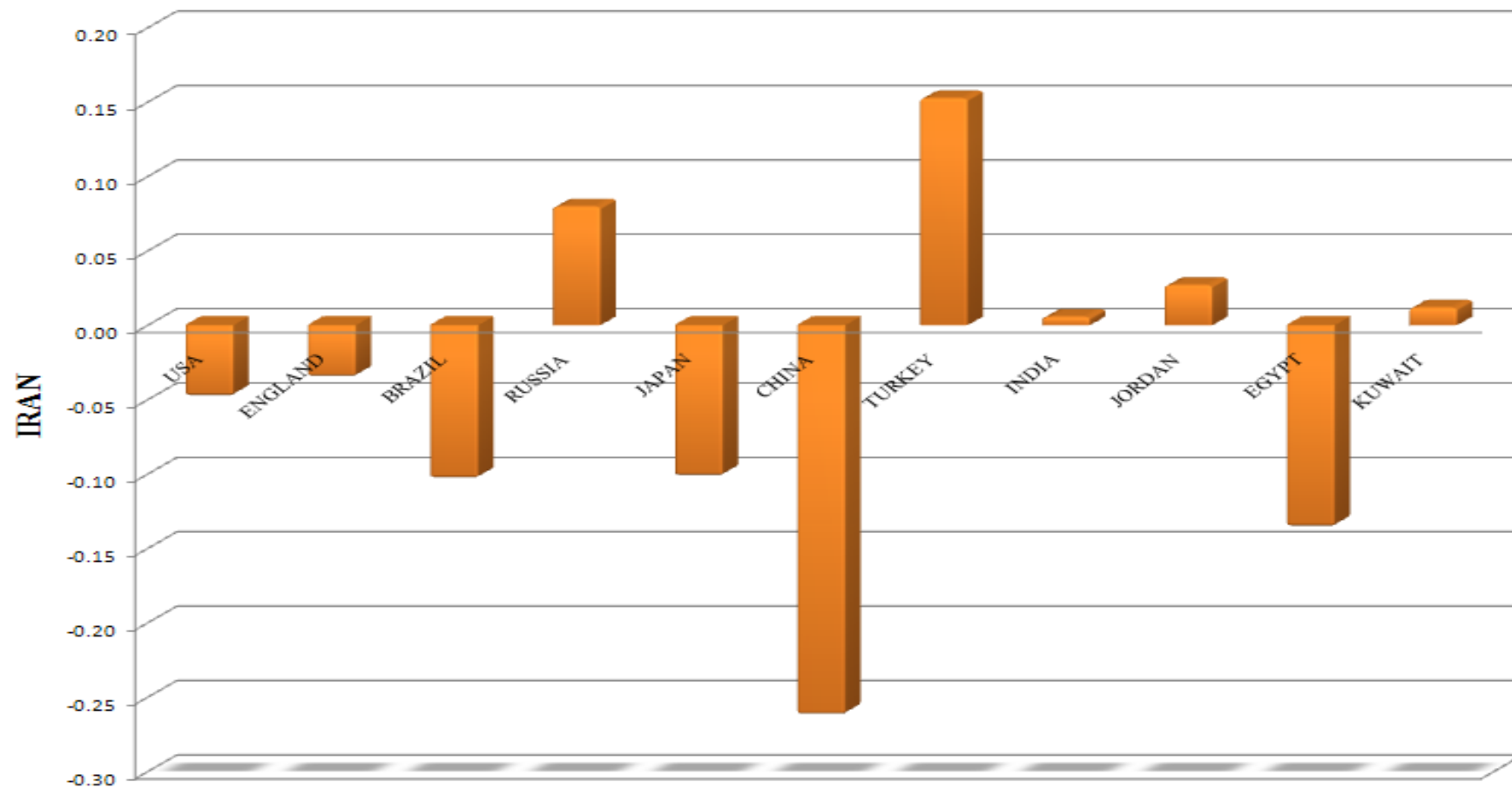
Figure 5: Return correlation of TSE with selected developed and emerging stock market before the 2007 financial crisis (2000-2006)

4.3 The Financial Crisis Year

Iran, like any other country, has got its fair share of damage from the spread of the financial crisis. The impact of the crisis on Iran's economy must be analyzed according to its functional behavior before the crisis. As it was described in the preceding section, Iran's economy has made it dependant on a huge influx of oil and gas income annually. In addition, Iran needs to spend portions of this income to import raw material to fuel its infrastructure development. The rest is spent on importing non-strategic products which reversely impact the manufacturing sector. (Financial crisis, 2008) This relationship is depicted in Figure 6:
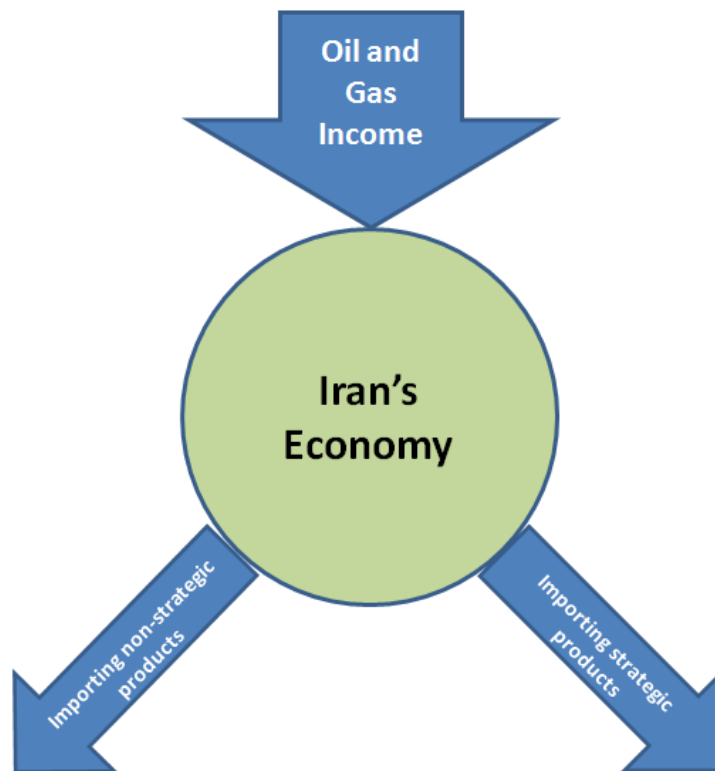
Figure 6: Iran's economy

Source: Author

During the financial crisis, the global demand for energy diminished and the prices of oil and gas plunged significantly. This event impacted the income of all the exporter countries of these raw materials. From this statement, it can be concluded that the thick input arrow to Iran's economy in Figure 6 became thinner. However, there is more than the global recession that impacts Iran's Oil and Gas income. These latter impacts, still in effect today and getting worse gradually, are the U.N. resolutions that have been issued against Iran and the following sanctions that prevent Iran from importing many strategic products. Currently, the United States is persuading China and India, two of Iran's main importers of Oil and Gas, to switch over to Saudi Arabia for their demand of energy. The reduction in energy income in addition to the inability to import strategic products have puts its toll on many of Iran's large companies that are active in Iran's infrastructure development. This has in turned caused Iran's market index to move in the same falling direction as other countries during the course of the financial crisis. This behavior is evident in Table 8 which arranges the market return correlation between Iran and other selected countries:

Table 8: Correlation Matrix during the financial crisis in 2007

Correlation Matrix	IRAN	USA	ENGLAND	BRAZIL	RUSSIA	JAPAN	CHINA	TURKEY	INDIA	JORDAN	EGYPT	KUWAIT
IRAN	1	-	-	-	-	-	-	-	-	-	-	-
USA	0.38	1	-	-	-	-	-	-	-	-	-	-
ENGLAND	0.30	0.88	1	-	-	-	-	-	-	-	-	-
BRAZIL	0.40	0.91	0.90	1	-	-	-	-	-	-	-	-
RUSSIA	0.15	0.32	0.59	0.56	1	-	-	-	-	-	-	-
JAPAN	0.07	0.74	0.88	0.80	0.54	1	-	-	-	-	-	-
CHINA	0.09	0.70	0.60	0.54	0.35	0.45	1	-	-	-	-	-
TURKEY	0.14	0.09	0.01	-0.02	-0.12	0.10	0.02	1	-	-	-	-
INDIA	0.40	0.69	0.74	0.85	0.68	0.55	0.53	-0.12	1	-	-	-
JORDAN	0.11	-0.71	-0.50	-0.64	-0.11	-0.49	-0.65	-0.05	-0.51	1	-	-
EGYPT	0.20	-0.21	-0.14	-0.14	-0.22	-0.42	-0.34	0.24	0.01	0.27	1	-
KUWAIT	0.15	0.08	-0.02	0.26	-0.04	0.09	0.07	-0.06	0.04	-0.44	0.00	1

As can be seen in Table 8, the market correlation index between Iran and all the other markets is positive which signifies a positive relationship. It can be concluded that during the course of the financial crisis, the opportunities for international diversification have been greatly reduced also calculation in this table shows the high level of correlation between the developed countries such as the US and England it can be concluded that in the period of financial crisis because of the enormous amount of trading between these countries and reduce the international creditability it cause that all characteristic of these market are the same as each other it means that when the correlation in one market appreciated the other market also appreciate and depend on the international diversification rule no opportunity to more investment in the developed countries.

Figure 7 depicts a chart-based representation of the data provided by Table 8.
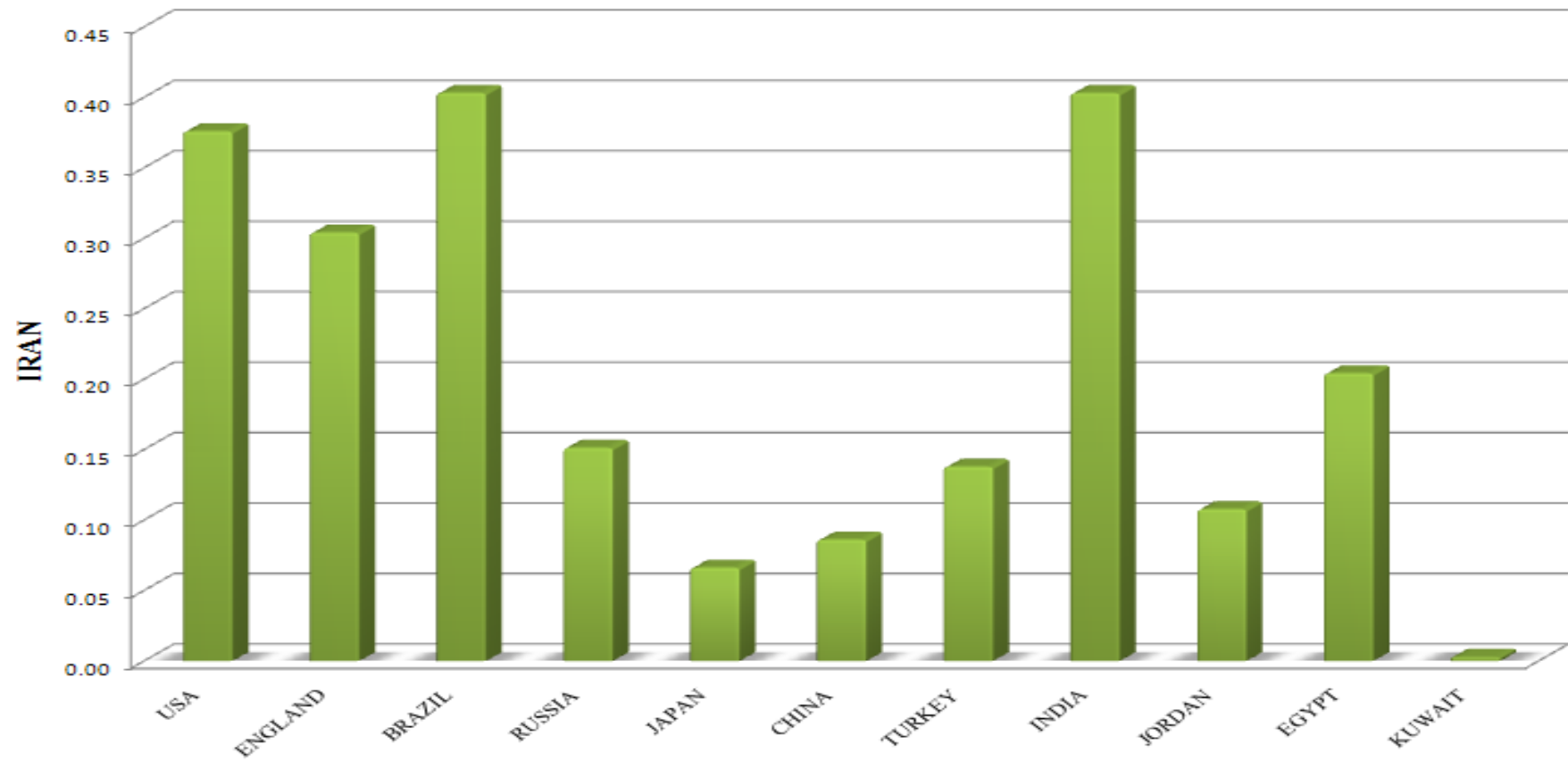
Figure 7: During the financial crisis in 2007

4.4 Post Financial Crisis

The financial crisis is not over yet. It is present and still leaving its scars on the face of the global economy. The European Union Countries are facing harder challenges. European countries whose economy is largely dependent on tourism are having difficulty paying their debt. Examples of such countries include Greece, and Spain. These countries ought to take austerity measures in order to be able to close their budget deficit. Politicians are constantly seeking a way out of this seemingly dead end situation. The United States, one of the largest debtor nations in the world, could only recently reach a political agreement in order to cut spending in order to be able to handle its amazingly enormous amount of debt. Despite this agreement, many speculate that this spending cut would put pressure on future economical growth. (Financial crisis, 2008)

Iran, like many other countries, has started to operate a set a reforms on its economy. For many years, Iranians were blessed with cheap energy carriers such as gas, electricity and fuel. This was because the government was paying for a large portion of such expenses. Recently, the government has passed rules in order to organize and actualize the prices of such energy carriers. This has caused people to pay more for their usage. However it has provided the government with an enormous cash influx that it can use to develop its infrastructure. As oil prices have recovered from their drastic fall in the beginning of the crisis, it can be concluded that Iran's economy may have found a way out. However, the recovery period will definitely not be short, considering the constant political turmoil that are raised due to Iran-US stormy political relationship and Iran's radical standpoint on the subject of nuclear energy. (Financial crisis, 2008)

Table 9 represents the market correlation between Iran and the other countries in the set. It can be concluded that as time passes from the financial crisis, Iran's correlation with countries such as England, China and Japan turns to negative signaling international diversification opportunities.

It is interesting to see that the high level of positive correlation between Iran, Kuwait and Jordan. One of the reasons can be good relationship and control the USA government's in the Middle East region specially Kuwait and Jordan and try to import and export of the commodity, oil, gas and raw material from Iran by these countries also Iran and Kuwait both are members of the OPEC it means that some of the investment policies are the same as each other like amount and price of the oil exporting from these countries.

According to the data provided in Table 9, the countries whose market correlation index in negative with respect to that of Iran's can benefit from investing in Iran in order to hedge the investments they make in their own countries. Iran can also benefit from this investment. However Iran has a long way to go in order to be able to achieve the specified investments.

Figure 8 depicts a chart-based representation of the data provided by Table 9.

Table 9: Correlation Matrix after the 2007 financial crisis

Correlation Matrix	IRAN	USA	ENGLAND	BRAZIL	RUSSIA	JAPAN	CHINA	TURKEY	INDIA	JORDAN	EGYPT	KUWAIT
IRAN	1	-	-	-	-	-	-	-	-	-	-	-
USA	0.13	1	-	-	-	-	-	-	-	-	-	-
ENGLAND	-0.01	0.88	1	-	-	-	-	-	-	-	-	-
BRAZIL	0.04	0.77	0.76	1	-	-	-	-	-	-	-	-
RUSSIA	0.03	0.75	0.66	0.85	1	-	-	-	-	-	-	-
JAPAN	-0.06	0.83	0.79	0.81	0.74	1	-	-	-	-	-	-
CHINA	-0.02	0.39	0.28	0.58	0.37	0.55	1	-	-	-	-	-
TURKEY	0.09	0.38	0.32	0.25	0.27	0.17	-0.02	1	-	-	-	-
INDIA	0.05	0.81	0.76	0.81	0.72	0.79	0.60	0.38	1	-	-	-
JORDAN	0.68	0.26	0.03	0.13	0.36	0.12	-0.17	0.21	0.13	1	-	-
EGYPT	0.12	0.51	0.33	0.56	0.52	0.36	0.18	0.63	0.50	0.55	1	-
KUWAIT	0.78	0.43	0.16	0.17	0.51	0.23	-0.29	0.03	0.17	0.86	0.42	1

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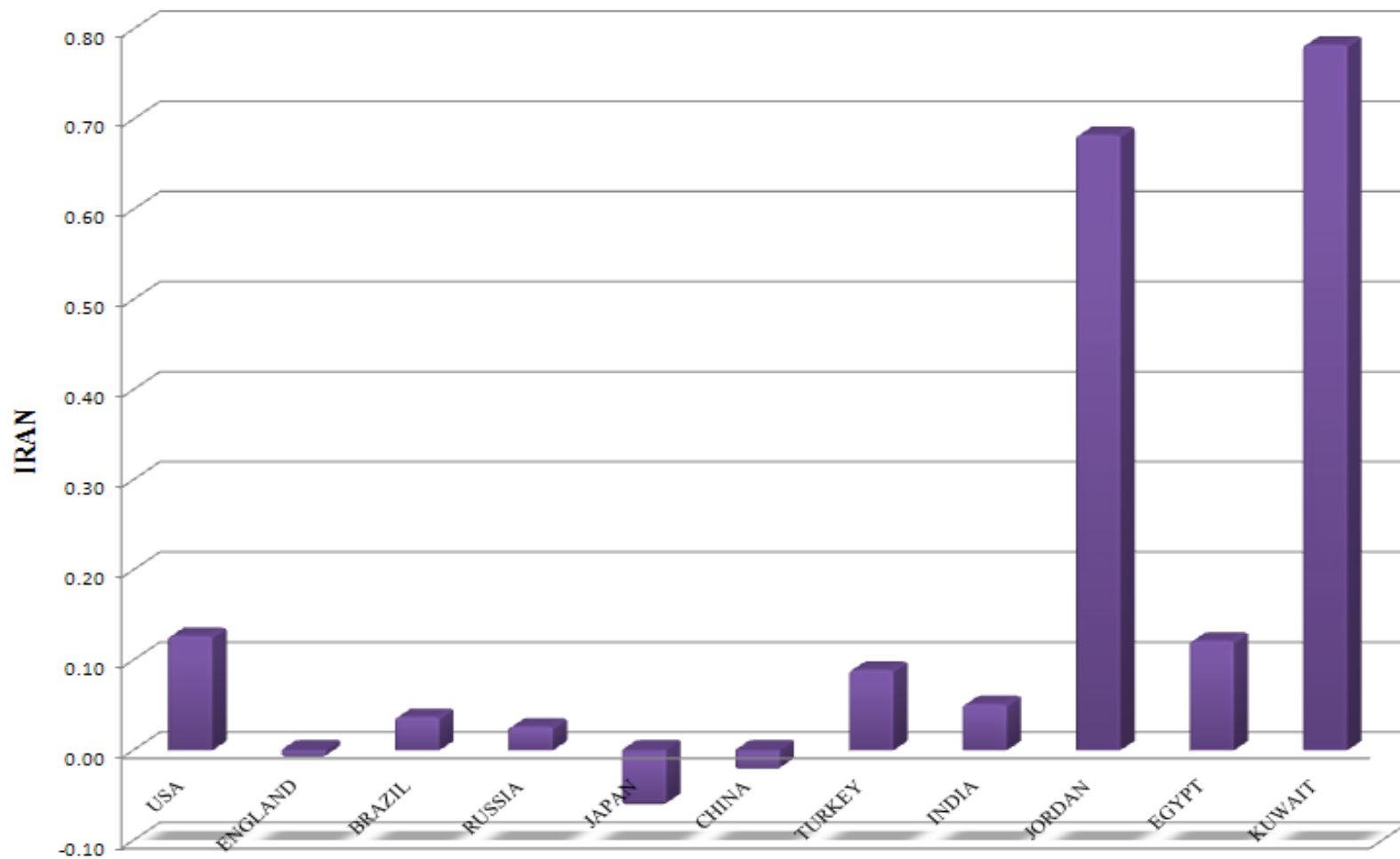
Figure 8: Correlation after 2007 financial crisis

Table 10: Correlation Matrix for all periods: A summary table

Correlation Matrix	Country	USA	ENGLAND	BRAZIL	RUSSIA	JAPAN	CHINA	TURKEY	INDIA	JORDAN	EGYPT	KUWAIT
Before crisis (2000-2006)	IRAN	-0.05	-0.03	-0.10	0.08	-0.10	-0.26	0.15	0.01	0.03	-0.14	0.01
During Crisis (2007)		0.38	0.30	0.40	0.15	0.07	0.09	0.14	0.40	0.11	0.20	0.00
After 2007		0.13	-0.01	0.04	0.03	-0.06	-0.02	0.09	0.05	0.68	0.12	0.78
whole period		-0.02	-0.02	-0.08	0.07	0.01	-0.17	0.14	0.01	0.03	-0.10	0.04

As can be seen in Table 10 correlation matrix for all period depicted that a summary of all correlation matrix before, during and after financial crisis between Iran and chosen specific countries also shows the whole period of the chosen timeline (2000-2009). Whole period correlation matrix depicted that most of the correlation between these countries are negative it conclude that, in whole period of time investment in Iran can be beneficial for the developed and emerging countries such as USA, England, Brazil, China and also Egypt because after 1978 Iran's revelation the Iran's government cut all the relation specially trading from Egypt so this is good opportunities to make an investment one more time and it can be beneficial for both countries.

Chapter 5

CONCLUSION

As it was seen in chapter four of this thesis, Iran's economical interaction with the global economy is summarized to the exportation of oil and importation of products. With regards to this economical structure, it would have been safe to say that the financial crisis of 2007 would have not affected Iran's economy greatly. However more detailed investigations proved this statement to be flawed at several levels. This final chapter tries to put all the pieces together to derive a solid conclusion.

5.1 Iran and the Financial Crisis

Although the crisis has not have a direct impact, like the impact that it had on several economical regions such as East Asia, Europe and North America, Iran has also been indirectly affected. The financial resources have become limited as a result of declining oil prices. As a result of this limitation, many major companies have reported diminished profit margins, reducing the attraction of investment in Iran's stock market. This has in turn affected the domestic economy therefore increasing unemployment rates. The financial reforms that have been coincided with the crisis have also cause inflation to rise.

The effect of the crisis on Iran's economy could also be observed from Iran's market correlation matrix with that of many major developed economies. As it was seen, the impact of the crisis has caused Iran's market to reach a positive correlation with the market indexes of the most involved countries. It is at this point in time that

the benefits of international diversification have been minimized both in Iran and in the rest of the world.

Almost all major economical center points have tried to respond to the crisis one way or another. One of the most evident signs of this struggle is to provide stimulus packages by governments to rescue the most important parts of the economy. Austerity measures have been taken into effect to cut expenses which in turn would help the economy to pay off its debts. Some of these austerity packages have been causes of several social revolts and uprisings. By studying the correlation matrix of the indexes during the periods after the epicenter of the crisis, it was observed that the market correlation between Iran and some of the economies such as Japan and England is starting to take a negative downturn. Although this change of direction does not necessarily mean that the crisis is over, it signifies international diversification opportunities that could be achieved by the most involved countries in order to be able to hedge their investment risks by internationally investing in Iran.

Despite the opportunities that have been provided, Iran needs to perform several reforms in order to be able to successfully absorb international funds. The sections below try to provide recommendations with respect to the reforms that need to be taken place.

5.2 Policy Recommendations

5.2.1 Foreign Investment and Foreign Policy

During the financial crisis, many investors who were investing in the markets of developed countries faced significant losses in a relatively short period of time. Austerity measures taken in order to overcome the crisis have caused many developed governments to cut on their expenses. This situation has resulted in tight

credit conditions in which future economical growth will be slower. Altogether, developed economies are finding their way out of the crisis a dark and blurry one.

These drastic investments conditions have caused many Investors to gradually shift their capitals out of the danger zones. These wandering capitals are constantly seeking alternate markets to land in. Iran could potentially become the destination of these capitals for investment. However there are several preconditions that must be met before the above statement can turn into reality.

First and foremost, Iran needs to successfully define foreign investment policies that would eventually ease the investment conditions for foreign investors. Iran has passed the Foreign Investment Promotion and Protection Act in 2001. This act, although insufficient, provides the baseline for these regulation requirements. Iran has made amendments to the act in 2010. These amendments have greatly simplified the investment process and have provided the foreign investor with many additional benefits. The investment shares in Iranian companies have been increased significantly and the conditions under which funds could be brought in and out of the country have been greatly moderated.

Although Iran might have provided the conditions that it needs in order to absorb foreign funds, there are still problematic situations that might not be solved domestically. These preconditions have international roots and need to be solved on a global level. Iran's hard standpoint with regards to its peaceful nuclear enrichment program has worried western countries and has provided the means for several U.N. sanctions against it. These sanctions have successfully worked towards the isolation of this potential economical partner. In addition, its radical political direction with regards to Israel and the United States has caused economical markets to be closed for its operation even without any sanctions involved. Not only many companies

have been prohibited from investing in Iran, but also Iran cannot import many of the strategic products that it needs in order to develop its infrastructure. Iran is currently providing the oil for two of the world's fastest growing economies. The sanctions that are in place make it extremely difficult for Iran to receive its payment from such countries as China and India. So basically Iran is currently selling oil, without any significant payments and has opted for importing consumer goods in exchange. The United States is on a constant pursuit to isolate Iran further. With its Persian Gulf allies such as Kuwait and Saudi Arabia, the United States can easily cut Iran's oil export to China and India with the promise of providing the needed fuel from other markets.

In order to be able to absorb international investments, Iran needs to sort out the political tensions that have mainly halted international relations with this country. If by adapting sound political and economical reforms, Iran could absorb foreign investments, it could provide a flourishing economy in which many strategic and infrastructural benefits may be viable.

5.2.2 The Iranian Oil Bourse

In 2008, Iran officially reported the opening of the Iranian Oil Bourse. This international oil bourse is located in the Persian Gulf free trade zone Island of Kish. IOB's intention is to provide a bourse of petroleum, petrochemicals and gas. Unlike the other major oil bourses, such as NYMEX and ICE, which are denominated by the U.S. Dollar, the Iranian Oil Bourse is based on the Euro and the Iranian Rial and a set of other major currencies. Although still in its initial phases of operation, Iran is hopeful that it can someday turn the IOB into a "Caspian Crude" benchmark similar to that of Brent Crude.

Investment channels such as the IOB could provide Iran with significant foreign investment opportunities. The funds obtained through this channel can be injected directly into Iran's infrastructure development. The development of the infrastructure would later provide Iran with a flourishing economy. However the international causes that were discussed in the preceding section are still considered being preventative.

5.2.3 Providing Domestic Economical Stimulus

Although stimulating an economy solely based on oil would seem easy, thanks to huge amounts of oil income, doing so at the time of crisis would prove to be extremely difficult. As stated before, Iran has taken its fair share of the financial crisis and its ill managed domestic economy has not only been impacted by the crisis but has also shown symptoms of the several years of mismanagement as well. Like many other countries, Iran now needs to take measures to roll the wheels of its domestic economy.

One way to achieve this is to provide stimulus for the real estate market. Iran's youth, which includes a huge portion of the population, are constantly in pursuit of housing. The real estate market provides a value added industry which also has the potential to stimulate several other sectors of the economy by providing demands in such construction materials as steel and cement. This cycle could result in jobs being created reducing the unemployment rate of the country. From this perspective, providing economical support for the real estate market seems pivotal. This economical support could be in the form of providing credits for investments in the market, easing investment conditions by passing regulations, promoting mass residential complexes and absorbing foreign investments in the housing market.

Another method of achieving overall economical growth is to provide stimulus packages to companies which have registered in the stock exchange market, in order for them to be able to complete the projects that have otherwise been left unfinished. Several of these projects are related to infrastructure development which if completed could be very beneficial for the economy as a whole. In addition, by completing these projects the companies' values would start to rise in the stock market providing investment opportunities for domestic and foreign investors. However a careful study and research needs to be done in order to be able to correctly detect the unfinished projects that would be effective if completed.

5.3 Final Conclusion

It can be concluded that now would be a good time for Iran to take advantage of the opportunities that have been provided with respect to international diversification. There have been efforts in Iran to pass regulations that support foreign investments. These regulations have been revised recently to provide a larger share for international investors and also ease the grounds for foreign fund flows. However more work needs to be done on foreign policy and infrastructure development in order to be successful at several grounds when trying to absorb foreign investments.

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APPENDIX

Iran-US																			
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	US	IR	US	IR	US	IR	US	IR	US	IR	US	IR	US	IR	US	IR	US	IR	US
Jan	0.0307	0.0201	0.0097	0.0923	0.0308	0.0208	0.0451	0.017	0.0095	0.0122	0.2776	0.0189	0.0181	0.0005	0.0073	0.0218	0.0581	0.0348	0.0185	0.1099
Feb	0.0474	0.0967	0.037	0.0642	0.0049	0.0367	0.0286	0.0084	0.019	0.0164	0.0489	0.0191	0.0174	0.0111	0.0046	0.01	0.0396	0.006	0.0304	0.0854
Mar	0.0344	0.0308	0.0102	0.0768	0.0245	0.0614	0.001	0.081	0.0601	0.0168	0.0208	0.0201	0.0378	0.0122	0.0058	0.0433	0.0204	0.0475	0.0308	0.0939
Apr	0.0331	0.0219	0.0575	0.0051	0.084	0.0091	0.0852	0.0509	0.0024	0.0121	0.0441	0.03	0.0022	0.0309	0.0107	0.0325	0.0069	0.0107	0.0666	0.0531
May	0.042	0.0239	0.0603	0.025	0.0215	0.0725	0.1148	0.0113	0.0149	0.018	0.0102	0.0001	-	0.0001	0.048	0.0178	0.0618	0.086	0.0536	0.0002
Jun	0.0083	0.0163	0.0056	0.0107	0.0381	0.079	0.1307	0.0162	0.0883	0.0343	0.0201	0.036	-	0.0051	0.0224	0.032	0.0862	0.0099	0.0394	0.0741
Jul	0.0058	0.0607	0.0125	0.0641	0.0477	0.0049	0.3419	0.0179	0.0725	0.0023	0.0494	0.0112	0.0462	0.0213	0.0144	0.0129	0.0767	0.0122	0.0311	0.0336
Aug	0.0414	0.0535	0.0096	0.0817	0.0541	0.11	0.01	0.0119	0.0444	0.0094	0.0537	0.0069	0.0224	0.0246	0.0559	0.0358	0.0385	0.0908	0.1913	0.0357
Sep	0.0135	0.0049	0.0438	0.0181	0.0331	0.0864	0.0712	0.055	0.0484	0.014	0.0563	0.0177	0.0254	0.0315	0.0584	0.0148	0.0335	0.1694	1.9825	0.0136
Oct	0.0539	0.0801	0.0248	0.0752	0.0094	0.0571	0.0496	0.0071	0.0287	0.0386	0.0185	0.0352	0.0037	0.0165	0.0065	0.044	0.1206	0.0748	-	-
Nov	0.0517	0.0041	0.0144	0.0076	0.0576	0.0603	0.0516	0.0508	0.0424	0.0325	0.0168	0.001	0.0139	0.0126	0.0511	0.0086	0.0654	0.0078	-	-
Dec	0.0102	0.0346	10.659	0.0156	0.0242	0.0274	0.1036	0.0173	0.0191	0.0253	0.0008	0.0255	0.0299	0.0141	0.0045	0.0612	0.0838	0.0857	-	-

Iran-Japan																			
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	JPN	IR	JPN	IR	JPN	IR	JPN	IR	JPN	IR	JPN	IR	JPN	IR	JPN	IR	JPN	IR	JPN
Jan	0.0307	0.0215	0.0097	0.0693	0.0308	0.059	0.0451	0.0028	0.0095	0.024	0.2776	0.031	0.0181	0.0267	0.0073	0.0127	0.0581	0.0008	0.0185	0.0532
Feb	0.0474	0.0189	0.037	0.009	0.0049	0.0413	0.0286	0.0467	0.019	0.061	0.0489	0.0061	0.0174	0.0527	0.0046	0.018	0.0396	0.0792	0.0304	0.0715
Mar	0.0344	0.1162	0.0102	0.0719	0.0245	0.0424	0.001	0.0177	0.0601	0.004	0.0208	0.0566	0.0378	0.009	0.0058	0.0065	0.0204	0.1057	0.0308	0.0886
Apr	0.0331	0.0913	0.0575	0.0482	0.084	0.0236	0.0852	0.0757	0.0024	0.0447	0.0441	0.0243	0.0022	0.0851	0.0107	0.0273	0.0069	0.0353	0.0666	0.0786
May	0.042	0.066	0.0603	0.0221	0.0215	0.0971	0.1148	0.0782	0.0149	0.0554	0.0102	0.0273		0.0024	0.048	0.0147	0.0618	0.0598	0.0536	0.0458
Jun	0.0083	0.0967	0.0056	0.0855	0.0381	0.07	0.1307	0.0529	0.0883	0.045	0.0201	0.0272		0.0031	0.0224	0.049	0.0862	0.0078	0.0394	0.04
Jul	0.0058	0.0721	0.0125	0.0967	0.0477	0.0262	0.3419	0.0816	0.0725	0.0215	0.0494	0.0432	0.0462	0.0442	0.0144	0.0394	0.0767	0.0227	0.0311	0.0131
Aug	0.0414	0.0661	0.0096	0.0876	0.0541	0.0245	0.01	0.012	0.0444	0.0233	0.0537	0.0935	0.0224	0.0008	0.0559	0.0131	0.0385	0.1387	0.1913	0.0342
Sep	0.0135	0.0767	0.0438	0.0605	0.0331	0.0792	0.0712	0.0333	0.0484	0.0048	0.0563	0.0024	0.0254	0.0169	0.0584	0.0029	0.0335	0.2383	1.9825	0.0453
Oct	0.0539	0.0075	0.0248	0.0319	0.0094	0.0666	0.0496	0.0435	0.0287	0.0119	0.0185	0.093	0.0037	0.0076	0.0065	0.0631	0.1206	0.0075		
Nov	0.0517	0.0589	0.0144	0.0145	0.0576	0.0691	0.0516	0.057	0.0424	0.0541	0.0168	0.0833	0.0139	0.0585	0.0511	0.0238	0.0654	0.0408		
Dec	0.0102	0.0042	10.659	0.0517	0.0242	0.0279	0.1036	0.01	0.0191	0.0088	0.0008	0.0334	0.0299	0.0091	0.0045	0.1121	0.0838	0.0977		

Iran-England	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	ENG	IR	ENG	IR	ENG	IR	ENG	IR	ENG	IR	ENG	IR	ENG	IR	ENG	IR	ENG	IR	ENG
Jan	0.0307	0.0057	0.0097	0.0603	0.0308	0.0124	0.0451	0.0247	0.0095	0.0231	0.2776	0.0239	0.0181	0.0054	0.0073	0.0051	0.0581	0.0008	0.0185	0.077
Feb	0.0474	0.0494	0.037	0.048	0.0049	0.0335	0.0286	0.0116	0.019	0.0237	0.0489	0.0149	0.0174	0.0299	0.0046	0.0221	0.0396	0.031	0.0304	0.0251
Mar	0.0344	0.0325	0.0102	0.0591	0.0245	0.0201	0.001	0.0865	0.0601	0.0237	0.0208	0.0189	0.0378	0.0098	0.0058	0.0224	0.0204	0.0676	0.0308	0.0809
Apr	0.0331	0.005	0.0575	0.0286	0.084	0.0156	0.0852	0.0311	0.0024	0.0131	0.0441	0.0338	0.0022	0.0497	0.0107	0.0267	0.0069	0.0056	0.0666	0.041
May	0.042	0.0073	0.0603	0.0265	0.0215	0.0843	0.1148	0.0042	0.0149	0.0075	0.0102	0.0301		0.0191	0.048	0.002	0.0618	0.0706	0.0536	0.0382
Jun	0.0083	0.0083	0.0056	0.0201	0.0381	0.0881	0.1307	0.0312	0.0883	0.0114	0.0201	0.0331		0.0163	0.0224	0.0375	0.0862	0.038	0.0394	0.0845
Jul	0.0058	0.0483	0.0125	0.0333	0.0477	0.0045	0.3419	0.001	0.0725	0.0105	0.0494	0.0028	0.0462	0.0037	0.0144	0.0089	0.0767	0.0415	0.0311	0.0652
Aug	0.0414	0.0567	0.0096	0.0826	0.0541	0.1196	0.01	0.0168	0.0444	0.025	0.0537	0.0341	0.0224	0.0093	0.0559	0.0259	0.0385	0.1302	0.1913	0.0458
Sep	0.0135	0.0229	0.0438	0.0278	0.0331	0.0854	0.0712	0.048	0.0484	0.0117	0.0563	0.0293	0.0254	0.0283	0.0584	0.0394	0.0335	0.1071	1.9825	0.0213
Oct	0.0539	0.046	0.0248	0.0325	0.0094	0.0321	0.0496	0.0128	0.0287	0.0171	0.0185	0.0199	0.0037	0.0131	0.0065	0.043	0.1206	0.0204		
Nov	0.0517	0.0131	0.0144	0.0027	0.0576	0.0549	0.0516	0.0309	0.0424	0.0236	0.0168	0.0361	0.0139	0.0284	0.0511	0.0038	0.0654	0.0341		
Dec	0.0102	0.0121	10.659	0.0101	0.0242	0.0947	0.1036	0.0193	0.0191	0.0079	0.0008	0.0252	0.0299	0.0028	0.0045	0.0894	0.0838	0.0642		

Iran-Brazil																				
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	BRZ	IR	BRZ	IR	BRZ	IR	BRZ	IR	BRZ	IR	BRZ	IR	BRZ	IR	BRZ	IR	BRZ	IR	BRZ
Jan	0.031	0.078	0.01	0.101	0.031	0.103	0.045	0.06	0.01	0.004	0.278	0.156	0.018	0.006	0.007	0.017	0.058	0.067	0.019	0.028
Feb	0.047	0.009	0.037	0.091	0.005	0.055	0.029	0.097	0.019	0.018	0.049	0.054	0.017	0.017	0.005	0.044	0.04	0.04	0.03	0.072
Mar	0.034	0.128	0.01	0.033	0.025	0.013	0.001	0.114	0.06	0.115	0.021	0.066	0.038	0.064	0.006	0.069	0.02	0.113	0.031	0.156
Apr	0.033	0.037	0.058	0.018	0.084	0.017	0.085	0.069	0.002	0.003	0.044	0.015	0.002	0.095	0.011	0.068	0.007	0.07	0.067	0.125
May	0.042	0.118	0.06	0.006	0.022	0.134	0.115	0.034	0.015	0.082	0.01	0.006		0.003	0.048	0.041	0.062	0.104	0.054	0.033
Jun	0.008	0.016	0.006	0.055	0.038	0.124	0.131	0.046	0.088	0.056	0.02	0.04		0.012	0.022	0.004	0.086	0.085	0.039	0.064
Jul	0.006	0.054	0.013	0.066	0.048	0.063	0.342	0.118	0.073	0.021	0.049	0.077	0.046	0.023	0.014	0.008	0.077	0.064	0.031	0.032
Aug	0.041	0.082	0.01	0.172	0.054	0.169	0.01	0.055	0.044	0.019	0.054	0.126	0.022	0.006	0.056	0.107	0.039	0.11	0.191	0.089
Sep	0.014	0.067	0.044	0.069	0.033	0.179	0.071	0.123	0.048	0.008	0.056	0.044	0.025	0.077	0.058	0.08	0.034	0.248	1.983	0.014
Oct	0.054	0.106	0.025	0.138	0.009	0.034	0.05	0.123	0.029	0.09	0.019	0.057	0.004	0.068	0.007	0.035	0.121	0.018		
Nov	0.052	0.148	0.014	0.05	0.058	0.072	0.052	0.102	0.042	0.043	0.017	0.048	0.014	0.061	0.051	0.014	0.065	0.026		
Dec	0.01	0.158	10.66	0.063	0.024	0.029	0.104	0.017	0.019	0.07	8E-04	0.147	0.03	0.004	0.005	0.069	0.084	0.047		

Iran-China																				
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	CHN	IR	CHN	IR	CHN	IR	CHN	IR	CHN	IR	CHN	IR	CHN	IR	CHN	IR	CHN	IR	CHN
Jan	0.0307	0.117	0.0097	0.0515	0.0308	0.0917	0.0451	0.0081	0.0095	0.053	0.2776	0.0958	0.0181	0.0326	0.0073	0.034	0.0581	0.008	0.0185	0.0463
Feb	0.0474	0.05	0.037	0.0784	0.0049	0.052	0.0286	0.0009	0.019	0.0397	0.0489	0.0955	0.0174	0.0006	0.0046	0.1051	0.0396	0.2014	0.0304	0.1394
Mar	0.0344	0.02	0.0102	0.003	0.0245	0.0398	0.001	0.0072	0.0601	0.0838	0.0208	0.0187	0.0378	0.1093	0.0058	0.2064	0.0204	0.0635	0.0308	0.044
Apr	0.0331	0.0317	0.0575	0.0449	0.084	0.0912	0.0852	0.036	0.0024	0.0249	0.0441	0.0849	0.0022	0.1396	0.0107	0.0699	0.0069	0.0703	0.0666	0.0627
May	0.042	0.0177	0.0603	0.0017	0.0215	0.1432	0.1148	0.0572	0.0149	0.1007	0.0102	0.019		0.0188	0.048	0.0703	0.0618	0.2031	0.0536	0.124
Jun	0.0083	0.0495	0.0056	0.1342	0.0381	0.0468	0.1307	0.0062	0.0883	0.0093	0.0201	0.0019		0.0356	0.0224	0.1702	0.0862	0.0145	0.0394	0.153
Jul	0.0058	0.0012	0.0125	0.0449	0.0477	0.0091	0.3419	0.0371	0.0725	0.0318	0.0494	0.0737	0.0462	0.0285	0.0144	0.1673	0.0767	0.1363	0.0311	0.2181
Aug	0.0414	0.0549	0.0096	0.0377	0.0541	0.051	0.01	0.0386	0.0444	0.0407	0.0537	0.0062	0.0224	0.0565	0.0559	0.0639	0.0385	0.0432	0.1913	0.0419
Sep	0.0135	0.0268	0.0438	0.0429	0.0331	0.0469	0.0712	0.0138	0.0484	0.0545	0.0563	0.0543	0.0254	0.0488	0.0584	0.0725	0.0335	0.2463	1.9825	
Oct	0.0539	0.0557	0.0248	0.0348	0.0094	0.0486	0.0496	0.0363	0.0287	0.0153	0.0185	0.0059	0.0037	0.1422	0.0065	0.1819	0.1206	0.0824		
Nov	0.0517	0.0014	0.0144	0.0584	0.0576	0.0534	0.0516	0.0714	0.0424	0.0554	0.0168	0.0562	0.0139	0.2745	0.0511	0.08	0.0654	0.0269		
Dec	0.0102	0.0038	10.659	0.1515	0.0242	0.1047	0.1036	0.0626	0.0191	0.059	0.0008	0.0835	0.0299	0.0414	0.0045	0.1669	0.0838	0.0933		

Iran-Russia																			
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	RUS	IR	RUS	IR	RUS	IR	RUS	IR	RUS	IR	RUS	IR	RUS	IR	RUS	IR	RUS	IR	RUS
Jan	0.0307	0.008	0.0097	0.0505	0.0308	0.0112	0.0451	0.109	0.0095	0.0966	0.2776	0.1243	0.0181	0.1045	0.0073	0.0083	0.0581	0.0823	0.0185	0.0178
Feb	0.0474	0.3566	0.037	0.0285	0.0049	0.2064	0.0286	0.0598	0.019	0.1231	0.0489	0.0661	0.0174	0.0127	0.0046	0.0418	0.0396	0.0048	0.0304	0.2664
Mar	0.0344	0.0216	0.0102	0.0662	0.0245	0.1008	0.001	0.1722	0.0601	0.1615	0.0208	0.0019	0.0378	0.1549	0.0058	0.0001	0.0204	0.0334	0.0308	0.2077
Apr	0.0331	0.1616	0.0575	0.1556	0.084	0.0134	0.0852	0.1059	0.0024	0.0793	0.0441	0.0061	0.0022	0.1183	0.0107	0.0802	0.0069	0.159	0.0666	0.3058
May	0.042	0.0989	0.0603	0.035	0.0215	0.0958	0.1148	0.0779	0.0149	0.0039	0.0102	0.0474		0.0229	0.048	0.0659	0.0618	0.0636	0.0536	0.0925
Jun	0.0083	0.1324	0.0056	0.0925	0.0381	0.0779	0.1307	0.0923	0.0883	0.0738	0.0201	0.1027		0.0378	0.0224	0.0507	0.0862	0.1462	0.0394	0.0309
Jul	0.0058	0.2365	0.0125	0.0474	0.0477	0.0204	0.3419	0.1617	0.0725	0.0821	0.0494	0.1324	0.0462	0.0487	0.0144	0.0371	0.0767	0.163	0.0311	0.0482
Aug	0.0414	0.1705	0.0096	0.1225	0.0541	0.0035	0.01	0.0672	0.0444	0.0804	0.0537	0.1425	0.0224	0.0472	0.0559	0.0791	0.0385	0.2638	0.1913	0.1763
Sep	0.0135	0.0506	0.0438	0.132	0.0331	0.0736	0.0712	0.1068	0.0484	0.0507	0.0563	0.0722	0.0254	0.041	0.0584	0.073	0.0335	0.3618	1.9825	0.0218
Oct	0.0539	0.2412	0.0248	0.11	0.0094	0.007	0.0496	0.0457	0.0287	0.0538	0.0185	0.1094	0.0037	0.1011	0.0065	0.0013	0.1206	0.149		
Nov	0.0517	0.0009	0.0144	0.1482	0.0576	0.0058	0.0516	0.0718	0.0424	0.0221	0.0168	0.0852	0.0139	0.0817	0.0511	0.0317	0.0654	0.0399		
Dec	0.0102	0.211	10.659	0.1057	0.0242	0.0376	0.1036	0.0773	0.0191	0.0376	0.0008	0.1691	0.0299	0.0411	0.0045	0.1674	0.0838	0.1533		

Iran-Turkey																			
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	TUR	IR	TUR	IR	TUR	IR	TUR	IR	TUR	IR	TUR	IR	TUR	IR	TUR	IR	TUR	IR	TUR
Jan	0.031	0.046	0.01	0.129	0.031	0.059	0.045	0.041	0.01	0.099	0.278	0.074	0.018	0.121	0.007	0.056	0.058	0.22	0.019	0.04
Feb	0.047	0.024	0.037	0.174	0.005	0.173	0.029	0.041	0.019	0.109	0.049	0.02	0.017	0.049	0.005	0.021	0.04	0.007	0.03	0.049
Mar	0.034	0.074	0.01	0.147	0.025	0.018	0.001	0.065	0.06	0.075	0.021	0.08	0.038	0.097	0.006	0.103	0.02	0.1	0.031	0.087
Apr	0.033	0.219	0.058	0.574	0.084	0.016	0.085	0.178	0.002	0.113	0.044	0.084	0.002	0.003	0.011	0.033	0.007	0.069	0.067	0.22
May	0.042	0.15	0.06	0.1	0.022	0.093	0.115	0.008	0.015	0.034	0.01	0.041		0.134	0.048	0.082	0.062	0.063	0.054	0.06
Jun	0.008	0.137	0.006	0.006	0.038	0.091	0.131	0.041	0.088	0.072	0.02	0.068		0.077	0.022	0.013	0.086	0.125	0.039	0.026
Jul	0.006	0.033	0.013	0.139	0.048	0.07	0.342	0.017	0.073	0.06	0.049	0.072	0.046	0.017	0.014	0.107	0.077	0.271	0.031	0.043
Aug	0.041	0.069	0.01	0.033	0.054	0.098	0.01	0.093	0.044	0.026	0.054	0.038	0.022	0.043	0.056	0.022	0.039	0.073	0.191	0.043
Sep	0.014	0.132	0.044	0.207	0.033	0.058	0.071	0.12	0.048	0.07	0.056	0.043	0.025	0.013	0.058	0.077	0.034	0.086	1.983	0.021
Oct	0.054	0.186	0.025	0.274	0.009	0.132	0.05	0.172	0.029	0.054	0.019	0.068	0.004	0.097	0.007	0.063	0.121	0.195		
Nov	0.052	0.379	0.014	0.208	0.058	0.302	0.052	0.106	0.042	0.016	0.017	0.162	0.014	0.06	0.051	0.055	0.065	0.081		
Dec	0.01	0.183	10.66	0.202	0.024	0.224	0.104	0.164	0.019	0.107	0.001	0.039	0.03	0.024	0.005	0.022	0.084	0.104		

Iran-Kuwait																			
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	KUW	IR	KUW	IR	KUW	IR	KUW	IR	KUW	IR	KUW	IR	KUW	IR	KUW	IR	KUW	IR	KUW
Jan	0.031		0.01		0.031	0.023	0.045	0.052	0.01	0.05	0.278	0.015	0.018	0.039	0.007	0.035	0.058	0.073	0.019	
Feb	0.047		0.037		0.005	0.004	0.029	0.073	0.019	0.016	0.049	0.043	0.017	0.032	0.005	0.014	0.04	0.029	0.03	
Mar	0.034		0.01		0.025	0.049	0.001	0.099	0.06	0.046	0.021	0.168	0.038	0.137	0.006	0.046	0.02	0.022	0.031	
Apr	0.033		0.058		0.084	0.084	0.085	0.191	0.002	0.018	0.044	0.084	0.002	0.011	0.011	0.06	0.007	0.019	0.067	
May	0.042		0.06		0.022	0.059	0.115	0.064	0.015	0.046	0.01	0.033		0.031	0.048	0.066	0.062	0.018	0.054	
Jun	0.008		0.006		0.038	0.023	0.131	0.053	0.088	0.027	0.02	0.051		0.002	0.022	0.056	0.086	0.03	0.039	
Jul	0.006		0.013	0.007	0.048	0.011	0.342	0.069	0.073	0.048	0.049	0.021	0.046	0.04	0.014	0.042	0.077	0.034	0.031	
Aug	0.041		0.01	0.055	0.054	0.025	0.01	0.059	0.044	0.033	0.054	0.073	0.022	0.041	0.056	0.015	0.039	0.033	0.191	
Sep	0.014		0.044	0.101	0.033	0.077	0.071	0.096	0.048	0.031	0.056	0.061	0.025	0.054	0.058	0.007	0.034	0.097	1.983	
Oct	0.054		0.025	0.049	0.009	0.074	0.05	0.014	0.029	0.004	0.019	0.11	0.004	0.031	0.007	0.009	0.121	0.238		
Nov	0.052		0.014	0.007	0.058	0.071	0.052	0.02	0.042	0.034	0.017	0.03	0.014	0.059	0.051	0.063	0.065	0.101		
Dec	0.01		10.66	0.032	0.024	0.061	0.104	0.054	0.019	0.006	0.00	0.043	0.03	0.048	0.005	0.028	0.084	0.121		

Iran-India

	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	IND	IR	IND	IR	IND	IR	IND	IR	IND	IR	IND	IR	IND	IR	IND	IR	IND	IR	IND
Jan	0.031	0.047	0.01	0.018	0.031	0.076	0.045	0.01	0.01	0.005	0.278	0.024	0.018	0.045	0.007	0.082	0.058	0.004	0.019	0.057
Feb	0.047	0.082	0.037	0.151	0.005	0.026	0.029	0.072	0.019	0.014	0.049	0.033	0.017	0.088	0.005	0.01	0.04	0.11	0.03	0.092
Mar	0.034	0.069	0.01	0.024	0.025	0.038	0.001	0.029	0.06	0.012	0.021	0.052	0.038	0.051	0.006	0.061	0.02	0.105	0.031	0.175
Apr	0.033	0.048	0.058	0.032	0.084	0.064	0.085	0.075	0.002	0.158	0.044	0.091	0.002	0.123	0.011	0.048	0.007	0.05	0.067	0.283
May	0.042	0.071	0.06	0.048	0.022	0.038	0.115	0.134	0.015	0.008	0.01	0.071		0.02	0.048	0.007	0.062	0.18	0.054	0.009
Jun	0.008	0.099	0.006	0.037	0.038	0.079	0.131	0.051	0.088	0.078	0.02	0.061		0.013	0.022	0.062	0.086	0.066	0.039	0.081
Jul	0.006	0.046	0.013	0.025	0.048	0.065	0.342	0.119	0.073	0.004	0.049	0.022	0.046	0.089	0.014	0.015	0.077	0.015	0.031	2E-04
Aug	0.041	0.086	0.01	0.134	0.054	0.06	0.01	0.049	0.044	0.075	0.054	0.106	0.022	0.065	0.056	0.129	0.039	0.117	0.191	0.093
Sep	0.014	0.093	0.044	0.063	0.033	0.014	0.071	0.102	0.048	0.016	0.056	0.086	0.025	0.041	0.058	0.147	0.034	0.239	1.983	0.006
Oct	0.054	0.077	0.025	0.1	0.009	0.095	0.05	0.028	0.029	0.099	0.019	0.114	0.004	0.057	0.007	0.024	0.121	0.071		
Nov	0.052	0.007	0.014	0.008	0.058	0.046	0.052	0.157	0.042	0.059	0.017	0.069	0.014	0.007	0.051	0.048	0.065	0.061		
Dec	0.01	0.089	10.66	0.015	0.024	0.038	0.104	0.025	0.019	0.007	8E-04	0.056	0.03	0.022	0.005	0.13	0.084	0.023		

Iran-Jordan	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	JOR	IR	JOR	IR	JOR	IR	JOR	IR	JOR	IR	JOR	IR	JOR	IR	JOR	IR	JOR	IR	JOR
Jan	0.0307	0.0334	0.0097	0.0179	0.0308	0.0041	0.0451	0.0094	0.0095	0.0719	0.2776	0.0907	0.0181	0.007	0.0073	0.0762	0.0581	0.0188	0.0185	0.0308
Feb	0.0474	0.0253	0.037	0.01	0.0049	0.0162	0.0286	0.0462	0.019	0.0346	0.0489	0.0557	0.0174	0.1421	0.0046	0.0432	0.0396	0.0263	0.0304	0.0254
Mar	0.0344	0.0141	0.0102	0.0068	0.0245	0.0119	0.001	0.0594	0.0601	0.0386	0.0208	0.0918	0.0378	0.0141	0.0058	0.0365	0.0204	0.0237	0.0308	0.0293
Apr	0.0331	0.0358	0.0575	0.0074	0.084	0.044	0.0852	0.0787	0.0024	0.0165	0.0441	0.1402	0.0022	0.0314	0.0107	0.0339	0.0069	0.0441	0.0666	
May	0.042	0.0121	0.0603	0.0196	0.0215	0.0687	0.1148	0.0561	0.0149	0.0462	0.0102	0.0086		0.0258	0.048	0.0117	0.0618	0.0447	0.0536	
Jun	0.0083	0.0019	0.0056	0.0092	0.0381	0.0626	0.1307	0.0399	0.0883	0.0507	0.0201	0.1008		0.121	0.0224	0.0095	0.0862	0.0866	0.0394	
Jul	0.0058	0.037	0.0125	0.0381	0.0477	0.0265	0.3419	0.1025	0.0725	0.0372	0.0494	0.056	0.0462	0.0266	0.0144	0.0272	0.0767	0.0396	0.0311	
Aug	0.0414	0.0278	0.0096	0.0511	0.0541	0.0275	0.01	0.0332	0.0444	0.0026	0.0537	0.0472	0.0224	0.0603	0.0559	0.0182	0.0385	0.0609	0.1913	
Sep	0.0135	0.0109	0.0438	0.0033	0.0331	0.0397	0.0712	0.0172	0.0484	0.0542	0.0563	0.0236	0.0254	0.037	0.0584	0.0326	0.0335	0.0752	1.9825	
Oct	0.0539	0.0204	0.0248	0.0431	0.0094	0.0351	0.0496	0.0176	0.0287	0.0576	0.0185	0.0213	0.0037	0.0293	0.0065	0.1116	0.1206	0.1971		
Nov	0.0517	0.012	0.0144	0.0525	0.0576	0.0207	0.0516	0.0782	0.0424	0.1132	0.0168	0.0256	0.0139	0.0675	0.0511	0.0039	0.0654	0.1562		
Dec	0.0102	0.0138	10.659	0.0233	0.0242	0.0048	0.1036	0.0272	0.0191	0.0166	0.0008	0.0919	0.0299	1	0.0045	0.0578	0.0838	0.0288		

Iran-Egypt																			
	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009	
	IR	EGY	IR	EGY	IR	EGY	IR	EGY	IR	EGY	IR	EGY	IR	EGY	IR	EGY	IR	EGY	IR	EGY
Jan	0.0307	0.0636	0.0097	0.0031	0.0308	0.0977	0.0451	0.0005	0.0095	0.1508	0.2776	0.3708	0.0181	0.2209	0.0073	0.0584	0.0581	0.0429	0.0185	0.1859
Feb	0.0474	0.0974	0.037	0.13	0.0049	0.0814	0.0286	0.2226	0.019	0.0177	0.0489	0.1303	0.0174	0.1149	0.0046	0.0585	0.0396	0.0903	0.0304	0.0435
Mar	0.0344	0.0047	0.0102	0.0938	0.0245	0.0064	0.001	0.0063	0.0601	0.0531	0.0208	0.0001	0.0378	0.0419	0.0058	0.0011	0.0204	0.005	0.0308	0.1454
Apr	0.0331	0.1174	0.0575	0.0753	0.084	0.0202	0.0852	0.092	0.0024	0.0969	0.0441	0.0583	0.0022	0.0183	0.0107	0.0384	0.0069	0.0466	0.0666	0.2324
May	0.042	0.0017	0.0603	0.0251	0.0215	0.0033	0.1148	0.1336	0.0149	0.0853	0.0102	0.0255		0.2093	0.048	0.0349	0.0618	0.0706	0.0536	0.1494
Jun	0.0083	0.1368	0.0056	0.0504	0.0381	0.0009	0.1307	0.0402	0.0883	0.0137	0.0201	0.1423		0.1267	0.0224	0.0039	0.0862	0.1062	0.0394	0.0606
Jul	0.0058	0.0941	0.0125	0.1101	0.0477	0.0126	0.3419	0.0655	0.0725	0.0922	0.0494	0.0113	0.0462	0.1733	0.0144	0.0465	0.0767	0.0744	0.0311	0.0429
Aug	0.0414	0.0183	0.0096	0.0679	0.0541	0.0078	0.01	0.1251	0.0444	0.0939	0.0537	0.0107	0.0224	0.0725	0.0559	0.0446	0.0385	0.0875	0.1913	0.0601
Sep	0.0135	0.1003	0.0438	0.1106	0.0331	0.0199	0.0712	0.1637	0.0484	0.1859	0.0563	0.1186	0.0254	0.0378	0.0584	0.1271	0.0335	0.1774	1.9825	0.0302
Oct	0.0539	0.0034	0.0248	0.0333	0.0094	0.0086	0.0496	0.1296	0.0287	0.0965	0.0185	0.0077	0.0037	0.0244	0.0065	0.0839	0.1206	0.2125		
Nov	0.0517	0.0072	0.0144	0.0918	0.0576	0.0185	0.0516	0.0422	0.0424	0.0294	0.0168	0.0325	0.0139	0.0075	0.0511	0.0122	0.0654	0.1489		
Dec	0.0102	0.0176	10.659	0.1006	0.0242	0.0063	0.1036	0.0452	0.0191	0.1123	0.0008	0.1328	0.0299	0.0628	0.0045	0.0766	0.0838	0.1434		

DATE	IRAN	KUWAIT	EGYPT	JORDAN	INDIA	TURKEY	CHINA	JAPAN	RUSSIA	BRAZIL	ENGLAND	USA
JAN00	0.030684		0.063646	-0.03337	0.046526	-0.04552	0.11699	0.021485	-0.00801	0.077618	-0.005727	-0.02011
FEB00	0.047363		-0.09735	-0.02532	-0.08191	-0.02	0.049954	0.018928	0.356579	0.00906	0.0493534	0.09672
MAR00	0.034435		0.004681	-0.01406	-0.06873	-0.07437	0.020047	-0.11622	-0.02161	-0.12806	-0.0325372	-0.0308
APR00	0.03311		-0.11738	-0.03583	-0.04808	0.218575	0.03171	-0.09131	-0.16159	-0.03739	0.00504157	-0.02191
MAY00	0.04201		-0.00172	-0.01209	0.071084	-0.14969	0.017714	0.06604	-0.09889	0.118406	-0.0073279	0.023934
JUN00	0.008306		-0.13684	0.00189	-0.09874	-0.13739	0.049494	-0.09669	0.13238	-0.01632	0.00833241	-0.01634
JUL00	-0.00577		-0.09405	-0.03695	0.046135	-0.03333	-0.00116	0.072088	0.236488	0.054208	0.04829309	0.060699
AUG00	0.041425		-0.01831	-0.02779	-0.08642	-0.06867	-0.05494	-0.06607	-0.17047	-0.0818	-0.0567237	-0.05348
SEP00	0.013471		-0.10026	0.010946	-0.09274	-0.13159	0.026767	-0.07669	-0.05063	-0.06661	0.02290998	-0.00495
OCT00	0.053885		0.003351	0.020376	0.077329	0.186383	0.055739	0.007491	-0.24116	-0.10628	-0.0460052	-0.08007
NOV00	0.05168		0.007175	-0.012	-0.00647	-0.37867	0.001386	-0.0589	-0.00091	0.148416	0.01307349	0.004053
DEC00	0.010161		0.01759	-0.01382	0.089272	0.182929	-0.0038	0.004197	0.211041	0.158202	0.01205303	0.034637
JAN01	-0.00972		-0.0031	0.017864	-0.01842	0.128656	-0.05152	-0.06935	-0.05054	-0.10083	-0.0602779	-0.09229
FEB01	0.037037		-0.13004	0.009985	-0.15132	-0.17358	0.0784	0.009016	0.028526	-0.09144	-0.0480238	-0.0642
MAR01	0.010176		-0.09382	0.006804	-0.02364	-0.14712	0.003029	0.071896	0.06621	0.033246	0.05914408	0.076814
APR01	0.057475		0.075324	-0.00745	0.032039	0.574323	0.044866	-0.04824	0.155634	-0.01796	-0.0286246	0.00509
MAY01	0.060264		0.02506	0.019649	-0.04822	-0.10035	0.001703	-0.0221	0.03501	-0.00614	-0.0265006	-0.02504
JUN01	-0.00562		-0.05039	0.00922	-0.03688	-0.00592	-0.13422	-0.08546	-0.0925	-0.05536	-0.0200975	-0.01074
JUL01	0.012478	0.006833	-0.11009	0.038085	-0.02533	-0.13888	-0.04488	-0.09673	0.047369	-0.06638	-0.0332966	-0.06411
AUG01	0.009635	0.055127	0.067878	0.051131	-0.13355	-0.03257	-0.03773	-0.08763	-0.12249	-0.17172	-0.0826193	-0.08172
SEP01	-0.04379	-0.10113	-0.11064	-0.00335	0.06322	-0.20699	-0.04293	0.06053	0.131983	0.068541	0.02779704	0.018099
OCT01	0.024841	0.048452	-0.03332	0.043117	0.099757	0.2742	0.034822	0.03194	0.110027	0.137879	0.03252178	0.075176
NOV01	0.014446	0.007407	-0.09181	0.052511	-0.00767	0.207514	-0.05836	-0.01447	0.148174	0.049954	0.00265201	0.007574
DEC01	10.65932	0.03181	-0.10056	0.023305	0.014928	0.201925	-0.1515	-0.05168	0.105672	-0.06312	-0.0100816	-0.01557

DATE	IRAN	KUWAIT	EGYPT	JORDAN	INDIA	TURKEY	CHINA	JAPAN	RUSSIA	BRAZIL	ENGLAND	USA
JAN02	0.030812	0.022715	-0.09769	0.004068	0.075892	-0.05865	0.091715	0.059016	0.011199	0.103137	-0.01235	-0.02077
FEB02	0.004918	0.003984	0.081373	-0.01615	-0.0261	-0.17343	0.051951	0.041284	0.206363	-0.05544	0.033484	0.036739
MAR02	0.024483	0.048555	-0.00644	0.011939	-0.03781	0.018183	0.039803	0.042413	0.100784	-0.01283	-0.02014	-0.06142
APR02	0.084018	0.083858	-0.0202	-0.04403	-0.06364	-0.01549	-0.09115	0.023594	0.013364	-0.01712	-0.01558	-0.00908
MAY02	0.021484	0.058893	-0.00327	0.068745	0.038062	-0.09286	0.143185	-0.09707	-0.09577	-0.13389	-0.08431	-0.07246
JUN02	0.03815	0.023216	-0.00092	0.062598	-0.07922	-0.09082	-0.04684	-0.07003	-0.0779	-0.12353	-0.08809	-0.079
JUL02	0.047685	-0.01066	-0.0126	-0.02646	0.064793	0.070201	0.0091	-0.02618	0.020446	0.063403	-0.00445	0.004881
AUG02	0.054072	-0.02499	0.007798	-0.02745	-0.05968	-0.09778	-0.051	-0.02454	0.003485	-0.16943	-0.11958	-0.11002
SEP02	-0.03311	-0.07673	0.019862	-0.03968	-0.01405	-0.05822	-0.04686	-0.07916	0.07361	0.179172	0.085416	0.086449
OCT02	-0.00944	0.073636	0.008602	-0.03508	0.094768	0.131877	-0.04864	0.066556	0.006971	0.033537	0.032106	0.05707
NOV02	0.057647	0.070691	0.018472	0.020679	0.04598	0.301781	-0.05336	-0.06908	-0.00576	0.072224	-0.05492	-0.06033
DEC02	0.024162	0.060828	-0.00629	-0.00483	-0.03757	-0.22405	0.104718	-0.02786	-0.03762	-0.02902	-0.09466	-0.02741
JAN03	0.045131	0.051699	-0.00049	0.009414	0.010239	0.040897	0.008074	0.00277	0.109011	-0.06032	0.024724	-0.017
FEB03	-0.02861	0.073439	-0.22258	-0.04621	-0.07155	0.040677	-0.00089	-0.04667	-0.05976	0.096586	-0.01157	0.008358
MAR03	0.000979	0.099189	-0.00629	0.059376	-0.02917	-0.06455	0.007189	-0.01772	0.172176	0.113802	0.086541	0.081044
APR03	0.085247	0.191387	0.092	0.078703	0.074654	0.177629	0.036032	0.075732	0.105902	0.068886	0.0311	0.050899
MAY03	0.114807	0.064202	0.133631	0.056101	0.13405	-0.00752	-0.05725	0.078177	0.077949	-0.03345	-0.00417	0.011322
JUN03	0.130652	-0.05294	0.040249	0.039911	0.05142	-0.04072	-0.00624	0.052856	-0.09233	0.046173	0.031207	0.016224
JUL03	0.34191	0.068946	-0.06552	0.102495	0.119211	-0.01654	-0.03708	0.081598	0.161743	0.118037	0.000986	0.017873
AUG03	0.009993	0.059037	0.125132	0.033177	0.049122	0.093275	-0.03855	-0.01204	0.067202	0.05516	-0.01677	-0.01194
SEP03	-0.07117	0.096261	0.16369	0.017232	0.101865	0.120406	-0.0138	0.033324	-0.10677	0.123103	0.04798	0.054961
OCT03	0.049637	0.013514	0.129618	-0.01763	0.028114	0.171848	0.03629	-0.04347	0.04574	0.122456	0.012828	0.007129
NOV03	0.051563	0.01994	0.042239	0.078195	0.157417	-0.10548	0.071434	0.057033	0.071759	0.101665	0.030926	0.050765
DEC03	0.103609	0.053743	0.045205	0.027247	-0.02454	0.163512	0.062583	0.010019	0.077303	-0.01731	-0.01925	0.017276

DATE	IRAN	KUWAIT	EGYPT	JORDAN	INDIA	TURKEY	CHINA	JAPAN	RUSSIA	BRAZIL	ENGLAND	USA
JAN04	0.009462	0.050251	0.150753	0.071898	-0.00494	-0.09862	0.05302	0.023954	0.096613	-0.00439	0.023117	0.012209
FEB04	0.019021	0.015625	-0.01769	-0.03464	-0.01357	0.108928	0.03973	0.060992	0.123138	0.017789	-0.02371	-0.01636
MAR04	0.060114	-0.04584	0.053139	-0.0386	0.011535	0.074758	-0.08385	0.003961	-0.16149	-0.11449	0.023713	-0.01679
APR04	0.002384	-0.01753	0.096858	-0.01652	-0.15835	-0.11315	-0.02487	-0.04467	-0.07929	-0.00316	-0.01314	0.012083
MAY04	-0.01487	0.04596	-0.08532	0.046151	0.00753	-0.03378	-0.10074	0.0554	0.003872	0.082067	0.007538	0.017989
JUN04	0.088342	0.026685	0.013705	0.050693	0.07817	0.071619	-0.00926	-0.04495	-0.0738	0.056173	-0.01142	-0.03429
JUL04	0.072506	0.048424	0.092178	0.037163	0.004209	0.059624	-0.03184	-0.02154	0.082144	0.020862	0.010469	0.002287
AUG04	-0.04444	0.032743	0.093897	0.002591	0.075409	0.026411	0.040714	-0.0233	0.08039	0.019383	0.025004	0.009364
SEP04	0.048423	0.030728	0.185923	0.054226	0.015879	0.070266	-0.05453	-0.00482	0.050693	-0.0083	0.011683	0.014014
OCT04	-0.02875	0.00357	0.096532	0.057649	0.099082	0.054201	0.015319	0.011868	-0.05378	0.090057	0.017084	0.038595
NOV04	0.042448	0.033756	0.029418	0.113185	0.059093	-0.01626	-0.05539	0.054087	-0.02209	0.042502	0.023622	0.032458
DEC04	-0.01912	-0.00612	0.112301	0.016578	-0.00708	0.106858	-0.05897	-0.00881	0.037615	-0.07043	0.007893	-0.02529
JAN05	0.277615	0.015165	0.37084	0.090709	0.024088	0.074089	0.095803	0.031	0.124308	0.155558	0.023947	0.018903
FEB05	-0.04886	0.043044	0.130287	0.05566	-0.03292	0.019619	-0.09553	-0.0061	-0.06609	-0.0543	-0.01491	-0.01912
MAR05	-0.02081	0.168007	-0.00013	0.091831	-0.05212	-0.07961	-0.0187	-0.05656	0.001928	-0.0664	-0.01894	-0.02011
APR05	0.04408	0.08373	0.058254	0.140164	0.0911	-0.08349	-0.0849	0.024316	0.006086	0.014611	0.033801	0.029952
MAY05	-0.01024	-0.03281	0.025508	-0.00861	0.071293	0.040553	0.019043	0.027262	0.047358	-0.00619	0.030056	-0.00014
JUN05	-0.02006	0.051154	0.142311	0.100757	0.061382	0.068429	0.001934	0.027244	0.102707	0.039559	0.033071	0.035968
JUL05	-0.04935	0.020587	-0.0113	-0.05599	0.022266	0.072363	0.073654	0.043195	0.132361	0.076914	0.002764	-0.01122
AUG05	-0.05374	0.07263	-0.01068	0.047169	0.106215	0.037994	-0.00618	0.093502	0.142546	0.12619	0.034133	0.006949
SEP05	-0.05627	0.061292	0.118568	-0.02358	-0.08595	0.043361	-0.05433	0.002372	-0.07221	-0.04401	-0.02928	-0.01774
OCT05	-0.01853	0.109954	0.00767	-0.0213	0.11359	-0.06813	0.005893	0.093018	0.109381	0.057064	0.019916	0.035186
NOV05	0.016841	0.029633	-0.03245	0.025641	0.069306	0.161523	0.05622	0.083329	0.085167	0.048219	0.036067	-0.00095
DEC05	0.00078	-0.04284	0.132796	-0.09188	0.05554	0.038666	0.083536	0.033417	0.169119	0.147268	0.025183	0.025467

DATE	IRAN	KUWAIT	EGYPT	JORDAN	INDIA	TURKEY	CHINA	JAPAN	RUSSIA	BRAZIL	ENGLAND	USA
JAN06	-0.01808	0.039286	0.220926	-0.00696	0.045399	0.120619	0.032574	-0.02669	0.104471	0.005914	0.005416	0.000453
FEB06	-0.01744	-0.03188	-0.11488	-0.14212	0.087724	0.048501	-0.00056	0.052713	-0.01269	-0.01704	0.029889	0.011096
MAR06	-0.03775	-0.13698	-0.04185	-0.01415	0.050707	-0.09647	0.109312	-0.00899	0.154907	0.063528	0.009808	0.012156
APR06	0.002215	0.011234	-0.01829	0.031429	-0.12262	-0.00336	0.139618	-0.08511	-0.1183	-0.09496	-0.04969	-0.03092
MAY06		-0.03113	-0.20932	-0.0258	0.020257	-0.13396	0.018833	0.002447	0.022864	0.002765	0.019148	8.66E-05
JUN06		-0.00171	-0.12668	-0.12105	0.01269	-0.07662	-0.03557	-0.00312	0.037775	0.012175	0.016268	0.005086
JUL06	-0.0462	-0.04006	0.173278	0.026608	0.088904	0.017245	0.028467	0.044249	0.04874	-0.02279	-0.00374	0.021274
AUG06	0	0.040714	0.072502	0.060282	0.064567	0.043175	0.05654	-0.00082	-0.04715	0.005989	0.009262	0.024566
SEP06	0.025432	0.054187	0.037839	-0.03702	0.040747	-0.0131	0.04883	0.016854	0.04102	0.077204	0.028251	0.031508
OCT06	0.003654	0.030586	0.024387	-0.02932	0.056659	0.097295	0.142166	-0.00763	0.101086	0.067977	-0.01312	0.016467
NOV06	0.013921	-0.05903	-0.00753	-0.0675	0.006615	-0.05993	0.274464	0.058466	0.081748	0.060622	0.028435	0.012616
DEC06	0.029851	0.047683	0.062795	-1	0.022051	0.024111	0.041436	0.009148	-0.0411	0.003777	-0.00285	0.014059
JAN07	-0.00726	-0.03532	-0.05841	0.076212	-0.08181	0.055793	0.034002	0.012696	0.008253	-0.0168	-0.00509	-0.02185
FEB07	0.004569	0.013942	0.05847	0.043212	0.010358	-0.02059	0.105138	-0.01798	0.041751	0.043584	0.022118	0.00998
MAR07	-0.00585	0.046415	0.001114	-0.03646	0.06122	0.102881	0.206437	0.006523	-0.00011	0.068792	0.022384	0.043291
APR07	-0.01075	0.059563	0.038421	-0.03388	0.048448	0.033123	0.069868	0.027318	-0.08018	0.067653	0.026701	0.032549
MAY07	-0.04799	0.066154	0.034865	-0.01174	0.007291	0.0816	-0.07031	0.014691	0.065926	0.040637	-0.00204	-0.01782
JUN07	-0.02238	0.056179	0.003895	0.009471	0.061464	0.012982	0.170212	-0.04904	0.050725	-0.00384	-0.0375	-0.03198
JUL07	0.014389	0.041857	0.04645	-0.02725	-0.01494	0.106732	0.167255	-0.03941	-0.03715	0.008379	-0.00893	0.012864
AUG07	0.055891	0.014782	-0.0446	-0.01822	0.128765	-0.02146	0.063897	0.013073	0.079124	0.106668	0.025939	0.035794
SEP07	0.058359	0.006873	0.12706	0.032623	0.147295	0.076608	0.072487	-0.00286	0.073009	0.080261	0.039401	0.014822
OCT07	0.006491	-0.00867	0.083893	0.111604	-0.02393	0.063059	-0.18187	-0.06315	-0.00133	-0.0354	-0.04301	-0.04404
NOV07	-0.05111	-0.06308	0.012224	-0.00393	0.047709	-0.05504	0.080008	-0.02378	0.03171	0.013967	0.003793	-0.00863
DEC07	0	0.028095	0.076568	0.057809	-0.13005	0.022424	-0.1669	-0.11205	-0.16745	-0.06881	-0.08938	-0.06116

DATE	IRAN	KUWAIT	EGYPT	JORDAN	INDIA	TURKEY	CHINA	JAPAN	RUSSIA	BRAZIL	ENGLAND	USA
JAN08	0.058105	0.072952	-0.0429	0.018759	-0.00397	-0.21954	-0.00795	0.000776	0.082314	0.067221	0.000765	-0.03476
FEB08	-0.03963	0.028537	0.090317	0.026251	-0.11004	0.007307	-0.20141	-0.07921	-0.00485	-0.03971	-0.03096	-0.00596
MAR08	0.020363	0.022273	-0.00498	-0.02372	0.105013	-0.09986	0.063466	0.10574	0.033385	0.113174	0.067554	0.047547
APR08	-0.0069	0.019274	0.046613	0.044147	-0.05043	0.068691	-0.07034	0.035274	0.158954	0.06962	-0.00555	0.010674
MAY08	0.061812	0.017601	-0.07059	0.044726	-0.17995	-0.06316	-0.20308	-0.05978	-0.06364	-0.10435	-0.07064	-0.08596
JUN08	0.08618	0.030125	-0.10619	0.086579	0.066422	-0.12541	0.01448	-0.00776	-0.14616	-0.08479	-0.03804	-0.00986
JUL08	0.07672	-0.03366	-0.07443	-0.03958	0.014543	0.270792	-0.13631	-0.02272	-0.16299	-0.06428	0.04152	0.012191
AUG08	-0.03848	-0.03321	-0.08754	-0.06093	-0.117	-0.07305	-0.04321	-0.13868	-0.26383	-0.11026	-0.13024	-0.09079
SEP08	-0.03355	-0.09664	-0.17737	-0.07521	-0.2389	-0.08631	-0.24631	-0.23827	-0.36182	-0.24796	-0.10713	-0.16942
OCT08	-0.12062	-0.23755	-0.21251	-0.19707	-0.07104	-0.19449	0.082352	-0.00754	-0.149	-0.01774	-0.0204	-0.07485
NOV08	-0.06539	-0.10056	-0.14888	-0.15624	0.060993	-0.0812	-0.02691	0.040799	-0.03989	0.026068	0.034095	0.007822
DEC08	-0.08377	-0.12127	0.143377	-0.02885	-0.02312	0.104073	0.093283	-0.09769	-0.15327	0.046631	-0.06418	-0.08566
JAN09	-0.01848		-0.18589	-0.03075	-0.05652	-0.03967	0.046311	-0.05324	0.01783	-0.02845	-0.077	-0.10993
FEB09	-0.03044		-0.0435	-0.0254	0.091872	-0.04924	0.139405	0.071496	0.266352	0.071838	0.025065	0.085405
MAR09	-0.03081		0.145436	0.029292	0.174564	0.087127	0.043974	0.088628	0.207706	0.1555	0.080895	0.093925
APR09	0.066608		0.232407		0.282551	0.220025	0.062707	0.078638	0.305834	0.124931	0.041049	0.053081
MAY09	0.05358		0.149422		-0.00899	0.060239	0.12398	0.04578	-0.09247	-0.03258	-0.03819	0.000196
JUN09	0.039415		-0.06063		0.08117	0.02632	0.152972	0.040005	0.03085	0.064141	0.084534	0.074142
JUL09	0.031148		0.042869		-0.00023	0.043427	-0.21814	0.013102	0.048218	0.031461	0.065207	0.03356
AUG09	0.191316		0.060064		0.093204	0.043427	0.041863	-0.03424	0.176263	0.089026	0.045835	0.035723
SEP09	1.98254		0.030216		0.005615	0.020766		-0.04527	-0.02179	0.013833	-0.02135	0.013632