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An Exploration Of:

**How Political Risk Components Affect The Stock Return
And Volatility Considering Different Countries Of Varying
Economic Development.**

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Abstract Five main components of political risk were extracted from the International Country Risk Guide (ICRG) Rating model, this paper researches the elements: Government Stability, Socioeconomic Conditions, Investment Profile, Internal Conflict and External Conflict. We have chosen four countries to examine: the United Kingdom, Mexico, China and Iran from different economic worlds. We would like to investigate the relative importance of political risk factors on volatility and stock market returns. In addition we aim to explore the influence of each factor on stock market returns and volatility, in order to highlight the areas of importance for investors when making investment decisions and the government when making political decisions. Considering both qualitative and quantitative issues within the investigation, it is found that less economically developed countries are likely to be more exposed to political risks than its developed counterpart and individual countries have different influential factors from political risk. Moreover each stock market is influenced by a unique series of political factors, with very little overlap between each market in terms of relevant variables.

Keywords: Political risk, Government Stability, Socioeconomic Condition,
Investment Profile, Internal Conflict, External Conflict, Stock Return

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PART I

1. Introduction

Reliance on risk and reward is common place in today's financial markets. Many markets operating in politically unstable areas have higher exposure to risks, especially in emerging markets and areas of increased conflicts, which leaves investors vulnerable. Political risk, or "geopolitical risk" is the risk of investment returns based on political changes or instability in a country, which is a worldwide phenomenon affecting stock markets since the twentieth century. Eddi Elfenbein (2006) illustrates one general opinion succinctly, *"Many years ago, Richard Nixon was asked what he'd be doing if he weren't president. He said that he'd probably be on Wall Street buying stocks. One old-time Wall Streeter chimed in that if Nixon weren't President, he too would be buying stocks."*¹ Joviality aside the point is clear, politics and stock markets are inextricably linked, the question is at what intensity and frequency do political decisions and events affect the market. Political risk is a master category of risk contained within it a plethora of factors stemming the breadth of political, economic and social conditions. Risks have been proposed to be both real and socially constructed, with political risks being based on talk centricities and vote centricities. With economies ever interwoven managing risk on both political and firm level, it is of the utmost importance in this complex business environment.

Political risk, as an important factor when considering total risks of investment in a particular market, it is helpful to investigate, which factors can be controlled and which poses the most threat to the stock returns and volatility so that investors may be aware in the future. It can be used to anticipate potential upheavals in business, these shocks will be analysed in the returns and volatility. There are so many avenues to consider when forming a picture of political risk, elements affecting this risk may include: failed states, states of emergency, countries in transition, the quality of culture and law, threat of disease, natural resource depletion, unemployment, political instability, erosion of support for government, boarder disputes, literacy education, leadership succession issues,

¹<http://www.crossingwallstreet.com/archives/2006/11/politics-and-the-stock-market.html>

military mutiny, fiscal and monetary decisions, ideologies, foreign policies, taxation, international relations. This list has not been exhausted.

In 1979, Professors William D. Coplin and Michael K. O’Leary developed one worldwide known original political risk system that is called the “International Country Risk Guide” (ICRG) model for quantifying and rating political risk.² This Model is used to estimate firm and country risk rating. The model comprises of twenty two variables in three subcategories of risk: political, financial, and economic. They created indexes for each of these categories and base it on a points system, one hundred, being the highest risk possible. The political risk rating section of the model consists of twelve weighted variables, over a range of political and social attributes. It is the five highest weighted attributes of this model that we have used to investigate this political risk on returns and volatility, i.e., Government Stability, Socioeconomic Condition, Investment Profile, Internal Conflict and External Conflict. We are using ICRG theory and reasoning behind political risk, however our investigation does not rate political risk on a points system to represent the degree of the political risk, we select specific variables that can be embodied as those five main political components to explore their relationship between the political risk and the country’s stock market. It is interesting to inspect the degree of the effects of individual political outcomes, to highlight the importance of these risks when considering decision making, at firm and country level. This will help illuminate readers as to the triggers of financial crisis or potential increases in volatility so they can account for it in their investment decisions. In regards to making political analysis, we aim to help the government and investors optimize their effectiveness and efficiency in their involvement in the market.

The paper is divided into eight chapters. The first part is the introduction where an outline of the philosophy of political risk and the purpose of this paper is illustrated. The second part is a reflection on previous research on this topic. The political risk components are introduced in the third part, including specific literature related to each variable. The fourth element is an overview and analysis of the four countries related to their current political risk condition. The fifth section conveys our data preliminary analysis and

²<http://www.prsgroup.com/Default.aspx>

methodology. The sixth is the exhibition of our result and relative analysis of return and volatility regressions. The seventh chapter looks at implications for investors. The final chapter includes a conclusion, limitations and suggested studies for the future.

2. Previous Research

From the late 1980's there has been a surge in the research completed encompassing a plethora of factors stemming beyond the economic, into modeling risk for a country. They have broadened the fields capturing both social and geopolitical components. Evidence of geopolitical effects on stock returns and volatility is scarce and varied in results. There are many anecdotal opinions about the effects of politics on these factors, however due to the difficulty of data collections, little comprehensive studies on the subject have been carried out.

Political risk is derived from many different factors and may have varying and unforeseen effects on returns and volatility. Studies have shown a connection between political risk and volatility, such as Kim and Mai (2001) who revealed that volatility movements are associated with political developments and legitimate uncertainty about the survival of the economic system in that political news provides information about the likelihood of its survival, which is an affirmation of the Merton model (1976). Della Vigna, and Pollet (2007) found that a trading strategy exploiting demographic information earns an annualized risk-adjusted return of approximately six percent. Hence they insinuate that demography plays a poignant role in the returns of the stock market. There have been instances where we can see clearly the effects of political decisions on the stock volatility. For instance when the US government thwarted the passage of a motion to bail out the banks in 2008, which saw the Chicago Board Options Exchange Volatility Index, known as Wall Street's fear gauge, fell 15.6% in one day (Gray 2008). Alesina et al.'s (1997) have a modeling strategy that allows for a realistic interval between a change in regime and a change in policy, highlighting the effect of these factors on returns. There have been studies which have shown positive results for how political news has affected currency or equity markets such as Chan and Wei (1996) and Bittlingmayer (1998). Beaulieu, Cosset, Essaddam (2005) concur, they have also found

that in instances political uncertainty is found more frequently in less developed countries, as financial data is not always reliable.

Elections in which the outcome is “close” as measured by voting results lead to deeper investment cycles than elections in which the victor wins by a large margin, Julio and Yook (2010). Pantzalis et al. (2000) document positive abnormal returns prior to the election week for an international data set of 33 countries. Baker, Bloom and Davis (2011) found their stock index spiked near significant presidential elections and after major events such as the Gulf wars and the 9/11 attack. They found high index values in recent years with apparent jumps around the Lehman bankruptcy and TARP legislation, the 2010 midterm elections, the Eurozone crisis and the U.S. debt-ceiling dispute. Durnev (2012) found in a large panel of elections around the world, investment is 40% less sensitive to stock prices during election years compared to non-election years. The decrease in investment-to-price sensitivity appears to be due to stock prices becoming less informative during election years making them noisier signals for managers to follow. There has been a study showing the power of informal news mediums, from chatter on twitter, a model has been created that has outperformed other baseline strategies by between 1.4% and nearly 11% and also did better than the Dow Jones Industrial Average during a four-month simulation, Hirstidis (2012).

Köksal and Çalışkan (2011) and Nishat and Mustafa (2002) found that political developments affect both the returns and the volatility of the stock market, while Malik, Hussain and Ahmed (2009) found that political events affect the stock price due to which the trading volume and stock return fluctuate positively or negatively as per the intensity of the event. One study argues that the inflow and out flow of capital is correlated with the political and economic condition of the country, it is also the cause of extreme fluctuations in stock market Nishat (2000). It should also be noted that Wells (1998) suggested that political risk affects operations rather than ownership of the assets. Boutchkova et al. (2010) found that firms who are more exposed to political decisions have higher stock volatility around elections, reflecting a higher weight of political risk encompassed in their stock price. Julio and Yook (2010) found that during election years, firms reduce investment expenditures by an average of 4.8% relative to non-election

years, controlling for growth opportunities and economic conditions. This implies that change in political leadership is an important variable affecting the real economic landscape of the country. They also advocated that parliamentary systems will have a higher proclivity for large policy swings than presidential elections, facilitating more pronounced investment cycles than do the presidential systems.

Mei and Guo (2004) examined the impact of political uncertainty on financial crises using a panel of 22 emerging markets. By examining political election cycles they found that eight out of nine of the financial crises happened during the periods of political election and transition. Using a combination of probit and switching regression analysis, they find that there is a significant relationship between political election and financial crisis including an increase in volatility, after controlling for differences in economic and financial conditions. From this they suggest that political uncertainty is a prime contributor to financial crises. An opposing finding by Arin, Molchanov and Reich (2011) concluded that neither their Bayesian Model Average base specification nor the robustness checks identified the election dummy as an important variable in determining return volatility. In contrast to the previous literature they suggest that elections do not significantly increase return volatility.

3. Five Political Risk Components

In this paper, we introduce five components of political risk, which are: Government Stability, Socioeconomic Condition, Investment Profile, Internal Conflict and External Conflict. In the (ICRG) system, these five components are the main body to evaluate one country's political risk. They assess and rank the impact for each part of a country and finally give an overall score to represent its political risk. Inspired by this model, we are interested to see what role for each political factor has played.

Government stability

This covers a number of areas within government, one of which is the issue of elections. There is substantial but mixed evidence that the frequency of elections and the expectation of a certain party victory have implications on stock Volatility. Leblang and

Mukherjee (2005) have found that elections have been found to cause a change in volatility when people expect a left wing party to win, showing a decline in trading volume which leads to a decrease in mean and volatility of the stock price in the US market. The opposite was found for the expectation of a right wing victory. However another analysis of 24 stock markets and 173 different governments revealed that there were no statistically significant differences in returns between left-wing and right-wing executives. Consequently, international investment strategies based on the political orientation of countries' leadership were likely to be fruitless. The implication being that a change in party may not affect the volatility of the stock returns, Bialkowski, Gottschalk and Wisniewski (2006). Yosef Bonaparte et al (2010) discovered that if the current party is different from investors' political affiliation they show passive attitude of investments since they are operating in a riskier market.

Socioeconomic conditions

Socioeconomic conditions are the basic analysis for the country economic environment since the policy and economy are continuously banded together. As well, the socioeconomic condition is the base of the stock market. Gertler and Grinols (1982) found in their study that adding unemployment as a factor in explaining stock returns added to the explanatory power of the regression significantly. However other findings using the monthly unemployment rate from the Bureau of Labor Statistics and contemporaneous S&P 500 Index data for the period January 1950 through July 2011 (739 months) found that there was no relation between unemployment rate and stock returns CXO (2011).³ In (2000) Dimitrios Asteriou and Simon Price suggested that there is a strong link between political instability and UK economic growth. Rebel A. Cole et al. (2007) showed that a positive and significant relationship between bank stock returns and future GDP growth that is independent of the previously documented relationship between market index returns and economic growth. It is recognized that the stock market returns were positive with the trend of the economic growth, however, in Jay R. Ritter's paper (2004), he found the cross-country correlation of real stock returns and per capita GDP growth over 1900–2002 was negative. He also found countries with high

³ <http://www.cxoadvisory.com/9919/economic-indicators/unemployment-rate-and-stock-returns/>

growth potential do not offer good equity investment opportunities unless valuations were low between 1961 and 1997. We are using the socio-economic factors to determine the stage of development for each country and using these as a comparative base.

Investment Profile

Through globalization, open economies expose themselves to international political risks in alongside domestic. Boutchkova (2008) discovered that global political risk and foreign election uncertainty are more strongly related to idiosyncratic rather than systematic volatility. This result suggests that while the managers of trade dependent companies can potentially diversify political risks through an optimal selection of trading partners, the benefits of such diversification are limited, Bialkowski et al. (2008) suggest that it is not the benefits that are limited but the investors limited ability to diffuse country specific risks. İkizlerli and Ülkü in (2010) found that besides revealing the impact of political risk on foreign investors' trading, currently a gap in the literature, they have tracked the differential effect of political risk upgrades and downgrades on market returns.

Internal Conflict

In the most general setting stock volatility may reflect diffuse and easily changed beliefs about the future, specifically pertaining to bad news. The peso problem is often linked with political instability and one in which we consider when examining the model. Yulong, Huey-Lian and Tang (2002) carried out an in-depth case study on how a political event could affect stock returns of companies in joint ventures with China. Basing it on the Tiananmen Square incident, they found a significant impact on the returns of the firms. They believed the market had reacted in an efficient manner and that the effects were small in magnitude and temporary. However, in (2009), a case study of Terrorism in Colombia showed this kind of news does not seem to affect the risk level faced by investors. One possible reason is that terrorism in Colombia, though dramatic, is considered a variable that does not condition economic activity. On the other hand, one could argue that terrorism news or acts of violence are so common that they do not seem to affect the sentiment of investors.

External Conflict

External uncertainties arising after major economic and political shocks, like the 9/11 attacks, the Cuban Missile Crisis and the Gulf Wars appear to generate short sharp recessions and recoveries Bloom (2009). But not all the external conflicts are reflected by the stock market. One paper written by Spyridon Repousis, surveyed the reaction of Greek banks' stocks to three major international terrorist events (September 11 2001 attacks in New York, Madrid train bombing in March 11, 2004 and London train bombing in July 7, 2005) and found that of the three terrorist attacks, only September 11th resulted in significant abnormal returns in the Greek bank stocks. Bittlingmayer (1998) found that stock prices in Germany between 1914 and 1920 had a onetime downward shift coinciding with the war; however he found that the volatility increased only at the start of the war and the end of the war. Anh Phuong Nguyen and Carl E. Enomoto (2009) used a GARCH model to test how these attacks have affected two specific stock markets: one in Pakistan and the other in Iran. It was found that the variable was significant, but different, stock index return shifts and changes in volatility occurred in the two markets.

By adopting these five components, we consider both the internal and external factors of the political risk. In addition, geopolitical uncertainty and instability are important factors affecting both politics and business in different capacities. Changes in government, policy or events large enough to change the economic landscape will affect the market, investors hold off, to see which policies are put forward to stimulate investment. It is not unrealistic to assume that the stock market returns and volatility is likely to be affected.

4. Overviews of the Four Countries Current Political Risks Condition

Arin, Molchanov and Reich (2011) suggested that the reason for the scant evidence of political effects on returns and volatility has to do with selection bias, in that most of the studies chose only one country. We have tried to rectify this by including four countries in our case study. They also propose that researchers have taken too limited a view on what constitutes a political variable. We have also taken this into consideration when choosing our variables.

Political risks are notoriously hard to quantify because there are limited sample sizes or case studies when evaluating an individual nation.⁴ We have taken this into account which is why we have taken four countries and no more, we have had to gather much of the data manually in order to build our model. We have used time series models to capture these affects. Cross country comparisons alleviates difficulty in limitations. The four countries we have chosen are; United Kingdom, China, Mexico, and Iran as our research subjects.

We divided the country into three economic world groups based on the United Nations Development Programme (UNDP). The Human Development Index (HDI) is the standard index used to separate developed country (over 0.9), nearly developed country (0.85~0.9) and developing country (under 0.85). The United Kingdom is a more economically developed country (MEDC) which belongs to first economic world. Since its policy and financial systems in each aspect have been developing consistently, we make a preliminary assumption that the political risk is lower than the other three countries. We regard United Kingdom whose HDI is (0.947) as a representative of the countries in the first economic world. Mexico is in the second economic world with a HDI of (0.854). Iran has a HDI of (0.709), and China with a HDI of (0.687), they are both in the third economic world, however, their economic and policy systems are diverse, unique and worth a deeper exploration.⁵ China, as a communist state is ruled by one party. Their communist economic system is entirely different from the capitalist and socialist economies. In recent years, the high speed development of economic of China has attracted world's economists' eyes to explore each aspect of the Chinese economy. Therefore, it is pivotal to look into the political risk of China. Mexico and Iran are two countries with conflicts either internal or external. Mexico has more internal conflict (drug-war), while Iran has been stifled with conflicts between Iraq and America. We have specifically chosen these countries as our sample as they have different features pertaining to our key model components.

⁴ <http://www.investopedia.com/terms/p/politicalrisk.asp>

⁵ <http://baike.baidu.com/view/221070.htm>

The United Kingdom

Government: The main regime of the current government is a conservative coalition at 55% of the votes. The head of government is the Prime Minister David Cameron. This is a combination of two parties the conservatives and the liberal democrats. This is the first time in British history that two leading parties have formed a coalition government. Key features of the country include a free status of press, free floating currency exchange system and government involvement in transport and medicine. British trade is interwoven into the euro zone; resolution of the European debt crisis will weigh heavily on Britain's ability to remain competitive. Due to the weakness in support for the current prime minister, challenges have recently been made in government on the referendum of the UK's membership in the EU, the issue was voted down after fierce negotiations. The European central bank wishes to move all European transactions to countries within the Euro zone, leaving the UK powerless to veto European financial regulations.

Present Socioeconomic conditions are an annual growth rate of 0.5%, infant mortality standing at 5 per 1000. Persons under the age of 15 make up 17% of the total population; urban population is at 90%, and urban growth at 0.6% and literacy at 99%. The work force is divided into primary at 1%, secondary 18% and tertiary services at 81%. Lastly, trade union strength is made up of 30% of the working population.⁶ With respects to the human development index the country stands at 94.7% with a world rank of 28.⁷ The GINI coefficient for the country is 40%.⁸ Corporate tax rate is being currently reduced from 26% to 25%, a reasonably conservative change giving the type of government in power. The UK has the second largest labour force in the European Union with over 28.93million people employed.⁹ The UK's largest export in 2011 was nuclear reactors, boilers, machinery and mechanical appliances of \$3644million. Mineral fuels, mineral oils and products of their distillation, bituminous substances and mineral waxes followed in second place, although incidentally it was also the most highly imported product in 2011 rising by 46% in the year.¹⁰ Its major exports are going to United States, Germany

⁶ PRS country risk services report as of 2010

⁷ "Human Development statistical Annex", United Nations report, 2011

⁸ <http://www.poverty.org.uk/09/index.shtml#g6> figure for 2009

⁹ PRS country risk services report figure for 2009

¹⁰ <http://www.guardian.co.uk/news/datablog/2010/feb/24/uk-trade-exports-imports>

and France while its major Imports are coming from Germany, the United States and China.

Internal and external conflict: Britain has been engaged in both civil and international conflicts in recent history. The most notable conflicts include the Falkland Islands war (1982), the Gulf war (1991), Afghanistan War (2001-present), the Iraq war (2003-present) and the Libyan War (2011). The most notable civil conflict in Britain is the Northern Irish conflict which has been ongoing from (1969-present). The major events of the last ten years have included: its first public sector strikes since 1976 in 2002, with council members and fire service protesting pay. The UK voted to join the war on Iraq in 2003. London was hit in a major terrorist attack in 2005 where over 50 people died and 700 were injured. After the financial crisis, Northern rock became the first government run British bank in a century.

Mexico

Government: The main political regime of the country is the Institutional Revolutionary Party; this party is a member of the socialist International organisation, which consists of social democratic and labour parties. Head of state and Government is President Felipe Calderon, who is a member of the opposing party PAN. The PRI won a leading position in the 2009 elections causing tension and decision making problems between the two parties. With increasing tensions from the two opposing parties solutions to these problems have been slow and painful. Key features of the country are that it has a partly controlled press, with government owning a monopoly share in the industry which allows it to filter information. It has a free floating currency exchange system. The government is involved in petroleum, petro chemicals, electricity, communications, transport, banking and agriculture.

Present Socioeconomic conditions are an annual growth rate of 0.9%, infant mortality standing at 18 per 1000. Persons under the age of 15 are at 29% of the population, urban population at 78%, and urban growth at 2.3% and literacy at 93%. The work force is divided into primary at 14%, secondary 23% and tertiary services at 63%. Lastly trade

union strength is at 15% of the working population.¹¹ With respects to human development index the country stands at 85.4% with a word rank of 57. The GINI coefficient for the country is 80.8%.¹² Corporate tax rate is being currently held at 30% which is an increase from the 2009 rate of 28%.¹³ Mexico has a labour force with over 46.99million people employed which is ranked 11th for largest labour force.¹⁴ Mexico is the 15th largest exporter in the world with an export value of \$303billion. Its primary exports are manufactured goods, oil and oil products, silver, fruits, vegetables, coffee, cotton. Its primary export partners are the US, Canada and Germany. With its imports valuing at \$306billion, its primary imports are; metalworking machines, steel mill products, agricultural machinery, electrical equipment, car parts for assembly, repair parts for motor vehicles, aircraft and aircraft parts. Its primary trade partners are the US, China, Japan, South Korea and Germany.¹⁵

Internal and external conflict: The Key feature of this country is its continued war on drug cartels, from 2006. In January 2012, the Mexican government reported that 47,515 people had been killed in drug-related violence since President Felipe Calderón began a military assault on criminal cartels soon after taking office in late 2006.¹⁶ Since being elected the Calderon has had a military approach to solving the deep routed and powerful drug cartels that exist within the country. This has many implications for the stability of the economy, with officials estimating that the drug trade makes up 4% of Mexico annual GDP, totaling as much as \$30 billion and employs at least half a million people.¹⁷ Mexico's recent conflict history includes: The Chiapas Uprising (1994-1999), which has ongoing tensions, however violence has subsided since 1994. The ERP Marxist Guerrilla Conflict (1996-2012), the ERP formed in 1996 promoting a Marxist philosophy, they have had a number of conflicts with the military over these years. They are believed to be connected with the pipeline attacks of 2007.¹⁸ The main source of political conflict has developed from the war on drugs declared by President Calderon in 2006. More than

¹¹ Prs country risk services report as of 2010

¹² "Human Development statistical Annex", United Nations report, 2011

¹³ http://www.fredlaw.com/articles/international/intl_1001_lgr.html

¹⁴ <http://data.worldbank.org/indicator/SL.TLF.TOTL.IN>

¹⁵ http://www.economywatch.com/world_economy/mexico/export-import.html as of 2010

¹⁶ http://topics.nytimes.com/top/news/international/countriesandterritories/mexico/drug_trafficking/index.html

¹⁷ <http://www.cfr.org/mexico/mexicos-drug-war/p13689>

¹⁸ http://www.historyguy.com/wars_of_mexico.html

50,000 troops and federal police are actively involved in the fight against the cartels.

China

Government: The main political party is the Communist Party of China. It is a multi-party state with all of the parties function under united leadership of this regime. The head of state is President Hu Jintao, elected in 2003, while the head of government is Premier Wen Jiabao elected in 2003. Within China the Communist Party of China has control over the full electoral process. Only parties who have membership to this master party are elected above local level. The key features of the country are a completely controlled press and a managed float currency exchange system. The government participates in nearly all sectors within the economy. With limited electoral voting freedom a key factor of current political risk is the preparation for the new leader of the Communist Party, who is selected internally.

Present Socioeconomic conditions are an annual population growth rate of 0.6%, infant mortality standing at 17 per 1000. Persons under the age of 15 are at 18% of the population, urban population is at 46%, urban growth at 2.8% and literacy at 94%. The work force is divided into primary at 40%, secondary 27% and tertiary services at 33%. Lastly trade union strength is at 0% of the working population.¹⁹ With respects to human development index the country stands at 68.7% with a word rank of 101. The GINI coefficient for the country is 72.5%.²⁰ The corporate tax rate for domestic and foreign companies is 25%, however small companies pay 20% corporate tax in certain cases.²¹ There is also a special 15% tax rate applies to state-encouraged new high-technology enterprises.²² China has the largest labour force in the world with over 815.3 million people employed. The issue for China's labour forces that there is both a surplus of labour in the rural areas and in addition as the university educated populace increases the government is faced with the issue of providing enough quality jobs in order to meet the World Trade Organisation's standards. China's exports have a value of value of \$1.581 trillion. Its primary exports are electrical and other machinery, including data processing

¹⁹ Prs country risk services report as of 2010

²⁰ "Human Development statistical Annex", United Nations report, 2011

²¹ http://www.worldwide-tax.com/china/china_tax.asp

²² <http://www.taxrates.cc/html/china-tax-rates.html>

equipment, apparel, textiles, iron and steel, optical and medical equipment. Its primary export partners are US 18%, Hong Kong 13.8%, Japan 7.6%, South Korea 4.4%, Germany 4.3%. With its imports valuing at \$1.327 trillion, its primary imports are; electrical and other machinery, oil and mineral fuels, optical and medical equipment, metal ores, plastics, organic chemicals. Its primary trade partners are Japan 12.6%, South Korea 9.9%, US 7.3%, Germany 5.3%, Australia 4.3%.²³

Internal and external conflict: China has seen a number of political tensions with other countries in recent years. In 2005 it was clear there was a deteriorating relationship between China and Japan which culminated into large anti-Japanese protests. There have also been tensions with Tibet, Since the Chinese army marched into majority Tibetan territory in 1950, relations between the communist authorities and Tibetans have been strained. In 2008 violence due to Chinese suppression was the worst in 20years of Tibet's history.²⁴ Within China there have been internal disturbances related to ethnic tensions. Violence and protests have taken place in recent years in the Xinjiang and Guangdong, between the Han majority and the Uyghur minority.

Iran

Government: The main political regime found in Iran is Conservatives who won the last election with 62.7% of the electoral votes. They are known as the alliance builders of Islamic Iran and are consisted of right wing Iranian political parties and organizations. The head of state is Ayatollah Ali Khamenei (1989) who is appointed for life by an Islamic religious advisory board. The head of government is President Mahmud Ahmadinejad (2005). Only electoral candidates that do not oppose the religious system of Iran can run for government. Opposition has been known to be oppressed post 2007, with certain parties being forbidden such as the "Freedom party of Iran".²⁵ Key features of the country include a completely controlled press and a managed float currency exchange system. The government is involved in the banking, foreign trade, industry, hydrocarbon sector. The main current issue with Iran is the increased tensions between it and the

²³ <http://www.indexmundi.com/iran/>

²⁴ <http://www.bbc.co.uk/news/world-asia-pacific-13017882>

²⁵ <http://www.rferl.org/content/article/1077663.html>

US/UK as they doubt the Iranians claims that its nuclear program is as peaceful as they claim. These tensions have been ongoing for a number of years, with talks being held at present between the countries.

Present Socioeconomic conditions are an annual growth rate of 1.2%, infant mortality standing at 44 per 1000. Persons under the age of 15 are at 21% of the population, urban population at 70%, and urban growth at 2.8% and literacy at 82%. The work force is divided into primary at 24%, secondary 31% and tertiary services at 45%. Lastly trade union strength is at 0% of the working population.²⁶ With respects to human development index the country stands at 70.9% with a word rank of 88. The GINI coefficient for the country is 73.1%.²⁷ Corporate tax rate is currently at 25%, this was reduced from 54% in 2002.²⁸ Iran has a labour force with over 25.7 million people employed which have a notable lack of skilled professions after the immigration of many people after the Iraq-Iran war (1980-1988).²⁹ Iran's exports have a value of \$84.92billion. Its primary exports are petroleum 80%, chemical and petrochemical products, fruits and nuts, carpets. Its primary export partners are China 16.2%, India 12.6%, Japan 9.9%, Turkey 6.8%, South Korea 5.7%, and Italy 5.3%. With its imports valuing at \$58.97 billion, its primary imports are; industrial supplies, capital goods, foodstuffs and other consumer goods and technical services. Its primary trade partners are China 17.4%, UAE 16.7%, Germany 7.6%, South Korea 6.3%, Russia 5.7%, Turkey 4.8% and Italy 4.2%.³⁰

Internal and external conflict: The main external war was with Iraq for 1980-1988. Other external conflicts have arisen such as the tensions with the US; this may have begun with President Bush's proclamation that Iran, Iraq and North Korea were the "axis of evil" (2002). In response the Iranian Foreign Minister Kamal Kharrazi said "We condemn the American accusations and think the world no longer accepts hegemony" in outrage at such a remark.³¹ In 2004 Tehran continued with the construction of centrifuges for uranium enrichment in direct violation of the previous agreement. There have been a number of incidents of civil unrest with riots in 2002 and 2007 over human rights and

²⁶ Prs country risk services report as of 2010

²⁷ "Human Development statistical Annex", United Nations report, 2011

²⁸ <http://www.tradingeconomics.com/iran/highest-marginal-tax-rate-corporate-rate-percent-wb-data.html>

²⁹ <http://data.worldbank.org/indicator/SL.TLF.TOTL.IN>

³⁰ <http://www.indexmundi.com/iran/>

³¹ <http://archives.cnn.com/2002/US/01/30/ret.axis.facts/index.html>

fuel. There were also mass protests which descended into as much chaos as Iran's 1979 revolution. The protests were over the 2009 presidential election, although Mousavi won by a large margin, outraged voters took to the streets.

PART II

5. Data and Methodology

We have modelled risk in a specific way, capturing specific features of political risk, to create an in-depth analysis of these particular factors. We intend to capture the specificities of hard and soft features of risk whilst remaining comparable across countries. Soft facets of risk include: roles, assumptions, attitudes, shifting trends and sudden occurrences. Hard features include anything that is already quantifiable i.e. macro indicators such as GDP, trade balance etc. We have married both data and observation to construct the model. When analysing the model we isolate the components examining each factor *ceteris paribus*. By modelling the factors the aim is to minimize the “*availability heuristic, probability neglect, alarmist bias, systematic neglect, affect heuristic, availability cascades and group polarization*”, Sunstein (2005). These are the issues stemming from a qualitative analysis of stock market behaviour, more interesting than that is that mass psychology and cognitive bias itself plays a part in shaping political risk.

5.1 Data Analysis

The data consists of monthly stock returns (log price of relatives) on Shanghai Composite Index (SCI) and Shenzhen Component Index (SZI) for China, Financial Times Stock Exchange 100 Index (FTSE) for the United Kingdom, Indices de Precios y Cotizaciones (IPC) for Mexico and Tehran Stock exchange (TSE) for Iran. All of these indices are the widely recognized standards to evaluate the market performance of a country. The United Kingdom's data period is from April 1982 to March 2012, 30 years with 360 observations. China opened its stock market in 1986, however the stock market was not activated until 1991; thus we have chosen the period from December 1990 to March 2012, there are 256 observations in the sample. Furthermore, we found that much of the internal

disturbances and political events occurred in the Shenzheng region of China, therefore we have chosen SCI and the Shenzheng Component Index to capture country wide information. Mexico's data period is available from January 1988 to March 2012, with 291 observations. The Iranian Stock market information was the most challenging to gather information, as there is limited data available pre 1997, the data available is from September 1997 to March 2012, consisting of 176 observations.

We have focused on the five factors given the most importance in the PRS group's model.³²

1. Government Stability
2. Socioeconomic Conditions
3. Investment Profile
4. Internal conflict
5. External conflict

The first important issue is Government Stability; to represent this factor we have selected two dummy variables, one variable being; if the current year is election year and the other if the current party is changed. They are the two main political factors that have a substantial influence on political risk according to many previous studies. Votes and Seats won by the leading party are another aspect we considered, since we think they will cause and directly effect on the support rate and enforcement of the new policies.

The second sub-component is the socioeconomic backdrop. The most common variables representing this condition are: growth rate of GDP per head, unemployment rate and CPI. Governments execute effective and efficient fiscal and monetary policies every year in order to realize current year's target of the stable growth of GDP per head, to decrease the unemployment rate and steady CPI. We have also considered the Human Development Index, which includes four parts: life expectancy, literacy, education, and

³²http://www.prsgroup.com/ICRG_Methodology.aspx

standards of living, as it gives an indication of the developmental stage of the country. The higher the degree of educated people in the stock market will reduce the irrational actions of the investors through affect heuristics opting for logical analysis. In addition, the GINI index is helpful in gauging the unequal distribution of wealth, which is at present nearly twice or three times higher than it was thirty years ago. It indicates a deepening gap between the rich and the poor.

As for the third part of Political Risk, we address the Investment Profile, which we have represented using Export percentage of GDP, Import percentage of GDP, Tax rate (corporate) and Economic Freedom. The Export and Import percentage of GDP conveys the importance of foreign domestic policy; the heavier proportion it is, the more significant influence the other countries' policy will have on their own country. Meanwhile, the amount of Exports and Imports can also give some information about the economic relationship between the countries. Tax rate is another pivotal factor that is controlled by government impacting on both individual and corporations. For example, when a government decides to support some industry, it will decrease the industry tax rate, which stimulates foreign asset flows in this country's industry. Otherwise, the foreigner could withhold their cash flow, which could be detrimental to the industry.

The last part included in investment profile is Economic Freedom; this is used to evaluate the relationship between economy and policy. Many empirical studies found a close link connecting economic growth, less corruption and lower political violence with the free market, based on their freedom rankings. The free market viewpoint understands economic liberty as the freedom to produce trade and consume any goods and services acquired without the use of force, fraud or theft. This is embodied in the rule of law, property rights and freedom of contract; characterized by external, internal openness of the markets and the protection of property rights.

The fourth category considered is internal conflict, which has been represented by the variables; Strikes, Homicide crime rate and Riots and Civil Wars. When collecting the raw data on Strikes, it is interesting to find that in the United Kingdom, the frequency of strikes is less than China, while the number of people involved in one strike is much far

larger than that of China. One reason is that, most of the strikes in China are not held by trade unions, but by an unofficial collective. Therefore, we hypothesize that the impact of strikes in China is less than that of United Kingdom even though it has a higher frequency. Crime rate is the index that reflects the condition of public security; it is representative of the conflicts within the domestic population. Here, we also use the two dummy variables representing riots and civil war respectively. We put 1 if there is a riot/civil war in that month, otherwise, 0 is applied.

The fifth and final factor influencing political risk we consider is external conflict. This is represented using the variable External War, it is modeled by a dummy variable; 1 given the current year is at war and 0 otherwise. We felt that this is an appropriate representation of external conflict and propose that it is likely to have severe implications on stock returns and volatility in the given country. We have selected War as an instance where the country deploys troops to a warzone throughout the world. We have not distinguished between the War being between in the domestic country or the involvement in another countries war. The percentage of the Military spending on GDP is another variable in this part, which reflects the government's attitude towards the nation security and degree of the tensions.

We focus on the effects of change in these variables with respects to the stock market, as they are directly dependent on government actions. The severity of fluctuations in these variables, reflect the degree of alterations in policy of a single country. Therefore we would like to consider the relationship between that policy risk and the stock market. One of the chief limitations of the paper is finding the appropriate frequency of data collection. We found quarterly data of GDP, Unemployment rate and yearly data for HDI, GINI index, Tax rate, Economic Freedom, Homicide rate, and Strikes. After constructing a trend analysis of these factors, we found a majority of economic factors do not change sharply in a short amount of time, and have been increasing or decreasing smoothly during the last 30 years; this is to be expected as it is unrealistic for a country to alter their economic condition rapidly. Therefore, we assume the factors such as CPI are consistent over a year and assume that the growth rate is the average for the latest three months of the period estimated. For the other variables, such as quarterly GDP per head,

we adopt the mean for quarterly data (divided by three). All data is collected from DataStream, the World Bank database, nation statistics and country union statistics and the BBC news website (Table 1).

5.2 Methodology

We have specifically focused on Macro level geopolitical risks. There are a number of other risks that affect a country index, such as financial and economic. However we have chosen to look at purely political, to see its contribution to stock market volatility and returns. We are deconstructing country risk models to assess the factors individual weightings. We will examine if these individual weightings bear any reflections in stock returns and volatility for the country's stock market index. We will then compare the countries results against each other. The model we have used as a template (ICRG), constructs risk ratings, this encapsulates political, economic and financial country risks. The section on political risk has 12 components of the full ICRG model, of which we have narrowed the focus, for an in depth analysis of 5 of these components. The five chosen were the most important factors, based on their weighting in the ICRG model

The primary purpose in this paper is to explore how political components affect the stock returns and volatility in the four different economically developed countries. First, it is necessary to observe what information the original data provides by examining the descriptive statistics. From the mean, standard deviations and other test statistics, a number of trends and the distributions are apparent for the last 30 years observations for each of the factors. Deduced from the standard deviations of the same variables in each of the four countries, we can see the volatility effect in each component of the policy risk and compare the degree of risk for each country. In considering the countries stage of development, we can achieve the preliminary analysis of how political components vary given different country characteristics.

Second, the OLS regression is applied by implementing the basic formula below. It aids our exploration of each factors impact on stock market returns and which reflects the governmental behaviors on stock market control. Our basic original model is shown below, by putting every representative in the OLS function we test the significance of the

variables to see if it exerts the effect we expected.

$$R_{it} = \alpha_{it} + \beta_{1it} * V + \beta_{2it} * SS + \beta_{3it} * Ey + \beta_{4it} * PC + \beta_{5it} * GR + \beta_{6it} * CPI + \beta_{7it} * HDI + \beta_{8it} * UE + \beta_{9it} * GINI + \beta_{10it} * E(I) + \beta_{11it} * T + \beta_{12it} * EF + \beta_{13it} * EX + \beta_{13it} * S + \beta_{14it} * SP + \beta_{15it} * C + \beta_{16it} * CW + \beta_{17it} * RIOTS + \beta_{18it} * EW + \beta_{19it} * M + \varepsilon_{it}$$

In addition, since the macroeconomic variables are generally highly correlated, original OLS regression will be biased due to multicollinearity. One simple but effective method we use is to remove some variables based on the correlation test. Moreover, before any adjustments, we will both run the Durbin-Watson statistics test and Breusch-Pagan-Godfrey test for autocorrelation and heteroscedasticity, problems which will violate the basic assumptions of OLS application. If the findings indicate the problems exists we will run the new regressions under Whites or HAC (Newey-West) correction.

In the fourth step, we aim to use the GARCH model to capture the volatility of the market returns. The GARCH model that was developed by Bollerslev and Taylor (1986) is widely recognized as one of the most appropriate models to calculate return volatility; this is because it accounts for the effect of both the main function's residuals and the conditional variance itself, superior to the ARCH model. Another positive, is that it is simple to run the regressions and in most cases, a GARCH (1, 1) is sufficient enough to describe the volatility of the real markets. In addition, for the main function of the GARCH model, OLS is not suitable for estimation since RSS minimization is no longer appropriate. Instead, the maximum likelihood that can be employed to find parameter values for both linear and non-linear models to estimate models from the GARCH family. Since only the volatility of the market returns is required for our analysis, the main function of the GARCH model the autoregression of the returns.

$$R_{it} = \mu_{it} + \rho * R_{i,t-1} + u_{it}$$

$$\sigma_{it}^2 = \omega_{it} + \gamma u_{i,t-1}^2 + \delta \sigma_{i,t-1}^2$$

After we achieve the conditional variance of the return from the GARCH analysis, the fifth step is to delve deeper to probe how the market stock volatility monthly affected by the policy variables among the four countries. An OLS regression on the volatility will be employed, and the same adjusted variables will be plugged into the function based on the analysis in the third step in order to make the volatility and returns consistent and comparable. The model is:

$$\sigma_{i,t} = c_{it} + \theta * f_{i,t}^* + \tau_{i,t}$$

The notation $f_{i,t}^*$ represents the series of different political variables. Standard deviation is adopted instead of the conditional variance since it should not be negative sign in the right side of the equation if the left side is squared; using standard deviation aids the ease of interpretation. For the volatility OLS regression, we apply the same test for the autocorrelation and heteroscedasticity. And we will correct the model by HAC (Newey-West) if autocorrelation exists and Whites correction if heteroscedasticity problems exist. Eviews is the main software employed in this investigation to estimate the volatility and shocks of the returns and the OLS regression itself.

6 Empirical Results Analysis

6.1 Descriptive Statistics

The descriptive statistics gives a summary of the variables used in the regression analysis. From the mean, standard deviation and the range from the minimum to maximum, we can make the basic hypothesis about the degree of political risk for each country. For our original data, we have following preliminary assumptions:

1. Government Stability:

The more frequency of the party changed and election, the lower the seats and votes by the leading party, the higher the political risk.

2. Socioeconomic Condition & 3. Investment profile:

The lower the standard deviation of the condition it is, which means the change of the environment is slow, the lower the political risk;

4. Internal Conflicts & 5. External Conflicts:

The more conflicts there are, the higher the political risk.

For the Government Stability, it is evident that Iran has the highest frequency of Party Change (std. 0.182) and Election (std. 0.13), while there is no Party Change in China (0). The averages for the variables Seats and the Votes are similar for the four countries. Therefore we may state that Iran have the highest political risk of government stability while China is lowest, given the first two variables.

In the second part of the Socioeconomic Condition, we have looked at the standard deviations of the variables. We treated the variables equally and have given a rank of 4 for the highest standard deviation and 1 for the lowest. We then summed the figures to calculate the highest overall country rank for the Socioeconomic Condition; the highest rank implies the largest volatility. In *figure 1* it is found that the Iran has the highest political risk in the Socioeconomic Conditions category, and then followed by China, and then the UK and Mexico with the lowest.

The same is done for the Investment profile. We notice that the political risk of the Investment Profile is also highest for Iran while the lowest is for the United Kingdom. The political risk of China is the second highest, then followed by Mexico.

Figure 1 Rank of Political risk component Averages

Socioeconomic Condition					Investment Profile				
	UK	Mexico	China	Iran		UK	Mexico	China	Iran
Growth rate	1	3	2	4	Export	1	2	3	4
CPI	2	3	1	4	Import	3	1	2	4
HDI	1	2	3	4	Tax	1	3	2	4
UE	4	1	2	3	Exchange	1	2	4	3
GINI	3	1	4	2	EF	1	2	4	3
SUM	11	10	14	17	SUM	7	10	15	18

In the fourth and fifth sections of the political risk are based on the internal and external

conflicts. From qualitative news sources and the mean of the variables, it is concluded that there is the highest of internal conflict risk for Mexico (drug war, riots and the highest crime rate), while Iran has the highest risk of the external conflict with a mean of (0.063).

In summation Iran appears to have the highest political risk as three components of the political risk were the highest for this country while the United Kingdom in the first economic world has the lowest results. The political risk of Mexico and China is in the middle. These results will be taken into consideration when analysing the results.

6.2 Correlation

Multicollinearity is the problem we have addressed in this study, as it is of paramount importance within our examination of the factors effect on the dependant variable. It is important as the examination requires a close look at how each variable affects the dependent; therefore we have tried to eliminate high correlations with particular caution. High correlation may lead to inaccurate p-values, which may indicate that the variable has no bearing on the dependent when in fact it, may be highly significant. Another issue is the prevalence of wide confidence intervals, the implications being, that one will not be able to accurately gauge whether the effect of x on y is positive or negative in worst case scenarios. We correct for multicollinearity to rule out redundancies. There were a number of variables with a high correlation, an exclusion of a selection was necessary as they represented aspects of the same phenomenon. As a rule of thumb a $\text{Corr}(X_i, X_j) \geq 0.8$, is too highly correlated, we therefore have used this in our assessment of the correlation.

For the UK there were many instances of correlation, in order to rectify the problem we chose to exclude a number of variables from the equation that were less important for our exploration of political risks. We excluded HDI, Imports and Unemployment. However some could not be taken out due to the importance of the variable in the study, therefore we attempted to include interaction terms of the correlated variables to capture the affect that made them correlated. However they proved highly insignificant and lowered the explanatory power of the model, signifying the inappropriateness of the interaction. We do not believe that the remaining variables with higher correlation will affect the outcome

as the signs of multicollinearity are not apparent, such as a high R-square or have high standard errors. Ignoring the highly correlated variables was unavoidable. The macroeconomic variables were expected to interact nevertheless, as it is natural and such as the case with CPI, Tax and Exports.

For Mexico, high correlations similar to the UK is a substantial issue, again many of the highly correlated variables were removed as we felt they were represented by the other variables. The variables excluded due to high correlations were: CPI, HDI, Imports, Seats and Exchange rate. We selected these variables to exclude, as the others were more pertinent to the question and to keep the countries comparable across the board. We tried to make interaction terms with the remaining correlated variables such as: Unemployment and Corporate Tax, however none were significant.

With China's variables there are a number of correlations between the socioeconomic indicators; this is to be expected given the commonality shared with the macroeconomic variables. The variables with high correlations were; HDI and Imports, we have excluded these from the regression. We also tried to create interaction terms with the remaining highly correlated items, such as Homicide rate with Tax, Homicide with Unemployment and GINI with Unemployment rate. However all of these proved insignificant.

There were not many correlated variables for Iran; therefore it was not necessary to exclude as many variables as with the other countries. We excluded HDI and Exports due to the high correlation. We selected to exclude Imports for the other countries, however, Imports for Iran was only correlated with Exports and Tax, whereas Exports was correlated with a number of other variables. Therefore it was more prudent to include Imports in the final regression. We attempted to create interaction terms for the remaining highly correlated variables, however, none proved significant again.

Correcting for multicollinearity is vital given the objective of our investigation, as we are interested in how individual factors affect the outcomes of the returns. Therefore we have been cautious when selecting the appropriate variables for the final regression, to minimize the impact of multicollinearity. We also found instances of near perfect multicollinearity, where nothing or very little changed within the variable. In this instance

such things as China's variables; External War, Party Change, Seats, and Internal War, could not be included in the regression. The same occurred with Mexico and its External War variable; we were not able to include such near perfect collinear variables.

6.3 The OLS Regression

Using the Original data set we ran the OLS regression on the log returns of each of the countries stock markets, with the regressors listed previously (Table 4). We ran two regressions on China using both the Shanghai Index and the Shenzhen Index, as it allows another level of comparison, both within a country and in conjunction with observing the effects of the variables across country returns. In running the original regression we found problems of multicollinearity, therefore many variables were excluded in the new adjusted regression (Table 5). We also assessed the significance of the variables and found that a number of variables should be excluded. We based this assessment on the insignificant variables, that when taken out increased the adjusted R-squared, therefore without a number of variables the explanatory power of the model increased. For the UK, Military and Strikes and GDP growth were taken out due to the same reason; For Mexico, Military and GDP growth rate were taken out as they were insignificant and it served the model better to be excluded. In the China regressions Military and GDP growth were excluded. For Iran all of the original data was relevant although not all significant, as the adjusted R-squared decreases as we tested each insignificant variable in the Iranian regression.

6.3.1 Stationarity Test

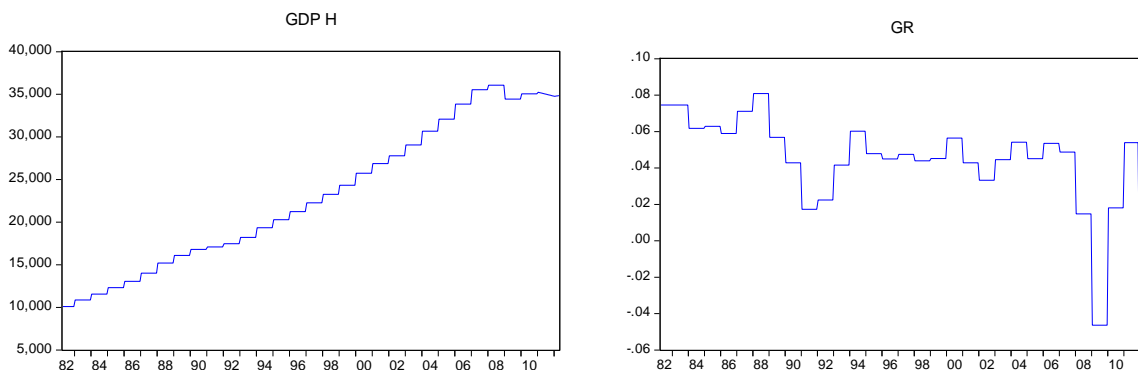
We used the Augmented Dickey-Fuller test to find if the Variable for GDP per head was non-stationary, across all countries. We tested this variable as it was the only variable that was not taken in percentage or binary form and therefore it was most likely non-stationary. We found that the t-statistic was (-1.02) with a probability of (0.7485) in the UK and similar across the other countries as seen in *figure 2* therefore we should reject the null hypothesis that there is no unit root. To correct for stationary we transformed the variable into the log differences of GDP per head, which gives us the GDP per head growth. We can also see clearly from the graphical illustration in *figure 3*

the transformation of the variable from non-stationary to stationary. The problem with stationarity is that non-stationary variables appear to be strongly related when in fact they are not, this if not addressed could aggravate the large multicollinearity problem in the study. If this occurs the assumptions for the hypothesis tests will not be valid. After the transformation of the variable GDP per head, into the GDP growth rate, the Augmented Dickey Fuller test statistic was (-2.59) with a probability of (0.04), which means that we cannot reject the null hypothesis to a 5% significance level that there is no unit root.

Figure 2 Dickey Fuller Test

	T-Stat Original	P-value	Unit Root	T-Stat Transform	P-value
UK	(-1.02)	0.74	Y	(-2.59)	0.04
Mexico	(-0.95)	0.77	Y	(-3.45)	0.01
China	(-2.57)	1	Y	(-3.2)	0.02
Iran	(-0.85)	0.8	Y	(-2.622)	0.09

Figure 3 Non-Stationarity and Sationarity in the UK



6.3.2 Heteroscedasticity Test

Figure 4 BPG Heteroscedasticity Test

BPG Test for Detecting Heteroscedasticity					
	FTSE	IPC	SCI	SZI	Iran
F-statistic	0.937551	5.786288	2.574032	1.017121	2.48377
prob. F	0.5263	0	0.0032	0.4336	0.0014

Another important issue we addressed when running time series regressions, was the potential condition of heteroscedasticity. Heteroscedasticity could produce incorrect

standard errors, which could lead to incorrect inferences. For OLS to hold the variance of the errors needs to be constant, this is known as homoscedasticity. There are a number of formal tests for this condition. We have selected the Breusch-Pagan-Godfrey test for homoscedasticity. It tests for a linear relationship between the residual variance and the regressors. We have performed an F-test, to test if the coefficients are jointly equal to zero. If the test statistic is greater than the critical value, then we should reject the null hypothesis of homoscedasticity. From *figure 4* it is clear that Mexico, China and Iran have heteroscedastic errors; we therefore used Whites heteroscedastically robust standard errors for these regressions to correct for this condition. After conducting the Ramsey RESET test on each of the variables, we also found that homicide rate was a quadratic function of returns in each of the countries, to a 1% significance level. When we tested the cubic form, it was insignificant across the countries. All of the other variables appeared to be linear.

6.3.3 Autocorrelation Test

Patterns in the residuals or autocorrelation may give inefficient estimates, which could give rise to incorrect inferences such as type II errors. The R-squared may also get inflated relative to its correct value for positive autocorrelation. To check for autocorrelation we looked at the Durbin-Watson statistic in each of the regression and found all were close to two, except for Iran which was (1.2), we therefore used the HAC (Newey-West) option to correct for this when running adjusted return regressions.

6.3.4 The Analysis of Return Regression Results

For the United Kingdom, of all the variables used in the regression only two were significant (Table 5). The first was the Election at a 10% level of significance. This is very interesting as it confirms previous studies that propose that election season has an impact on returns. The coefficient of the Election variable is (3.8). Therefore the model suggests that if there is an election in that month, the returns go up by 3.8%. This seems reasonable as people may become positive about the prospect of change. It is interesting to note however that party change had no bearing on returns for any of the countries. Therefore we found that the election month is important however the outcome does not

matter. The other significant variable is Homicide rate squared which is significant at a 5% level. As the Homicide rate increases the returns decrease at an increasing rate as the quadratic function is at a minimum. This also seems reasonable, as the higher the murder rate the less control the law exerts over the general populace. This may inspire doubt in investors which could lead to lower returns.

For Mexico there are also two significant variables from the variables we have regressed, firstly the Homicide rate squared, which is similar to the UK we have previously discussed, showing a negative relationship, at a 1% significance level. The other is civil war; this is significant at 10% with a coefficient of (-5.62). This illustrates a negative relationship between Civil War and returns. This is very plausible given Mexico's current condition, with ongoing ethnic violence and the number of uprisings from the Chiapas and the Marxists; this is also economically significant as it has a large impact on actual returns.

For the whole of China Shanghai return (SCI) we had three significant variables. The first significant variable is the election variable at 10% significance level with a coefficient of (-10.97). It should be noted that due to the fact that there is only a single party in China and the votes for a new leader are internal. Investors may feel like they have no control over the situation and therefore a negative reaction naturally ensues. Homicide rate squared is another factor that is significant at a 1% level, with a coefficient of (-1.6). The last significant variable was Tax, which was significant at 5%, with a coefficient of (1.23). This suggests that when tax increases by one unit returns increase by 1.23%.

The Shenzhen Index yielded a number of different results. The significant variables included; the GINI index with a significance level of 5%, and a coefficient of (0.77). The results suggest that as the wealth gap increases by one, the return's increase by 0.77%. This may be because Shenzhen is a wealthy region in China, as the wealthy are the ones that invest, power and success are rewarded to these select few. So fewer people may be successful but they may be much more successful. The Consumer Price Index is another significant variable at 10% level. One would expect a negative relationship between returns and CPI, as returns would decrease when inflation increases. The next significant

variable is Exports; it is significant at a 10% level; therefore it gives a negative relationship between Exports and return. If Exports increase by one unit, the returns decrease by 0.37%. Perhaps it indicates that other countries policies have more effect on the returns than the home country. Tax like the whole of China is significant at 10% with the coefficient of (0.94), which means as corporate tax increases by one unit, returns increase by 0.94%. Homicide rate squared is significant at 5% level of significance with a coefficient of (-1.6), illustrating a negative relationship between the two variables. Strikes are also significant at a 5% level, implying that if there is a strike on in that month the returns will increase by 0.00075%, however this is not economically significant as it barely alters the returns.

Even though SCI and SZI stock markets are in the same country, the results are totally different, which suggests that different markets reflect different components of political risk. It seems that SZI index is more sensitive to the macroeconomic environment aspect of the political risk while the SCI returns reflect more about the government stability. Since the SCI and SZI markets are in the same country which means most of the macro factors are similar, the different results show that local environment (both political and economic) has more significant impact on political risk than the country overall directly change the market returns.

Iran has a number of significant variables. The most important variable is Military spending as a percentage of GDP, which is significant to a 1% level with a coefficient of (-11.41). This has a large implication for the movement of returns, as a one unit increase in Military, decreases returns by 11.41%, which is substantial. Under Government Stability there are two significant variables, the dummy variable Election, and the Party Change variable. The Election variable is significant at 10%, with a coefficient of (1.37). This suggests a positive relationship between election season and returns, perhaps an implication of positivity at potential change in policies for the better. The other significant variable Party Change, is significant at a 5% level with a coefficient of (-3.43) which shows a negative relationship between Party Changed and returns. A possible reason for this perhaps could be fear of the unknown and what implications this has for policy and other aspects of business and the economy. Most of the variables under the

Socioeconomic Conditions have been significant. The GINI index variable is significant to a 5% level, with a coefficient of (0.88). This conveys a positive relationship between the wealth gap and returns, suggesting that as the wealth gap increases so too do returns, perhaps implying that the small minority of powerful individuals in the country are becoming more successful. Growth rate of GDP per head is significant at a 1% level, with a coefficient of (8.82); this is what we would have expected as growth signals economic prosperity. CPI is significant to 1% with a coefficient of (-0.12), and Unemployment is the last significant socioeconomic variable, with a significance level of 1%, and a coefficient of (3.34). There is clearly a positive relationship between unemployment and returns from our results, indicating that a one unit increase in unemployment increases returns by 3.34%. This is an unusual result, however perhaps as unemployment increases wealth is transferred into the hands of the rich and successful. The Investment Profile category has two significant variables. Tax is significant at a 1% level, with a coefficient of (0.2), this means that a one unit increase in tax rate increases returns by 0.2%. Import's is another highly significant variable with a coefficient of (1.58). This would suggest that a one unit increase in imports increases returns by 1.58%. This implies that the country's returns are influenced by the policies of other governments. There are no significant variables under Internal and External conflict, implying that they are irrelevant in influencing the shape of returns.

Considering the significant variables, the UK, China and Iran's Election variable affects returns in two different directions. Iran's and the UK's coefficients are positively affecting returns whereas China's variable has a negative influence. This may be to do with the particular way that China is run and the electoral systems in place. The GINI coefficient is positive and significant in both the Shenzhen region and Iran, illustrating that as the wealth gap increases returns increase, this is both interesting and surprising as it implies that as wealth is more unevenly distributed the more advantageous investments. CPI is both significant and negative for both the Shenzhen region and Iran, this is an acceptable result as one would expect as inflation rises, returns would decrease. Tax is another variable that is significant in both Shenzhen and Iran. The rest of China is also significant for this variable; all three regressions show that tax has a positive relationship between tax and returns. The governments have the ability to control these macro

variables and thus influence at least to some extent the outcome of returns. Homicide rate squared is very significant over all of the countries except Iran. In the UK, Mexico and China variable all have a negative relationship with returns. This seems reasonable as one would expect as murder rate increased the country would become more dangerous, with increase danger it becomes riskier to invest in that country and thereby extension decrease returns. This is also surprising that this particular variable is so economically significant in the UK and China, illustrating the countries sensitivities to crime rates. The other significant variables were not comparable over countries. Tax, GINI and CPI are three variables which are significant and shared with China, which are considered the two less developed countries with average HDI of (0.6) and (0.66). However the two more developed countries the UK and Mexico do not share any significant variables.

In Comparison of the four countries, it is found the Election has a significant impact on the stock returns; therefore, for the political risk of government stability part, Election exerts the most important effect on shocks of the stock returns no matter the political style of the country or in which of the economic worlds it operates. It is China and Iran that the socioeconomic condition and investment profile factors have the most significant impact, which suggests that the stock returns of the countries in the third economic world have a higher political risk of their country social and economic environments. Investors clearly pay attention to country security generally the due to significance of the Homicide rates in the majority of countries. The Civil War for Mexico has a large influence on returns, while military spending is the most important variable for Iran. This means that regardless of the economic world, the political risks are significant for Internal Conflict and External Conflict based on their country's culture and history.

6.4 GARCH Analysis

The second section of our analysis is to see how our political factors affect the volatility of returns; this will give us an indication of the impact of shocks and the persistence of the effects of political risk factors. In order to estimate the return volatility, we run the GARCH (1, 1) model on the market returns itself in the main function for the four countries individually, the results are shown in the appendix (Table 6). It is clear that in

the United Kingdom; the coefficient of the lagged returns is insignificant, which suggests that for the FTSE market, the current return is independent of the previous return figures. The negative R-squared also illustrates that the lagged return is a superior explanatory factor affecting the current returns. However, the coefficients of both the lagged squared residuals and lagged conditional variance terms in the conditional variance equation are highly statistically significant (at 99% confidence level), which implies that the GARCH model captures the volatility of the UK market return in an acceptable manner.

The Mexican model conveys the R-square of the main function as positive in spite of the insignificant coefficient of lagged returns. The coefficients on the lagged conditional variance terms are highly significant at 99% level while the lagged squared residual are significant at 95% confidence level, which suggests that the GARCH parameter is more significant than the 'ARCH parameter'.

From China's results, it is evident that different stock markets have different results despite operation within a single country. Most of the factors contained in the volatility of the market returns chiefly reflect characteristics of their unique markets rather than a generality of the country's overall situation. The coefficient of the Shanghai lagged returns is insignificant; while the Shenzhen lagged returns are significant at 95% confidence level. The sign of the R-squared is opposite for the two returns. The coefficient of the SCI is negative, which means the lagged return of the SCI is independent, while 1.1% of the current returns can be explained by the SZI lagged return. The volatilities are soundly captured as both have highly significant conditional variances; however the lagged squared residuals are significant at the different levels (99% for SCI, 95% for SZI).

The results of Iran reveal that the coefficient of lagged returns is significant at a 99% confidence level, which suggests that in the market of Iran, current returns are highly dependent on the last month's figures, that is, 30% current returns can be explained by the previous return studies. The GARCH model captures the return volatility significantly at 99% confidence level.

Comparing the GARCH results of the four countries, it is interesting to notice that the

‘ARCH parameter’ is smaller than the coefficient of the lagged conditional variance (‘GARCH’) for every country, which indicates that most of the volatility comes from the fluctuation of the conditional variance itself. As a typical GARCH model estimates the volatility of stock returns, the sum of the coefficients on the lagged squared error and lagged conditional variance is very close to unity for the United Kingdom, Mexico and Iran (0.98, 0.8, 0.98 respectively), which implies that shocks to the conditional variance will be highly persistent and the series are stationary. However, the sum result of China SCI return is totally different to the sum of the lagged squared residuals and the lagged conditional variance is slightly larger than 1 (around 1.03). In this situation, China’s data series is non-stationary and highly autocorrelated. Even though we do not expect to get this result which indicates the unpredicted variance in the long-run, the GARCH model still captures the conditional variance soundly, since the variance equation is significant. In summation as all the coefficients of the lagged squared residuals and lagged conditional variance are significant, the GARCH (1, 1) model is appropriate and sufficient for us to achieve the return volatility and our conditional variances are reliable.

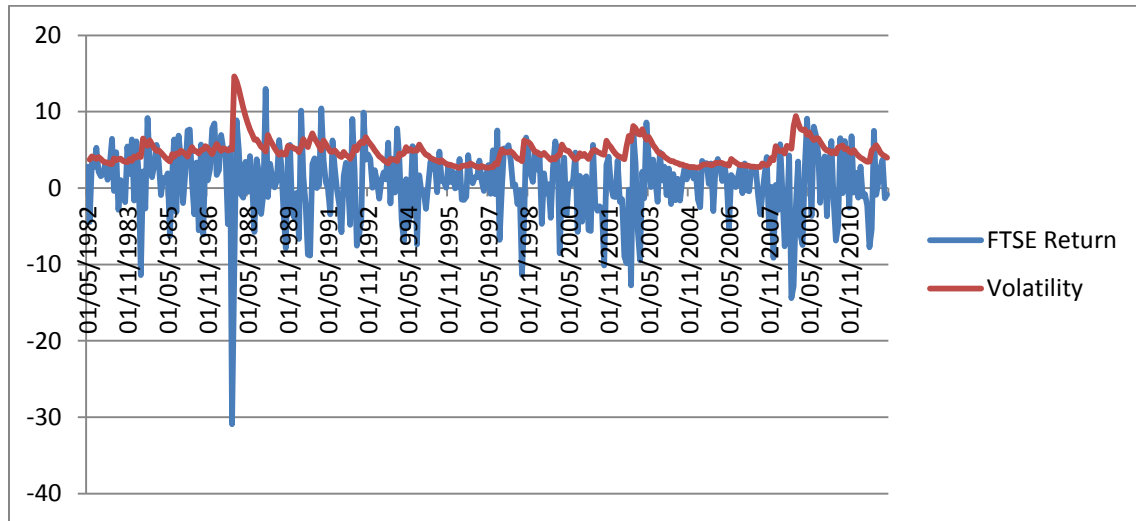
6.5 Volatility Analysis

Before running the volatility regressions, it is necessary to observe the trend and the difference between market returns and its volatility. It is interesting to look at the returns and volatility charted against time, to see both the movement of the returns and where shocks occur. On many instances the volatilities usually have the same trend with its stock returns; however the turning points generally occur a little later than that of returns due to their interactional relationship.

6.5.1 Country Returns and Volatility

The UK

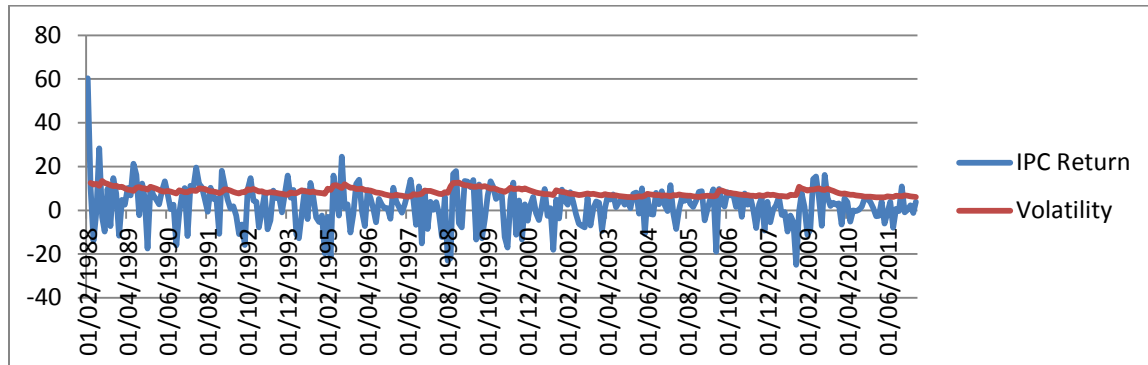
Figure 5 The UK Stock Returns and Volatility



In the first half of 1987 we see a drastic decrease in returns and a spike in volatility, which occurred on Black Monday. We can see clearly that the shocks persisted until early the next year. This was the largest shock to the stock market however there have been other drops in the stock market such as the burst of the Dotcom bubble in 2002 and October 2008, credit market crisis. It is interesting to see that the volatility is generally more affected by large decreases in returns as opposed to increases. However there are many movements in between these large and obvious ups and downs of both returns and volatility and it is in the more subtle movements we are investigating how much is caused by political risk factors.

Mexico

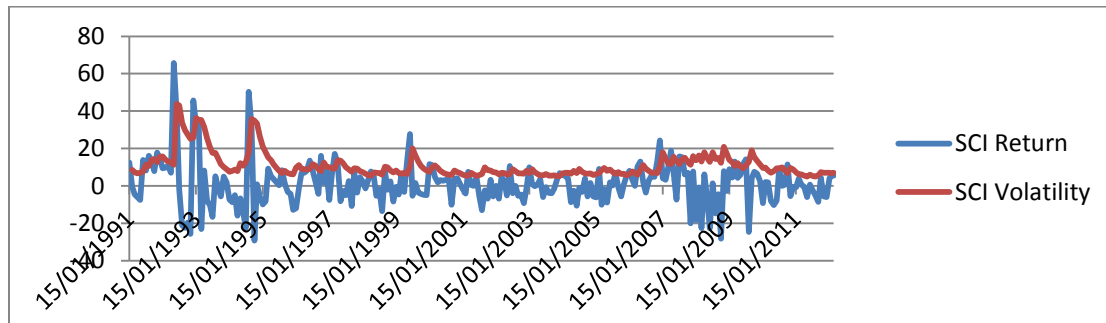
Figure 6 Mexico's Returns and Volatility



For the Mexican Index there appears to be movement in the volatility when the returns are especially erratic in the downwards position. There is a large trough, in 1995 and between 1998 and 1999; we can see peaks in the volatility. The Mexican returns do not reach many peaks apart from 1988, throughout the time period in comparison with the Chinese indices.

Shanghai

Figure 7 The Shanghai Returns and Volatility

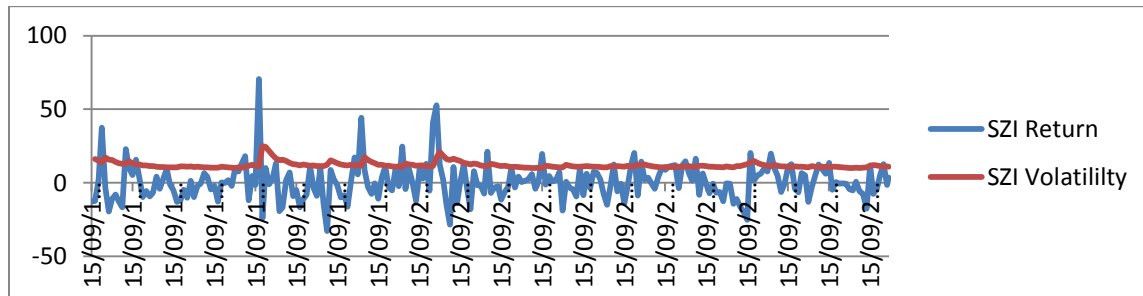


The Shanghai index shows a much more volatile period in the early 1990's with a number of substantial peaks in volatility and a number of corresponding peaks and troughs in returns. Like the 1992 crash, however returns were very high previous to that. The market was volatile until 1996 with another sharp increase and decrease in returns in 1994; however this was more a time of prosperity with very high returns. We can see clearly

that the increase in the returns in 1999 was followed by a period of higher volatility later that year. Volatility and returns again became more erratic post 2008, however not as erratic as the early 1990's.

Shenzhen

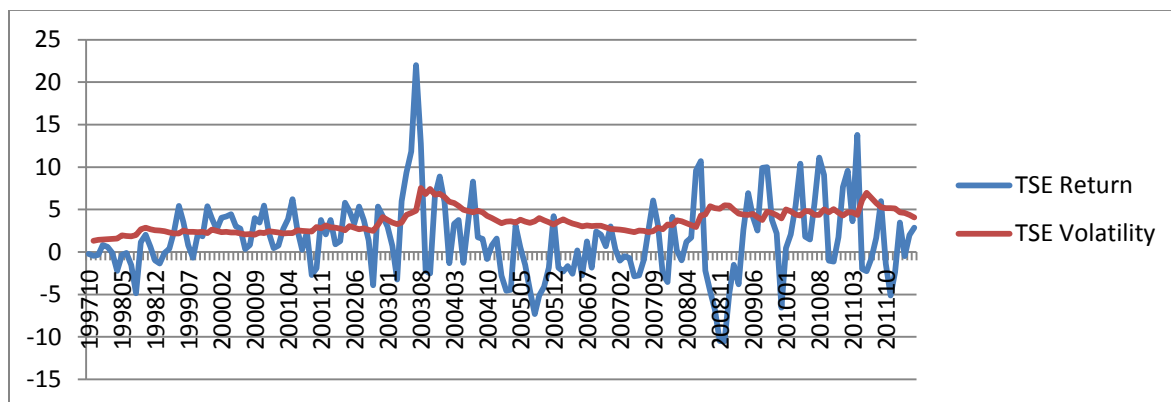
Figure 8 Shenzhen Returns and Volatility



The Shenzhen index returns have some major movements around the same time as the Shanghai such as 1996 peak, however upward and downward movements of returns have created less movement in the volatility. Both large positive and negative returns have similar implications for volatility in this example.

Iran

Figure 9 Iran's Returns and Volatility



It is clear the effect of the upward and downward movements of returns affect volatility, such as the 2003 peak and the downward movement of returns in 2008 for the crash. In recent years from 2008 there has been erratic movement of returns from gains and losses

until the present. Volatility as such has been consistently higher but itself not so erratic.

6.5.2 Volatility Regression Tests

Subsequently we calculated the conditional variances of each market returns, we explore the relationship between the volatility and the policy risk factors by running the OLS regressions on each markets standard deviation. Based on the above section of the adjusted OLS regression analysis, we choose the same variables in the left side of the formula. It is worth noting the problems of heteroscedasticity, autocorrelation and multicollinearity are prevalent similar to the return regression. The first step is to run the standard deviation regression with the political risk variables, secondly, we executed the Breusch-Pagan-Godfrey test for heteroscedsticity and reviewed the Durbin-Watson statistics for autocorrelation. Heteroscedasticity was widespread in all markets except SZI return volatility since the probability of F-statistics is less that 1%. The Durbin-Watson statistics are unanimously less than 2; this suggests that there is autocorrelation in the errors. In order to correct the problems, we did the OLS regression under the HAC (Newey-West) correction.

Figure 10 BPG and Durbin Watson Test for Volatility Regression

BPG Test for Heteroscedasticity					
	FTSE	IPC	SCI	SZI	Iran
F-statistic	3.253698	4.879154	6.945181	1.343138	9.738829
prob. F	0	0	0	0.1956	0
Durbin-Watson statistics for Autocorrelation					
D.W. stat.	0.403275	0.561762	0.423856	0.537888	0.53254

6.5.3 The Analysis of Volatility Regression Results

From (Table 8) it is evident that for the UK all of the government stability variables except Election are significant. Party Change is significant at a 5% level with a coefficient of (-1.34), which means that if the party changes we will see a downward movement of volatility by 1.34%. Votes are significant at a 10% level, with a coefficient of (-0.61). This implies that as votes decrease by one unit, volatility has a downward movement of 0.61%. The Seats variable is significant at a 5% level with a coefficient of

(2.3). This shows a positive relationship between the number of seats won by the leading party and the volatility. A one unit movement in the number of seats won increases the volatility by 21.69%. This seems logical as the more seats the leading government can win, the stronger the government, or more powerful at passing laws and it will be less challenged, however it must be noted that this is highly economically significant and perhaps something for investors to look out for around election time, as it seems to have a large influence on the volatility of stock returns. Under the Socioeconomic Conditions, the only significant variable is Unemployment. It is significant at a 5% level with a coefficient of (0.58), the models suggests that there is a positive relationship between Unemployment and volatility, as such a one unit increase in unemployment rate, the volatility will increase by 0.58%. All of the available variables in Internal Conflict are significant for the UK. With Homicide rate having a 10% level of significance with a coefficient of (1.25). Strikes per person and Riots are both negative and significant. Strikes per person is significant at 5% however the coefficient is so little, it is unlikely to have any noteworthy effect on volatility. Riots is significant at a 1% level, with a coefficient of (-0.87), which implies a one unit increase in riots a 0.87% downward movement in volatility. Civil War is significant at a 1% level with a coefficient of (3.23), illustrating a positive relationship between the variable and the volatility of returns. It is to be expected that Civil War would have a disruptive effect on returns this is just a confirmation of such an assumption. Investment Profile and External conflict were not significant for the UK.

Mexico has two significant variables in Government Stability; the first is Party change which is significant at a 1% level with a coefficient of (1.88). This means that a party change increases volatility by 1.88%. The other significant variable in this category is votes at a 5% significance level, with a coefficient of (-0.03). However statistically significant with a one unit increase in votes volatility is barely altered at just 0.03%. Within Socioeconomic conditions, the GINI variable is significant at a 10% significance level with a coefficient of (0.17). This implies a positive relationship between the wealth Gap and volatility, as it increases by one unit, volatility increases by 0.17%. There are two significant variables in Investment Profile, the first is Economic Freedom, with a significance of 10% and a coefficient of (-0.2), therefore we have a negative relationship

between economic freedom and volatility, as economic freedom increases by one unit , volatility has a downward movement of 0.2%. The other significant variable is Exports at a 1% significance level with a coefficient of (-15.04), this not only is a highly significant negatively related variable it is also very significant in an economic sense as a 1 unit increase in Exports results in a downward movement of volatility by 15.04%, which is quite a substantial shock. The last significant variable is in internal conflicts and it is Strikes per person, which is significant at a 1% level however the coefficient is so small it would have little to no impact on returns. Once more it was not possible to estimate External conflict for the same reasons as China.

For the volatility of the Shanghai Index only two variables are significant. CPI is significant at a 10% level with a coefficient (0.45). This means as inflation increases by one unit the volatility increases by 0.45%. This is the only significant socioeconomic variable. The other significant variable is Homicide Rate squared, with a coefficient of (-1.56) at a 5% significance level, this shows a negative relationship between homicide and volatility. This is the only variable in internal conflict that is significant. The other categories such as Government stability, Investment profile and External War are insignificant and do not tell us anything about the volatility of the returns.

The Shenzhen Index has three significant variables, the first being the GINI index with a coefficient of (0.09). This shows a positive relationship between the wealth gap and volatility, suggesting at the wealth Gap increases by one unit, returns become more volatile by 0.09%. This is the only variable that is significant in the group of Socioeconomic Conditions. The other significant group is the Investment Profile, where the variable Economic Freedom is significant to a 1% level. The coefficient for the variable is (-0.43), this means that as the Economic Freedom increases by one unit the volatility has a downward movement of 0.43%. Economic freedom is a sign of prosperity which may explain why the influence in the volatility is especially small and downward moving. It has a miniscule influence on the overall shape of volatility. The other significant variable under the Investment Profile is the Exchange rate which is significant at a 1% level. It has a negative relationship with volatility with a coefficient of (-1.3). This implies that a one unit increase in the exchange rate a 1.3% downward movement of

volatility. Internal conflict, External Conflict and Government stability were not significant. However we were not able to measure External Conflict as China was not involved in any external wars in the period we have measured and the Military variable was insignificant and irrelevant to the returns and therefore was excluded.

The Iranian regression had no significant variable in the Government Stability category. Socioeconomic conditions had two significant variables; one was GDP per head growth. This was significant at 5% with a coefficient of (1.74); this indicates a positive relationship between volatility and the variable. As growth increased by one unit, the volatility increased by 1.74%. The other variable in this group that had a significant impact on volatility was CPI, with a coefficient of (0.01). This is a positive if small relationship, which indicates a one unit increase in inflation increases volatility by 0.01%. The only other significant variable in this regression was Import which has a 1% significance level and a coefficient of (0.37). This implies another positive relationship with returns in that a one unit increase in imports suggests a 0.37% increase in volatility.

There are a number of variables which were found to be commonly significant, for the UK and Mexico; Party Change was significant with a similar coefficient size, indicating a similar influence on volatility. Votes are significant for both Mexico and the UK and both have a negative relationship with volatility. So as the Votes increase there is a downward movement to volatility, with a small influence on volatility, illustrating its lack of importance in the grand scheme of what influences volatility. The GINI index variable was significant for both Shenzhen and Mexico, both having a positive relationship, with a very minor impact on overall volatility. CPI is significant for both China and Iran with a positive relationship for both variables, again both having relatively small impact on overall volatility. Economic freedom was significant for Shenzhen and Mexico, both of which had negative coefficients, indicating a negative relationship. This variable again is contributing to less than 1% variability of volatility. Homicide rate squared, was significant for both UK and China, however each of the countries had opposite signs. Each impacting returns in roughly the same way, with the coefficients absolute values being similar. (Unusual that it should be positive for the UK). The last variable that has a commonality between the countries is strikes per person, the UK has a positive

relationship and Mexico had a negative relationship, however both have very small coefficients, therefore it may be considered of very little importance in the overall impact on volatility.

Different from the return results, the volatility of stock market returns in the UK and Mexico, are affected by government stability variables, Party Changed, Votes, instead of Election; it is concluded that volatilities of the return in more developed countries have a higher political risk of government stability. There is no common significant variable in Socioeconomic Condition, but that kind of the political risk has important impact on all the countries. Investment profile case major shocks to the volatility in Mexico, China and Iran, which means the developing countries bear more political risk on foreigner trade. The United Kingdom stands most of the stock volatility from the internal conflict while there is no country stock volatility affected by External Conflict.

6.5.4 A comparison of Results between the Returns and Volatility Regressions

There are a substantial number of variables that influence the stock returns and the volatility separately, that are not significant in the other regression. However a number of variables have a common significance, for instance Homicide Rate squared influences both returns and volatility for both China and the UK, proving to be one of the most important variables in our analysis, due to its broad reaching scope and generality. The GINI index Variable is significant for the returns and volatility regression for Shenzhen, both having a positive relationship. However we can see that there is a larger influence on the returns with a coefficient of (0.77) than the volatility with a coefficient of (0.09). This is to be expected at large swings in returns are needed to see movement in volatility, as illustrated graphically by the country returns and volatility series in (*figures 5-9*). The same relationship is true for both Imports and GDP per head growth for Iran, both of the variables have positive relationships with returns and volatility. It is also clear that the variable influence returns more drastically than the volatility, with the coefficient of GDP per head growth for the returns at (8.82) and the coefficient for the same variable on volatility is (1.74). The same is true for imports with the returns coefficient at (1.58) and the volatility regression coefficient for the same variable at (0.37). The last variable

which proves to be significant in both returns and volatility is the CPI of Iran, however the sign is the opposite, with the coefficient of the returns regression at (-0.12) and the coefficient of the volatility regression for the variable at (0.01). In looking at the countries adjusted R-squared it is obvious that overall the variables influence volatility better than they influence returns. The regression on volatility increased each country's adjusted r-squared substantially, which implies an improved explanatory power of the model. The UK's adjusted R-squared went from (0.01) to (0.29), indicating that the variables of political risk can explain volatility of returns more fully than they can the returns themselves. For China the adjusted R-squares was (0.05) for the returns and (0.36) for the volatility, again showing a marked improvement. The adjusted r-squared for the Shenzhen region returns regression was (0.04), whilst the volatility regressions variables fitted the data (0.24). Mexico was a similar story with the variables explaining 3% of the returns while the variables were able to explain 55% of the volatility. Iran's variables were able to explain 18% of returns whilst it could explain 71% of volatility, this is a large difference. This may imply that political risk variables may be very useful in explaining certain shocks that occur in returns and what are the influencing factors in the instability of the market, as opposed to what factors increase and decrease the returns. This is still very useful as investors can evaluate which political risk factors disrupt the market leading both to highs and lows in returns. This study highlights such influential features such as Seats won for the government of the UK, this particular issue being very pertinent in recent years, given the decrease in power of the British governments ruling party, after winning so few seats in the last election; it was forced to form a coalition. These are issues investors should concern themselves with in preparation for investment strategies around the time of future elections. For Mexico the biggest concern given the results should be the exports as it has a large negative impact on volatility, however Civil War has a large negative effect on returns and should also be taken into consideration. For returns the most important variables to consider is China's election season, which has a large negative effect on returns. Iran has two important variables to consider military spending, which has a large negative impact on returns along with GDP per head growth, which positively influences returns. From the results it is apparent that the most important and the most economically significant variables are different for each individual country,

signifying no commonality to be generalised at least for large impacts on volatility and returns.

7.Implications for Investors

When considering investments, investors in the Iranian market should be aware of the positive relationship between, Imports, Tax and the Wealth Gap, Unemployment, GINI, Election and Growth of GDP and the negative relationship between returns and Party Change, returns and Military spending. When investors decide to invest, they will be aware that these are the political risk factors that have the greatest influence in returns. Iran has a variable that is significant in category that we investigated; Government Stability, Socioeconomic Conditions, Investment Profile, therefore the results support of the ICRG model in certain aspects however the relation between Internal and External Conflict is inconclusive. For Mexico the results were very different, the two significant variables were Civil War and Homicide rate squared, however only civil war makes a substantial impact on returns. This supports our original view that the internal turmoil of Mexico has an impact on its stock market; this is a logical assumption as civil war within a country indicates an unstable economy, which may be considered a large political risk. The only category that was significant was internal conflict. Therefore our results suggest that internal conflict has a negative impact on returns and if the given country is subject to serious internal conflict, investors should be cautious. For China the country index and the Shenzhen index is affected by different variables. Socioeconomic conditions are important for the regional index. All except external conflict appears to be relevant factors affecting China's returns. The UK model conveys that Government stability and internal conflict affect the country returns. Internal conflict is the only one of the five categories that impacted the returns in all four countries. Implicating that civil unrest in various forms such as Strikes, Riots and Civil wars, could be generalised. We may therefore say that given the results Internal Conflict will impact returns; however the specific type of Internal Conflict varies from country to country. The results have provided potential investors with some general and country specific risks that may affect their investments in these particular markets.

8. Conclusion

In this paper, we aim to analyze how each component of political risk affects the stock returns and volatility for the United Kingdom, Mexico, China and Iran in the different economic world. Basically, we respectively run the OLS regression on returns and volatility by the same political risk variables and the volatility of the markets returns are captured by the GARCH model.

To sum up the results, it is suggested that the less economically developed countries are likely to be more exposed to political risks than its developed counterpart. This is due to the increased number of challenges faced by a developing country; tougher political decisions have to be made. The results from both the volatility and the returns are mixed and varied. However it is fair to postulate that there are more political variables that influence both volatility and returns for the less developed countries, this is an affirmation of the Beaulieu, Cosset, Essaddam (2005) findings. This implies that the importance of these political risks increase with decreasing economic development and is a central finding within the research.

Considering the five political risk components, the risk of Government Stability has a considerable influence on both stock returns and volatility irrelevant of the country the market operates. This is also true for volatility affected by the Socioeconomic Condition however the returns are affected only by developing countries Socioeconomic Conditions. Investment Profile risk causes similar significant shocks on both returns and volatility in Mexico, China and Iran, which suggests that trade in less developed countries tolerate more risk influence from other countries' policy. Internal Conflict and External Conflict risk exert an impact on returns in Mexico and Iran due to their own war history but no influence on volatility; these results are contrary in the United Kingdom.

Political risk tends to affect more of the returns in less developed countries (China and Iran) while it significantly affects volatility of the more developed countries (the UK and Mexico). Iran is particularly affected by these political risk factors, therefore it would be practical for the government to consider such issues as corporate taxation and military spending when creating policies, as it has a real influence on returns. The two stock

indices chosen for China provide diverse results, which suggest the degree of political risk is changed within the regions. The individual factors with large economic implications appear to be unique within each country and cannot be generalised and applied to other countries. As volatility was affected in both the UK and Mexico, changes in Political Party, in this respect provides information about the likelihood of its survival.

It is undeniable that many of the political factors we have chosen to explore play a noteworthy role in influencing both volatility and returns. It is therefore conceivable that potential investors and governments alike should consider the results presented in this study. The five elements taken from the (IRCG), have been important in influencing volatility and returns over the four countries, however the influence has not been consistent across all of the countries or between the returns and volatility. For this reason there is potential to further explore this area, perhaps on a larger scale, to delve into the relative importance of economic development and to assess if there are any results that are common, that may not have been realised or proven with a comparison of only four countries.

Limitations

One of the greatest challenges in our paper is of collecting correct frequency of data. For one aspect, it is impossible for us to get some data under monthly such as Homicide rate and Human Development Index. For another aspect, we cannot access to the complete data, i.e., the number of strikes for every month; therefore we just get the most influenced of the strikes based on the papers, which limit our paper's accuracy and reliance.

For another big challenge is that the measurement and observation of political risk depends to a large extent of the subjective judgement which is in a quantitative sense a limitation. Soft factors such as psycho-cultural characteristics of risk are difficult to capture as views and opinions frequently change. Psycho-cultural dynamism is a limiting factor when selecting key factors to model. There is a host of scepticism surrounding the ability for the quantification of non-economic variables which is the argument used for the presence of weak systematic approaches in the field Brink (2004). Some critics argue that political risk is too formless and subjective a concept to withstand a quantitative

analysis. The challenge is to transform the qualitative measurements in to discernible quantifiable forms. A potential future study on this topic is recommended for better evaluation of the political risks data from a governmental body such as the national statistics office and perhaps conducted on a larger scale including a larger number of countries.

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Appendix

Table 1 Data Collection- An illustration of the variable explanation, value and source of the given variable.

Data Collection			
Variables	Explanation	Value	Source
Returns			
SCI	return on Shanghai Composite Index	$=100*\ln(P_t/P_{t-1})$	DataStream
SZI	return on Shenzhen Component Index	$=100*\ln(P_t/P_{t-1})$	DataStream
FTSE	return on Financial Times Stock Exchange 100 Index	$=100*\ln(P_t/P_{t-1})$	DataStream
IPC	return on Indices de Precios y Cotizaciones	$=100*\ln(P_t/P_{t-1})$	DataStream
TSE	return on Tehran Stock exchange	$=100*\ln(P_t/P_{t-1})$	DataStream
σ	standard deviation of returns		
Government Stability			
Ey	if the month is election month	dummy variable if yes,1; if not 0	electionguide.org
PC	IF the party is changed in the election month	dummy variable if yes,1; if not 0	electionguide.org
V	voting won by leading party	percentage	electionguide.org
SS	Senate Seats won by leading party	percentage	electionguide.org
Socioeconomic Condition			
GR	growth rate of GDP per head	$=\ln(G_t/G_{t-1})$	DataStream
UE	unemployment rate, total	percentage	DataStream
HDI	human development index	percentage	UNDP.org
GINI	GINI index	percentage	DataStream, Statistics
CPI	consumer price index	percentage	DateStream
Investment Profile			
E	export percentage of GDP	percentage	DataStream
I	import percentage of GDP	percentage	DataStream
T	tax	percentage	worldwide-tax.com
EF	economic freedom	score from1 to 101	DataStream
Ex	exchange rate with USD		DataStream
Internal Conflict			
S	no. of strikes	numbers	BBS, The Epoch Times Labour Statistics
Sp	no. of people on strikes	numbers	BBS, The Epoch Times Labour Statistics
C	homicide crime rate	percentage	unodc.org
CW	if the current month is in civil war	dummy variable if yes,1; if not 0	BBC
Riots	if the current month is in riots	dummy variable if yes,1; if not 0	BBC,
DW	no. of News worthy Incidents in Drug War, special for Mexico	numbers	BBC
External Conflict			
EC	if the current month is in external conflict	dummy variable if yes,1; if not 0	BBC
M	military percentage of gdp	percentage	worldbank.org

Table 2: Descriptive Statistics- A Summary of the Data for Each of the Four Countries

The United Kingdom (338 observations, from April, 1982 to March, 2012)																						
	Government Stability				Socioeconomic Condition						Investment Profile					Internal Conflict					External Conflict	
	Ey	SS	V	PC	GDPH	GR	GINI	CPI	HDI	UE	TAX	EF	Ex	E	I	C	CW	RIOTS	S	SP	M	EW
Mean	0.018	0.564	40.857	0.003	9977	0.045	36.385	87.955	0.806	6.040	33.219	77.880	0.621	0.166	0.176	1.561	0.320	0.467	0.089	8267.751	3.133	0.041
Median	0	0.550	41.9	0	10010	0.05	38	90.45	0.816	5.35	33	77.9	0.622	0.167	0.173	1.6	0	0	0	0	2.7	0
Maximum	1	0.634	43.9	1	10490	0.08	41	121.8	0.947	10.6	50	80.4	0.938	0.311	0.294	2.051	1	1	3	1500000	4.1	1
Minimum	0	0.471	35.2	0	9290	-0.05	28	61.9	0.744	2.4	28	74.5	0.475	0.073	0.101	1.174	0	0	0	0	2.3	0
Std. Dev.	0.13	0.05	3.06	0.05	0.37	0.02	3.70	16.98	0.04	2.80	4.81	1.03	0.07	0.06	0.05	0.17	0.47	0.50	0.33	85579.61	0.72	0.20
Skewness	7.30	0.15	-1.05	18.30	-0.20	-1.82	-0.97	-0.09	-0.09	0.26	1.95	0.28	0.68	0.55	0.61	-0.06	0.77	0.13	4.50	16.06	0.34	4.60
Kurtosis	54.35	1.83	2.53	336.00	1.86	7.86	3.02	2.09	1.57	1.53	6.90	3.65	4.76	2.49	2.82	4.58	1.60	1.02	27.74	276.11	1.32	22.19
Jarque-Bera	40142.75	20.52	65.13	1580586	20.47	553.59	53.36	12.05	29.13	34.14	428.18	10.36	69.45	20.73	21.22	35.25	61.39	56.34	9756.95	1064954	46.07	6377.63
Probability	0	4E-05	0	0	4E-05	0	0	0.0024	0	0	0	0.0056	0	0	0	0	0	0	0	0	0	0

Mexico Statistics (290 observations from January, 1988 to March, 2012)																							
	Government Stability					Socioeconomic Codition						Investment Profile					Internal Conflict						EC
	Ey	PC	SEAT	SS	V	CPI	GDPH	GR	GINI	HDI	UE	EF	E	I	Ex	TAX	CW	DW	C	S	SP	ROIT	M
Mean	0.01	0.01	0.50	0.66	44.35	53.77	6299.35	0.07	52.7	0.7	3.24	63.201	0.24	0.22	8.14	33.2	0.76	0.6483	16.02	322.1	33293.2	0.0172	0.54
Median	0	0	0.52	0.74	45.54	60.51	6724.10	0.10	52.4	0.72	2.58	63.1	0.25	0.25	9.37	34	1	0	18.4	225	22660	0	0.5
Maximum	1	1	0.80	0.98	50.7	104.6	10145.3	0.19	55.1	0.85	5.47	68.3	0.36	0.37	14.7	37	1	13	21.5	757	117800	1	0.7
Minimum	0	0	0.412	0.47	0	6.804	2447	-0.443	50.1	0.63	2.58	57.1	0.13	0.11	2.25	28	0	0	8.118	147	9375	0	0.4
Std. Dev.	0.12	0.08	0.08	0.20	8.54	31.46	2267.07	0.14	1.80	0.05	0.94	2.86	0.07	0.08	3.70	2.77	0.43	1.74	4.07	172.4	28068.7	0.13	0.06
Skewness	8.34	11.92	1.02	0.29	-3.01	-0.09	0.12	-2.32	0.07	0.08	1.29	-0.44	-0.19	-0.31	-0.40	-0.83	-1.19	3.68	-0.29	0.90	1.37	7.42	0.37
Kurtosis	70.51	143	4.37	1.41	15.47	1.56	1.91	8.51	1.52	1.57	3.41	2.67	1.63	1.65	1.74	2.38	2.41	19.93	1.80	2.84	4.23	56.02	2.94
Jarque-Bera	58437.4	243721	72.57	34.8	2318	25.57	15.16	630.8	26.5	25	82.0	10.86	24.5	26.8	27	37.9	72.3	4116.5	21.46	39.12	108.82	36623.	6.54
Probability	0	0	0	0	0	0	0.00051	0	0	0	0	0.004	0	0	0	0	0	0	2E-05	0	0	0	0.04

China Statistics (232 observations from December, 1990 to March, 2012)																	
	GS	Socioeconomic Condition						Investment Profile					Internal Conflict				EC
	EY	CPI	GDPH	GR	GINI	HDI	UE	E	I	EF	Ex	TAX	C	RIOTS	SP	S	M
Mean	0.017	104.906	3803.657	0.129	45.737	0.603	4.993	24.454	21.480	63.271	7.755	31.345	1.714	0.086	1067.073	0.384	1.967
Median	0	102.7	3160	0.132	46	0.6	5.4	22.636	20.518	63.1	8.277	33	2	0	0	0	2
Maximum	1	127.7	5340	0.253	55	0.687	6.5	43.340	36.249	68.3	8.708	33	2.043	1	30800	7	2.5
Minimum	0	97.8	426.6	-0.107	35.92	0.51	3.4	8.546	8.144	57.1	5.5	25	1.115	0	0	0	1.6
Std. Dev.	0.130	6.831	1422.280	0.083	4.852	0.052	0.976	7.870	6.599	3.244	0.839	3.248	0.378	0.281	3541.361	1.054	0.196
Skewness	7.417	1.634	1.176	-0.767	-0.092	0.025	-0.097	0.499	0.354	-0.409	-1.178	-1.447	-0.728	2.949	4.892	3.849	-0.252
Kurtosis	56.018	5.043	3.138	4.047	2.466	1.838	1.501	2.407	2.077	2.091	3.069	3.094	1.697	9.694	31.728	19.407	2.567
Jarque-Bera	29298.99	143.519	53.684	36.614	3.084	13.076	22.072	13.031	13.084	14.472	53.681	81.062	36.912	769.385	8903.253	3174.949	4.266
Probability	0	0	0	0	0.214	0.001	0.000	0.001	0.001	0.001	0	0	0	0	0	0	0.118

Iran Statistics (175 observation from Spetember, 1997 to March, 2012)																						
	Government Stability					Socioeconomic Condition						Investment Profile				Internal Conflict					External Conflict	
	V	Ey	PresV	Pre_C	PC	CPI	GDPH	GR	UE	GINI	HDI	E	Ex	EF	TAX	I	C	RIOTS	S	Sp	M	EW
Mean	0.58	0.034	0.683	0.006	0.017	132.03	4026.33	0.069	12.7	40.94	0.661	27.53	7055.69	41.5	29.85	21.4	2.775	0.046	0.109	458.914	2.635	0.063
Median	0.65	0	0.7	0	0	110.91	3948.9	0.136	12.2	43	0.671	32	8824	42.8	25	22	2.95	0	0	0	2.5	0
Maximum	0.67	1	0.78	1	1	289.7	7110	0.275	16.2	44.5	0.709	33	13384.9	50.5	54	26	3	1	1	15000	3.9	1
Minimum	0.4	0	0.617	0	0	58.44	1895	-1.060	10.4	38.3	0.598	14	1748.27	34.5	12	15	2.5	0	0	0	1.8	0
Std. Dev.	0.1	0.182	0.068	0.076	0.130	64.432	1552.41	0.316	1.785	2.581	0.038	5.761	3600.26	4.45	12.84	3.444	0.228	0.209	0.312	2043.09	0.707	0.243
Skewness	-0.8	5.119	0.380	13.115	7.440	0.907	0.197	-3.083	0.623	0.008	-0.221	-0.986	-0.673	0.05	1.109	-0.542	-0.280	4.350	2.516	5.614	0.280	3.602
Kurtosis	2.27	27.202	1.512	173	56.351	2.704	1.805	11.320	2.353	1.128	1.678	2.793	1.746	2.057	2.941	2.204	1.158	19.923	7.332	35.955	1.819	13.976
Jarque-Bera	24.3	5035	20.37	215760	22369	24.627	11.536	786.41	14.4	25.56	14.172	28.671	24.684	6.556	35.904	13.175	27.027	2640.14	321.55	8838.435	12.461	1256.94
Probability	0.00	0	0.000	0	0	0.000	0.003	0	0.001	0.000	0.001	0.000	0.00	0.038	0	0.001	0.000	0	0	0	0.002	0

Table 3 Correlation- An illustration of the relationship between the variables used in the study for each country, highly correlated variables are highlighted

Correlation: The United Kingdom																					
	Government Stability				Socioeconomic Condition					Investment Profile					Internal Conflict					External Conflict	
	EY	PC	SS	V	CPI	GR	GINI	HDI	UE	E	EF	Ex	I	TAX	C	Riots	CW	SP	S	M	EW
EY	1.000	0.405	0.022	0.034	-0.042	0.047	-0.044	-0.030	0.030	0.029	-0.015	-0.026	0.018	0.073	0.002	0.009	0.004	-0.010	0.032	0.019	-0.028
PC	0.405	1.000	0.078	0.042	0.011	0.007	0.024	0.014	-0.012	0.025	-0.079	-0.005	0.017	-0.025	-0.019	0.058	-0.037	-0.005	-0.015	-0.040	-0.011
SS	0.022	0.078	1.000	0.213	0.109	0.069	0.151	0.195	-0.540	-0.359	-0.179	-0.183	-0.381	-0.268	0.506	-0.115	-0.160	-0.022	-0.142	-0.393	0.172
V	0.034	0.042	-0.798	1.000	0.717	0.465	-0.789	0.630	0.621	-0.588	0.440	0.096	0.011	0.588	0.669	0.496	0.567	-0.165	-0.391	0.213	-0.862
CPI	-0.042	0.011	0.109	-0.798	1.000	-0.611	0.873	0.965	-0.807	-0.859	0.148	-0.371	-0.821	-0.782	-0.437	-0.002	-0.832	0.105	0.356	-0.874	-0.019
GR	0.047	0.007	0.069	0.524	-0.611	1.000	-0.509	-0.531	0.328	0.465	-0.149	0.118	0.425	0.528	0.451	-0.243	0.406	-0.016	-0.230	0.328	-0.041
GINI	-0.044	0.024	0.151	-0.637	0.873	-0.509	1.000	0.816	-0.679	-0.816	0.024	-0.497	-0.801	-0.850	-0.457	0.034	-0.793	0.081	0.252	-0.760	0.043
HDI	-0.030	0.014	0.195	-0.789	0.965	-0.531	0.816	1.000	-0.859	-0.850	0.199	-0.353	-0.824	-0.761	-0.375	0.065	-0.808	0.117	0.328	-0.923	-0.029
UE	0.030	-0.012	-0.540	0.621	-0.807	0.328	-0.679	-0.859	1.000	0.880	-0.196	0.465	0.847	0.670	0.108	0.111	0.607	-0.107	-0.233	0.850	-0.094
E	0.029	0.025	-0.359	0.717	-0.859	0.465	-0.816	-0.850	0.880	1.000	-0.276	0.595	0.982	0.795	0.199	0.198	0.684	-0.080	-0.259	0.777	-0.079
EF	-0.015	-0.079	-0.179	-0.588	0.148	-0.149	0.024	0.199	-0.196	-0.276	1.000	-0.314	-0.286	-0.054	-0.171	-0.278	0.013	0.180	0.134	-0.045	-0.107
Ex	-0.028	-0.011	0.172	0.096	-0.019	0.118	0.043	-0.029	-0.094	-0.079	-0.107	1.000	-0.094	-0.059	0.099	0.103	0.080	-0.020	-0.056	0.013	1.000
I	0.018	0.017	-0.381	0.669	-0.821	0.425	-0.801	-0.824	0.847	0.982	-0.286	0.631	1.000	0.780	0.151	0.187	0.695	-0.089	-0.211	0.773	-0.094
TAX	0.073	-0.025	-0.268	0.588	-0.782	0.528	-0.850	-0.761	0.670	0.795	-0.054	0.450	0.780	1.000	0.233	-0.174	0.682	-0.068	-0.227	0.684	-0.059
C	0.002	-0.019	0.506	0.630	-0.437	0.451	-0.457	-0.375	0.108	0.199	-0.171	0.250	0.151	0.233	1.000	-0.257	0.156	-0.085	-0.284	0.143	0.099
Riots	0.009	0.058	-0.115	0.011	-0.002	-0.243	0.034	0.065	0.111	0.198	-0.278	0.132	0.187	-0.174	-0.257	1.000	0.121	-0.075	0.000	0.059	0.103
CW	0.004	-0.037	-0.160	0.496	-0.832	0.406	-0.793	-0.808	0.607	0.684	0.013	0.212	0.695	0.682	0.156	0.121	1.000	-0.066	-0.183	0.886	0.080
SP	-0.010	-0.005	-0.022	-0.165	0.105	-0.016	0.081	0.117	-0.107	-0.080	0.180	-0.087	-0.089	-0.068	-0.085	-0.075	-0.066	1.000	0.274	-0.094	-0.020
S	0.032	-0.015	-0.142	-0.391	0.356	-0.230	0.252	0.328	-0.233	-0.259	0.134	-0.138	-0.211	-0.227	-0.284	0.000	-0.183	0.274	1.000	-0.222	-0.056
M	0.019	-0.040	-0.393	0.567	-0.874	0.328	-0.760	-0.923	0.850	0.777	-0.045	0.265	0.773	0.684	0.143	0.059	0.886	-0.094	-0.222	1.000	0.013
EW	-0.03	-0.01	-0.18	0.44	-0.37	-0.04	-0.50	-0.35	0.46	0.60	-0.31	0.26	0.63	0.45	0.25	0.13	0.21	-0.09	-0.14	0.26	1.00

Correlation: Mexico																					
	Government Stability				Socioeconomic Condition					Investment Profile					Internal Conflict					EC	
	EY	SS	V	PC	CPI	GR	GINI	UE	HDI	E	EF	Ex	TAX	I	C	SP	RIOTS	S	DW	CW	M
EY	1.000	0.001	-0.155	0.705	-0.039	0.037	0.043	-0.048	-0.029	-0.013	-0.014	-0.052	0.021	-0.027	-0.050	0.084	-0.007	0.020	-0.044	-0.001	-0.029
SEATS	0.087	0.708	-0.033	0.120	-0.704	-0.077	0.645	-0.677	-0.748	-0.433	-0.642	-0.585	0.601	-0.399	0.134	0.385	0.065	0.511	-0.397	-0.301	0.400
SS	0.001	1.000	0.282	0.026	-0.942	0.084	0.636	-0.686	-0.932	-0.767	-0.419	-0.926	0.657	-0.786	0.375	0.589	0.022	0.855	-0.361	-0.788	0.365
V	-0.155	0.282	1.000	-0.200	-0.353	0.019	0.169	-0.458	-0.371	-0.242	-0.386	-0.286	0.394	-0.223	-0.129	-0.113	0.028	0.279	-0.348	-0.101	0.567
PC	0.705	0.026	-0.200	1.000	-0.050	0.062	0.066	-0.059	-0.046	-0.006	-0.058	-0.051	0.082	-0.019	-0.014	0.162	-0.005	0.005	-0.031	-0.049	-0.053
CPI	-0.039	-0.942	-0.353	-0.050	1.000	-0.183	-0.652	0.812	0.977	0.841	0.438	0.967	-0.789	0.841	-0.210	-0.558	-0.035	-0.901	0.508	0.745	-0.328
GR	0.037	0.084	0.019	0.062	-0.183	1.000	0.103	-0.198	-0.228	0.145	-0.259	-0.270	0.231	0.027	0.159	0.411	0.032	0.282	-0.151	-0.405	-0.063
GINI	0.043	0.636	0.169	0.066	-0.652	0.103	1.000	-0.514	-0.666	-0.443	-0.513	-0.579	0.519	-0.433	0.357	0.284	0.054	0.589	-0.193	-0.314	0.232
UE	-0.048	-0.686	-0.458	-0.059	0.812	-0.198	-0.514	1.000	0.828	0.547	0.687	0.739	-0.832	0.546	0.242	-0.410	-0.039	-0.608	0.755	0.407	-0.455
HDI	-0.029	-0.932	-0.371	-0.046	0.977	-0.228	-0.666	0.828	1.000	0.784	0.528	0.924	-0.833	0.791	-0.166	-0.547	-0.030	-0.853	0.527	0.698	-0.367
E	-0.013	-0.767	-0.242	-0.006	0.841	0.145	-0.443	0.547	0.784	1.000	0.052	0.839	-0.609	0.983	-0.277	-0.476	0.024	-0.814	0.319	0.730	-0.100
EF	-0.014	-0.419	-0.386	-0.058	0.438	-0.259	-0.513	0.687	0.528	0.052	1.000	0.307	-0.570	0.042	0.164	-0.147	-0.040	-0.195	0.416	0.020	-0.621
Ex	-0.052	-0.926	-0.286	-0.051	0.967	-0.270	-0.579	0.739	0.924	0.839	0.307	1.000	-0.729	0.865	-0.251	-0.618	-0.010	-0.907	0.454	0.825	-0.206
TAX	0.021	0.657	0.394	0.082	-0.789	0.231	0.519	-0.832	-0.833	-0.609	-0.570	-0.729	1.000	-0.617	-0.194	0.486	0.014	0.638	-0.624	-0.534	0.193
I	-0.027	-0.786	-0.223	-0.019	0.841	0.027	-0.433	0.546	0.791	0.983	0.042	0.865	-0.617	1.000	-0.269	-0.549	0.047	-0.813	0.322	0.791	-0.070
C	-0.050	0.375	-0.129	-0.014	-0.210	0.159	0.357	0.242	-0.166	-0.277	0.164	-0.251	-0.194	-0.269	1.000	0.088	0.017	0.279	0.502	-0.335	0.079
SP	0.084	0.589	-0.113	0.162	-0.558	0.411	0.284	-0.410	-0.547	-0.476	-0.147	-0.618	0.486	-0.549	0.088	1.000	-0.048	0.452	-0.267	-0.711	-0.175
RIOTS	-0.007	0.022	0.028	-0.005	-0.035	0.032	0.054	-0.039	-0.030	0.024	-0.040	-0.010	0.014	0.047	0.017	-0.048	1.000	0.029	-0.016	0.034	0.054
S	0.020	0.855	0.279	0.005	-0.901	0.282	0.589	-0.608	-0.853	-0.814	-0.195	-0.907	0.638	-0.813	0.279	0.452	0.029	1.000	-0.374	-0.776	0.090
DW	-0.044	-0.361	-0.348	-0.031	0.508	-0.151	-0.193	0.755	0.527	0.319	0.416	0.454	-0.624	0.322	0.502	-0.267	-0.016	-0.374	1.000	0.213	-0.239
CW	-0.001	-0.788	-0.101	-0.049	0.745	-0.405	-0.314	0.407	0.698	0.730	0.020	0.825	-0.534	0.791	-0.335	-0.711	0.034	-0.776	0.213	1.000	0.068
M	-0.029	0.365	0.567	-0.053	-0.328	-0.063	0.232	-0.455	-0.367	-0.100	-0.621	-0.206	0.193	-0.070	0.079	-0.175	0.054	0.090	-0.239	0.068	1.000

Correlation: China																
	GS	Socioeconomic Condition					Investment Profile					Internal Conflict				EC
	EY	CPI	GR	GINI	HDI	UE	E	EF	Ex	I	TAX	RIOTS	C	SP	S	M
EY	1	0.012	0.0554	-0.017	-0.013	-0.012	0.0377	-0.005	-0.026	0.064	-0.019	0.0803	0.0044	-0.037	-0.044	-0.031
CPI	0.012	1	-0.033	-0.171	-0.432	-0.426	-0.284	0.1208	-0.069	-0.215	0.105	-0.053	0.1739	-0.041	-0.036	-0.302
GR	0.0554	-0.033	1	0.2738	0.3382	0.3425	0.4957	0.4278	-0.231	0.4923	-0.235	0.2072	-0.416	0.1677	0.1907	0.1262
GINI	-0.017	-0.171	0.2738	1	0.8219	0.8424	0.6022	0.5894	0.3333	0.6067	-0.488	0.1936	-0.628	0.2414	0.3812	-0.026
HDI	-0.013	-0.432	0.3382	0.8219	1	0.975	0.742	0.6067	0.1233	0.6846	-0.678	0.2388	-0.858	0.3233	0.4452	0.1173
UE	-0.012	-0.426	0.3425	0.8424	0.975	1	0.7623	0.6658	0.1278	0.7306	-0.624	0.2616	-0.805	0.3059	0.4181	0.1955
E	0.0377	-0.284	0.4957	0.6022	0.742	0.7623	1	0.5719	0.1344	0.934	-0.298	0.3715	-0.673	0.3073	0.2618	0.1452
EF	-0.005	0.1208	0.4278	0.5894	0.6067	0.6658	0.5719	1	-0.363	0.6261	-0.588	0.2111	-0.733	0.2909	0.407	0.4939
Ex	-0.026	-0.069	-0.231	0.3333	0.1233	0.1278	0.1344	-0.363	1	0.1024	0.3712	0.0528	0.2631	-0.074	-0.193	-0.681
I	0.064	-0.215	0.4923	0.6067	0.6846	0.7306	0.934	0.6261	0.1024	1	-0.267	0.3489	-0.589	0.2831	0.2328	0.2006
TAX	-0.019	0.105	-0.235	-0.488	-0.678	-0.624	-0.298	-0.588	0.3712	-0.267	1	-0.045	0.8145	-0.251	-0.479	-0.197
RIOTS	0.0803	-0.053	0.2072	0.1936	0.2388	0.2616	0.3715	0.2111	0.0528	0.3489	-0.045	1	-0.237	0.1118	0.0573	0.0489
C	0.0044	0.1739	-0.416	-0.628	-0.858	-0.805	-0.673	-0.733	0.2631	-0.589	0.8145	-0.237	1	-0.349	-0.491	-0.228
SP	-0.037	-0.041	0.1677	0.2414	0.3233	0.3059	0.3073	0.2909	-0.074	0.2831	-0.251	0.1118	-0.349	1	0.7263	0.0915
SP	-0.044	-0.036	0.1907	0.3812	0.4452	0.4181	0.2618	0.407	-0.193	0.2328	-0.479	0.0573	-0.491	0.7263	1	0.1157
M	-0.031	-0.302	0.1262	-0.026	0.1173	0.1955	0.1452	0.4939	-0.681	0.2006	-0.197	0.0489	-0.228	0.0915	0.1157	1

Correlation: Iran																					
	Government Stability					Socioeconomic Condition					Investment Profile					Internal Conflict				External Conflict	
	EY	PC	SS	PRESC	PreV	CPI	UE	GR	GINI	HDI	E	EF	Ex	I	TAX	C	SP	RIOTS	S	M	EW
EY	1.000	0.701	0.073	0.402	0.005	-0.023	0.028	0.058	-0.077	0.019	0.028	0.041	-0.018	0.024	0.070	0.030	-0.043	0.109	-0.067	0.069	-0.049
PC	0.701	1.000	0.051	-0.010	0.029	-0.035	-0.013	0.068	-0.054	-0.008	0.012	-0.006	-0.020	0.011	0.049	0.016	-0.030	-0.029	-0.047	0.029	-0.035
SS	0.073	0.051	1.000	-0.032	-0.075	0.579	0.277	-0.271	-0.032	0.617	0.558	0.268	0.544	0.537	-0.043	0.381	0.085	0.156	0.186	-0.295	-0.476
PRESC	0.402	-0.010	-0.032	1.000	-0.075	-0.019	-0.026	0.016	-0.077	0.021	0.073	0.154	0.043	0.080	-0.029	0.060	-0.017	-0.017	-0.027	0.071	-0.020
PreV	0.005	0.029	-0.075	-0.075	1.000	-0.649	0.241	-0.399	-0.743	-0.694	-0.463	-0.432	-0.425	0.067	0.197	-0.657	-0.009	-0.143	-0.051	0.406	0.062
CPI	-0.023	-0.035	0.579	-0.019	-0.649	1.000	-0.068	0.119	0.527	0.883	0.711	0.503	0.767	0.345	-0.323	0.800	0.016	0.231	0.108	-0.680	-0.285
UE	0.028	-0.013	0.277	-0.026	0.241	-0.068	1.000	-0.200	-0.464	-0.146	-0.239	-0.515	-0.393	-0.284	0.713	-0.443	0.029	-0.019	0.114	0.446	-0.250
GR	0.058	0.068	-0.271	0.016	-0.399	0.119	-0.200	1.000	0.237	0.120	0.005	0.265	-0.056	-0.210	0.200	0.299	-0.109	-0.073	0.025	0.183	0.037
GINI	-0.077	-0.054	-0.032	-0.077	-0.743	0.527	-0.464	0.237	1.000	0.506	0.209	0.235	0.360	-0.075	-0.584	0.520	-0.118	0.128	-0.043	-0.564	0.322
HDI	0.019	-0.008	0.617	0.021	-0.694	0.883	-0.146	0.120	0.506	1.000	0.885	0.708	0.843	0.519	-0.304	0.893	0.032	0.200	0.106	-0.485	-0.422
E	0.028	0.012	0.558	0.073	-0.463	0.711	-0.239	0.005	0.209	0.885	1.000	0.844	0.916	0.761	-0.291	0.877	0.090	0.149	0.090	-0.342	-0.610
EF	0.041	-0.006	0.268	0.154	-0.432	0.503	-0.515	0.265	0.235	0.708	0.844	1.000	0.808	0.733	-0.437	0.851	0.106	0.073	0.048	-0.214	-0.322
Ex	-0.018	-0.020	0.544	0.043	-0.425	0.767	-0.393	-0.056	0.360	0.843	0.916	0.808	1.000	0.795	-0.561	0.875	0.090	0.171	0.081	-0.550	-0.384
I	0.024	0.011	0.537	0.080	0.067	0.345	-0.284	-0.210	-0.075	0.519	0.761	0.733	0.795	1.000	-0.455	0.586	0.133	0.047	0.088	-0.135	-0.407
TAX	0.070	0.049	-0.043	-0.029	0.197	-0.323	0.713	0.200	-0.584	-0.304	-0.291	-0.437	-0.561	-0.455	1.000	-0.457	-0.045	-0.084	0.033	0.631	-0.363
C	0.030	0.016	0.381	0.060	-0.657	0.800	-0.443	0.299	0.520	0.893	0.877	0.851	0.875	0.586	-0.457	1.000	0.024	0.154	0.083	-0.468	-0.313
SP	-0.043	-0.030	0.085	-0.017	-0.009	0.016	0.029	-0.109	-0.118	0.032	0.090	0.106	0.090	0.133	-0.045	0.024	1.000	-0.050	0.645	0.015	-0.059
RIOTS	0.109	-0.029	0.156	-0.017	-0.143	0.231	-0.019	-0.073	0.128	0.200	0.149	0.073	0.171	0.047	-0.084	0.154	-0.050	1.000	-0.077	-0.217	-0.057
S	-0.067	-0.047	0.186	-0.027	-0.051	0.108	0.114	0.025	-0.043	0.106	0.090	0.048	0.081	0.088	0.033	0.083	0.645	-0.077	1.000	0.022	-0.092
M	0.069	0.029	-0.295	0.071	0.406	-0.680	0.446	0.183	-0.564	-0.485	-0.342	-0.214	-0.550	-0.135	0.631	-0.468	0.015	-0.217	0.022	1.000	-0.091
EW	-0.049	-0.035	-0.476	-0.020	0.062	-0.285	-0.250	0.037	0.322	-0.422	-0.610	-0.322	-0.384	-0.407	-0.363	-0.313	-0.059	-0.057	-0.092	-0.091	1.000

Table 4 Original Return Regression- This is the original regression, which includes all possible variables. No tests have been performed to ensure the OLS assumptions hold.

Original OLS Regression of all the Variables available										
	The United Kingdom		Mexico		China				Iran	
	FTSE		IPC		SCI		SZI		TSE	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Government Stability										
Election	4.01	*1.83	3.83	0.58	-11.33	0.05	-3.26	-0.52	1.63	0.53
Party Change	-2.54	-0.48	-4.26	-0.45	N/A	N/A	N/A	N/A	-3.83	-0.97
Votes	-0.08	-0.16	-0.09	-0.56	N/A	N/A	N/A	N/A	-8.49	-1
Seats	4.03	0.24	-4.56	-0.28	N/A	N/A	N/A	N/A	-8.49	-1
Socioeconomic Condition										
Growth rate	-0.10	0.00	9.06	1.02	-3.59	-0.3	11.00	0.72	9.17	***3.05
GINI index	-0.28	-0.89	1.36	**2.28	0.32	1	0.38	1.09	1.29	**2.33
Unemployment rate	0.16	0.34	2.07	0.93	-1.51	-0.31	-7	-1.42	3.79	***3.77
CPI	0.02	0.12	0.51	**2.32	-0.35	0.18	-0.43	-1.36	-0.13	***-3.37
Human development index	-35.60	-0.59	-161.91	*1.96	-51.31	-0.44	108.48	0.8	-61.07	-1
Investment Profile										
Economic Freedom	-0.45	-0.63	0.21	0.44252	-0.14	-0.18	0.53	0.58	0.11	0.32
Export	41.39	0.93	-272.36	***-3.38	-0.45	-1.18	-0.52	-1.2	0.24	0.45
Import	-68.18	-1.49	210.45	***3.21	0.33	0.87	0.07	0.17	1.52	***3.05
Tax	-0.15	-0.95	-0.34	-0.54	1.44	**2.56	0.73	1.19	0.23	*1.96
Exchange rate	7.47	1.13	-1.91	*-1.76	-1.57	-0.62	4.02	1.43	0	0.45
Internal Conflict										
Homicide rate	-7.01	-1.51	-0.74	** -2.44	-18.14	*-1.80	-16.98	-1.55	3.05	0.35
Strikes	-0.04	-0.05	0.00	0.01	-1.04	0.39	0.59	0.45	2.05	1.48
Strikes person	0	0.98	0.00	0.72	0.00	0.3	0.00	-0.58	0	-0.15
Riots	-0.50	-0.44	-1.32	-0.31	-0.76	0.79	1.78	0.57	0.88	0.56
Civil war	0.52	0.18	-7.10	-1.5	N/A	N/A	N/A	N/A	N/A	N/A
Drug war for Mexico	N/A	N/A	0.13	0.23	N/A	N/A	N/A	N/A	N/A	N/A
External Conflict										
Military	-1.25	-0.40	20.97	0.9	-0.29	-0.03	15.93	1.66	-12.21	***-4.57
External War	0.60	0.41	N/A	N/A	N/A	N/A	N/A	N/A	1.30	0.44377
R-squared	0.055		0.06		0.10		0.08		0.27	
adj R-squared	-0.008		-0.01		0.04		0.01		0.17	

The coefficient is significant at:

10%

5%

1%

Table 5 Adjusted Returns Regression- The final results after data and regression has been tested and altered to uphold the OLS Assumptions.

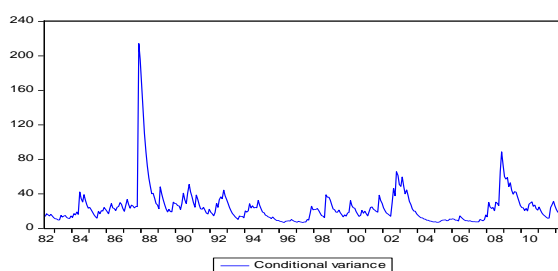
The Adjusted Return OLS Regression										
	The United Kingdom		Mexico		China				Iran	
	FTSE		IPC		SCI		SZI		TSE	
	Coefficient	t-sta t	Coefficien t	t-stat	Coefficien t	t-stat	Coefficien t	t-sta t	Coefficien t	t-stat
Government Stability										
Election	3.80	*1.76	4.43	0.84	-10.97	*-1.79	0.60	0.10	1.37	*1.85
Party Change	-2.27	-0.43	-6.47	-0.49	N/A	N/A	N/A	N/A	-3.43	**2.2
Votes	0.13	0.30	-0.09	-0.47	N/A	N/A	N/A	N/A	-13.04	-1.57
Senate Seat	8.11	0.59	14.76	0.85	N/A	N/A	N/A	N/A	-13.04	-1.57
Socioeconomic Condition										
GDP Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.82	***3.4 3
GINI index	-0.45	-1.54	0.77	1.48	0.27	1.02	0.77	**2.4	0.88	**2.53
Unemployment rate	0.28	0.81	2.93	1.61	-3.37	-1.19	-3.57	-1.12	3.34	***2.9
CPI	-0.01	-0.09	N/A	N/A	-0.32	-1.28	-0.38	*-1.68	-0.12	***-3.3
Human development index	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment Profile										
Economic Freedom	-0.19	-0.36	0.04	0.10	0.12	0.23	0.20	0.28	-0.03	-0.16
Export	-13.13	-0.76	-8.22	-0.47	-0.19	-1.02	-0.37	*-1.87	N/A	N/A
Import	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.58	***3.5 6
Tax	-0.15	-0.99	-0.30	-0.71	1.23	**2.55	0.94	*1.82	0.20	***3.3 4
Exchange rate	4.65	0.83	N/A	N/A	-1.62	-0.91	-0.64	-0.35	0.00	1.19
Internal Conflict										
Homicide rate^2	-1.10	**2.3	0.00	***-2.76	-1.60	***-2.79	-1.60	**2.1	0.88	0.10
Strikes	N/A	N/A	0.00	-0.15	-1.05	-1.37	0.00	**2.3	2.06	1.59
Strikes person	0.00	1.18	0.00	0.22	0.00	1.51	N/A	N/A	0.00	-0.35
Riots	-0.30	-0.41	0.00	0.04	-0.65	-0.36	-0.05	-0.02	0.85	0.48
Civil war	-1.30	-0.87	-5.62	*-1.96	N/A	N/A	N/A	N/A	N/A	N/A
Drug war for Mexico	N/A	N/A	0.13	0.25	N/A	N/A	N/A	N/A	N/A	N/A
External Conflict										
Military	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-11.41	***-4.17
External War	0.97	0.70	N/A	N/A	N/A	N/A	N/A	N/A	0.73	0.93
R-squared	0.05		0.08		0.10		0.08		0.26	
Adj R-squared	0.01		0.03		0.05		0.04		0.18	
The coefficient is significant at:		*0.1	**0.05	***0.01						

Table 6 GARCH Analysis- Showing the estimates of the Volatility of Returns

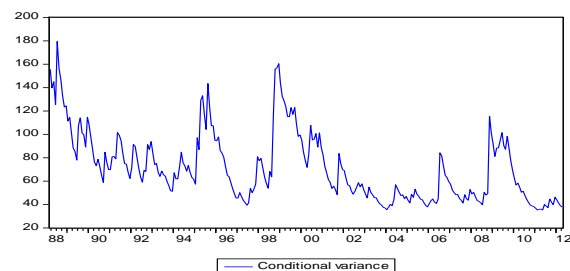
GARCH Analysis										
Method: ML - ARCH (Marquardt) - Normal distribution										
Dependent Variable: RETURN										
Presample variance: backcast (parameter = 0.7)										
GARCH = C(3) + C(4)*RESID(-1)^2 + C(5)*GARCH(-1)										
	The United Kingdom		Mexico		China SCI		Chian SZI		Iran	
	Coefficient	z-stat	Coefficient	z-stat	Coefficient	z-stat	Coefficient	z-stat	Coefficient	z-stat
C	0.7	3.11	1.61	3.12	-0.14	-0.31	0.78	0.6	0.56	2.36
RETURN(-1)	-0.0006	-0.01	0.01	0.21	0.004	0.07	0.17	**2.23	0.56	***8.4
Variance Equation										
C	1.011073	1.82	4.73	1.81	6.27	1.45	29.26	1.59	0.47	1.49
RESID(-1)^2 (a)	0.19	***4.28	0.1	**2.16	0.42	***4.10	0.1	*1.95	0.17	***2.58
GARCH(-1) (b)	0.79	***17.35	0.83	***12.88	0.61	***8.33	0.7	***4.56	0.81	***11.32
coefficient a+b	0.98		0.93		1.03		0.8		0.98	
R-squared	-0.00045		0.000014		-0.01		0.011		0.3	
Adjusted R-squared	-0.003		-0.003		-0.01		0.006		0.29	
D.W. stat.	1.86		1.97		1.52		2.13		1.83	

Diagram 7 Conditional Variance

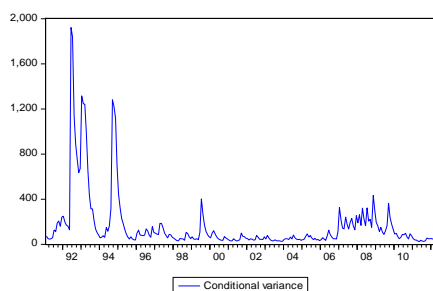
The United Kingdom (First economic world)



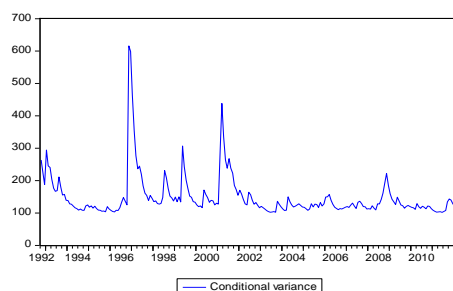
Mexico (Second world)



Third world: China SCI



China SZI



Iran

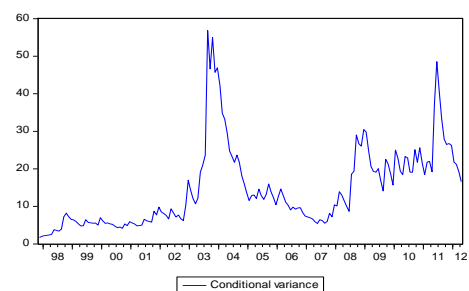


Table 8 Volatility Regression- This is the final regression, which satisfies the OLS assumptions

The Volatility Regression										
	The United Kingdom		Mexico		China				Iran	
	FTSE		IPC		SCI		SZI		TSE	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Government Stability										
Election	-0.19	-0.52	-0.84	-1.58	3.58	0.96	-0.33	-0.34	0.042	0.3
Party Change	-1.34	**_-2.32	1.88	***_2.94	N/A	N/A	N/A	N/A	-0.19	-0.81
Votes	-0.61	*_-1.71	-0.03	**_-2.20	N/A	N/A	N/A	N/A	0.25	0.19
Senate Seat	21.69	**_2.30	-0.06	-0.03	N/A	N/A	N/A	N/A	0.25	0.19
Socioeconomic Condition										
GDP per head	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.74	**_2.41
GINI index	0.26	1.61	0.17	*_1.68	-0.31	-1.44	0.09	*_1.74	-0.13	-1.27
Unemployment rate	0.58	**_2.56	-0.07	-0.24	0.49	0.19	-0.02	-0.03	-0.06	-0.33
CPI	0.02	0.5	N/A	N/A	0.45	*_1.88	-0.012	-0.4	0.01	**_2.07
Human development index	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Investment Profile										
Economic Freedom	-0.52	-1.38	-0.2	*_-1.90	-0.31	-0.71	-0.43	***_-3.57	-0.05	-0.71
Export	4.77	0.61	-15.04	***_-4.26	-0.02	-0.2	0.02	0.54	N/A	N/A
Import	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.37	***_2.95
Tax	-0.05	-0.97	-0.12	-1.55	0.3	0.98	0.06	0.74	0.01	0.34
Exchange rate	3.56	0.97	N/A	N/A	-2.25	-1.42	-1.3	***_-4.45	0	-0.88
Internal Conflict										
Homicide rate^2	1.25	*_1.67	0	0.59	-1.56	**_-2.03	0.37	1.17	-0.43	-0.83
Strikes	N/A	N/A	0	-0.14	-0.52	-1.3	-0.02	-0.12	0.03	0.11
Strikes person	0	**_-2.10	0	***_3.77	0	1.03	N/A	N/A	0	-1.28
Riots	-0.87	***_-2.82	-0.48	-1.09	-0.06	-0.09	-0.13	-0.27	-0.13	-0.69
Civil war	3.23	***_4.18	1.33	1.51	N/A	N/A	N/A	N/A	N/A	N/A
Drug war for Mexico	N/A	N/A	0.05	1.01	N/A	N/A	N/A	N/A	N/A	N/A
External Conflict										
Military	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.74	-1.25
External War	0.59	1.36	N/A	N/A	N/A	N/A	N/A	N/A	0.31	1.07
R-squared	0.32		0.58		0.39		0.28		0.74	
Adj R-squared	0.29		0.55		0.36		0.24		0.71	
The coefficient is significant at:		*0.1	**0.05	***0.01						