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Performance of Islamic stocks versus conventional stocks during crisis and non crisis period: Evidence from MENA region.

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Abstract:

The purpose of this thesis is to examine the performance of both Islamic and conventional stocks, and to investigate whether the Islamic filtering criteria acts as a shield of protection for investors during crisis or not, based on a panel sample of 12 countries in the MENA region covering 10 different sectors from 1998-2018. Using panel fixed effect regression. We divided out sample into three periods; 1998-2006 pre-crisis period, 2007-2008 crisis period and 2009-2018 post crisis period. Our main finding is that the filtering criteria has a positive relation with the returns significant for the post crisis period and positive significance for the two other periods; crisis and pre crisis.

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1. Introduction:

There is a growing interest and demand for Islamic instruments on a global scale. Over the last two decades, the market for ethics-filtered investments have been developing rapidly in conventional markets and in the recently developing Islamic financial markets. Islamic Law prohibits certain activities such as interest, gambling and any transaction that lacks transparency. Thus, many assets and financial strategies to be excluded from the Islamic financial markets. This created the need to innovate new products or tailor the existing ones. An example for this is Sukok that are issued instead of the conventional bonds. Sukok are successfully used to finance Africa's infrastructure. In addition, takafol is used as a method of insurance instead of the conventional method.

The fastest growing segment of the global financial industry is considered to be Islamic investments, as it is expected to yield good returns and bases the investment decision on ethical precepts preferred by some investors in Islamic countries. In addition, Standard & Poor's predicts that the Islamic financial services will grow to $4 trillion by 2020 at a rate of 10% per annum (S&P Ratings2012). Global Islamic financial asset was estimated to reach USD $2.1 trillion at year-end 2016 (S&P Ratings2016).

Investors in the Islamic Indices are not limited to Muslims only. Non-Muslims are also interested for two main reasons. The first one is using it as a method of diversification, where they invest in both conventional and Islamic instruments. The second one is investing in what seems to be an ethically accepted investment. Moreover, Islamic indices is considered as a method of diversification, it is considered an alternative

investment strategy especially after the global financial crisis. After the financial crisis, many researchers aimed to look for methods that would limit the probability of the reoccurrence of such event and it was assumed that Islamic Indices could be a possible solution. Accordingly, many countries are now interested in the Islamic banking for diversification purpose. "A report by the State Bank of Pakistan confirms that the Islamic banking is not directly infected by the crisis."(Anwar, 2012).

That derived our interest to study the performance of shariah companies. Evaluating the Islamic Indices as a method of diversification. Shariah firms could be less risky compared to the conventional because of their characteristics such as low leverage. Leading to a lower systematic risk during recession and expansion periods. Another reason is that the financial sector that is excluded from Islamic indices this sector is hit the most during the latest financial crisis. Having both indices in your portfolio makes it more diversified due to the different approaches applied when forming the index, which allows any investor more diversification benefits. This raises our attention that the selecting criteria affects and differentiates between the performance of Islamic and conventional stocks which will be one of the factors examined by the model done in this thesis.

The aim of this thesis is to examine the performance of Islamic stocks and conventional ones. To further understand, whether the Islamic filtration method helps in choosing better/safer investment options during the crisis, pre-crisis and post crisis periods giving more attention to the crisis period.

The rest of the thesis is divided into the following; the second section will summarize and assess the literature review. The research question is presented in the third section. The

Data is discussed in forth section. The fifth section presents the model and methodology for our test and lastly, the concluding points are summed up in the last section.

2. Problem Statement:

In this thesis, we are going to investigate the relation between key financial ratios and stock's returns and whether the filtering criteria for Islamic stocks is what caused the difference in the performance between the Islamic and conventional indices, as this is the research gap found. This will be done by testing the relation between the return of the stock and key financial ratios. The difference in the performance will be tested by adding a dummy variable to differentiate whether the firm is shariah compliant or not for all the three portfolios during different times throughout the crisis and non-crisis time (classified into pre-crisis and post crisis).

The specific research questions of this thesis would be, whether the screening criteria of Islamic stocks affect their returns or not in a different way than conventional ones? And whether such effects differ in different circumstances such as the crisis or non-crisis times?

3. Literature Review and Hypothesis development:

3.1Background on Islamic Financial Sector:

Islamic financial market is now available in 90 countries globally including 50 Muslim countries. The use of financial assets by Muslims goes back to centuries before the establishment of the first Islamic financial institution. The Islamic Financial Industry is divided into three major segments: a) Islamic Banking b) Islamic Takaful c) Islamic Capital Markets. Modern Shariah compliant products are formulated through two methods; either by modifying existing conventional products by eliminating any prohibiting elements and tailoring other features or by the application of Islamic principles and originating a shariah compliant product.

Now, hundreds of banks have been established and millions of Muslims and non-Muslims use their products. According to Deloitte, there are more than 300 Islamic banks present in at least 60 countries and more than 750 Islamic funds with more than $60 billion worth of assets under management. In Egypt, the first shariah- compliant bank was established in 1963 while in Iran all banks should be shariah-compliant. Iran is considered the largest market for the Islamic Banking. The first Islamic Bank was established outside of the Muslim countries was in Britain in 2004.

The history of Islamic financial sector, was a turning point, the oil crisis that occurred in 1970 created enough wealth for oil producing countries. This made Islamic banking shift their focus from retail to corporate and created a need for new investment products to deploy this cash. Moreover, in the early 2000s, Islamic capital markets started growing rapidly and many entities started to raise funds through ethically accepted investments.

The main difference between the Islamic economic system and the conventional one is the prominence of social justice and the laws that are governing it are all from Quran. The core idea in any financial investment is to participate in gain and in loss. Accordingly, the main block is “Murabha” which allows two parties to enter in a deal with a fixed cost plus a profit. This means that the bank will buy the asset and then sell it to the client after adding a markup instead of conventional banks that lend the money plus an interest and use the asset as a collateral.

3.2 Islamic Banking Segment:

Islamic Banks have a stable presence in many countries and are growing. In addition, they participate and have a clear impact on many Islamic countries. They finance infrastructure projects, finance foreign companies and joint ventures in Asia and Middle East. Moreover, Malaysian banks are full of Islamic deposits and are looking for opportunities to invest in Islamic financial instruments.

The main features differentiating Islamic Banks are operating in transactions that are completely free from any predetermined interest rate and gharar but are based on profit and loss sharing arrangements. All activities done are accepted/shariah compliant ones. Moreover, all Islamic banks should have a shariah supervisory board that ensure reviewing the banks activities and their compliance.

Parashar and Venkatesh (2010) testing the performance of Islamic and conventional banks in GCC from 2006 until 2009 using five performance parameters, capital adequacy, efficiency, profitability, liquidity and leverage. Their research showed that capital ratio, leverage and return on equity of Islamic banks decreased more than the conventional ones in the financial crisis while the conventional ones were affected more

in terms of return on average assets and liquidity. Testing the for same but using different methodology, Samad and Hassan (1999) argued that Islamic Banks in Malaysia performed better as they had efficient and more superior managerial skills. Samad (2004) testing the performance of banks in Bahrain concluded that both banks showed the same results in terms of profitability, however, credit risk in Islamic banks was found to be less.

Some argue that Islamic financial instruments mimic the conventional instruments, as the products are similar but only coated or presented differently. However, this was clearly proven incorrect when Islamic banks refused to follow the trend and did not participate in subprime lending and derivatives.

3.3 Islamic Takaful Segment:

Takaful means shared guarantee, it is an Islamic Based insurance system that started in 1970, and the first Islamic insurance company was established in Sudan in1979. The main difference between the Islamic Takaful and the conventional insurance methods is the interest and the uncertainty, which makes the conventional ones non shariah-compliant. Both methods share the same objective but takaful is based on mutual assistance and donation rather than interest. Members pay subscription and divide losses among members through a pooling system instead of paying premiums. Takaful funds are only invested in Long-term shariah compliant products.

According to Research and markets, the Takaful market reached around $19 billion by the end on 2017 and is expected to reach $40 billion by 2023.

3.4 Islamic Capital Market Segment:

Islamic capital markets which is the focus of this thesis was originated due to the liquidity needs that were faced by Islamic banks and operators in the takaful segment. Islamic Capital Market Segment Islamic Indices are created in a way that complies with the Islamic ideology. There is the Shari'ah Advisory Board (SAB) that is considered the highest authority and it gives the guidelines for Islamic Investments. The first Islamic Bond and the first Islamic index were issued in Malaysia in 1983 and 1996 consecutively. Dow Jones Islamic Market Index (DJIM) was formulated in February 1999 and the FTSE Global Islamic Index Series in October 1999.

The method of selecting stocks in an Islamic Index follows two steps. The first step is filtering out stocks based on their line of business; any business activity that does not comply with Shari'ah is automatically disregarded. Examples of sectors that are being omitted are production of alcoholic beverages, pork, pornography, conventional insurance, conventional financial services, tobacco, weapons, gambling…etc. The second step after filtering the stocks is an accounting based filtering method. Financial ratios are looked at to ensure the following: debt to equity must be less than 33%, accounts receivables and cash to total assets should be less than 50%, cash and interest-bearing securities to equity must be less than 33%. In addition, revenues from non-compliant activities are accepted as non-permissible income to revenue if they comply with certain threshold: a maximum of 5% is permitted (FTSE-Russel).

Shariah- compliant portfolios exclude what is referred to as sin stocks that have high returns (Hong and Kacperczyk 2009). Due to social norms investors tend to neglect them,

leading to a higher idiosyncratic risk being compensated with higher average returns (Merton, 1987). Heinkel et al. (2001) concludes that the drop-in demand for those stocks usually lead to a premium in their returns.

With the rapid increase in demand and the positive trend in the developing of Islamic Capital markets, many financial institutions decided to enter in aforementioned market. Example of financial institutions that sell Islamic financial products are Citibank, , Barclays, Morgan Stanley, Merrill Lynch and HSBC sell Islamic financial products while the NewYork and London Stock Exchanges launched Islamic indices to attract Islamic investors to their markets. (Ho et al.) In addition, Dow Jones Islamic Market indices cover market capitalization of more than $10 trillion in over 40 countries. (ADB-IFSB 2015).

The studies that were performed to analyze the performance of stocks in terms of return and risk in different markets show contradicting results. However, few studies focus on the performance in the emerging markets such as MENA region. This thesis aims at covering this research gap with the most recent data by examining the degree of effect of certain financial ratios on the firm's return and performance.

3.5 Stocks Performance in non-crisis Period:

After reviewing different investment tools for both Islamic and conventional ones, this section will cover the comparison between the performance of Islamic stocks and the

conventional while analyzing the reason behind the difference in performance.

According to Mallin et al. (1995) by comparing funds, it was found that ethical funds performed as well as the non- ethical counterparts according to the Sharpe and Treynor measures but slightly better according to Jensen. The reason for this slight increase is the growing aware and interest of investors in ethically accepted investments. The authors also suggest that such phenomenon will continue.

Hoepner et al. (2011) showed that Islamic funds from the six large Islamic financial centers of the GCC countries and Malaysia outperformed the market benchmark due to their main focus in investing in stocks that are expected to grow at a higher rate than the market.

Hakim and Rashidian (2004), using CAPM and Shariah-compliant index (DJIM), Dow Jones World Index (DJW) and Dow Jones Sustainability World Index (DJS) discovered that the Islamic one did better than the world index but less than the sustainable one. Their paper aimed at testing whether the exclusion of certain sectors would hinder the profitability of Islamic indices; however it was shown that it did not. They found that Islamic indices ensure including all market competitive firms through regular monitoring to their components and replacement of firms that are not representative of their sectors.

Bousalam and Hamzaoui (2016), investigating the performance in Moroccan Market. Constructed hypothetical Islamic indices and compared their performance with the conventional ones. It was found out that the Islamic indices out-performed the other one due to the filtering criteria that made the sectors invested in a concentrated high value added industries such as construction and technology sector.

Following the same methodology on French firms, Peillex and Ureche-Rangau (2013) concluded that the Islamic index outperformed conventional indices in both the short and

long run mainly due to the different concentration percentage in different sectors, for example health sector represented 40% of the total Islamic index versus only 7% in the conventional index. Moreover, Al-Zoubi and Maghyereh (2007) testing the VAR from 1996- 2005 for Dow Jones Islamic Index. Indeed, it was concluded that the risk in the Islamic one is less than the conventional ones. It was expected that the reason behind this was the principle of profit and loss sharing concept in the Islamic finance that allows all parties involved to share the profit and bear the losses instead of fixing an amount of return or cost. This principle affects the risk exposure of investors attracts risk averse investors as it exposes them to less risk by at least allowing them to share a portion of their losses with someone else during market turndowns.

On the other hand, Dharani and Natarajan (2011) that analyzed the performance of Islamic and conventional indices in India concluded that there was no difference in the average daily returns of the Nifty Shari'ah index and of the Nifty Index. Moreover, Bauer et al. (2006) concluded that there is no difference in the ethical and conventional instruments in Australia. To further support this argument, Elfakhani, Hassan and Sidani (2007) using 46 Islamic funds and other conventional funds, some Islamic ones outperformed and others under-performed the benchmarks.

Mansor and Bhatti (2011) found that the Islamic Index (KLSI) slightly underperformed the conventional one in Kuala Lumpur (KLCI was found to be a little riskier. The authors suggested that the reason behind this difference in performance is that the Islamic market is still young and its penetration at that time was little causing funds development to be limited.

On the other hand, reference to the recent Islamic Financial Services Stability Report issued in 2018 by the Islamic Financial Services Board, the majority of the Islamic Indices outperformed their conventional benchmarks because of the great exposure to the technology sector which is considered to be the top performer in 2017.

3.6 Stock Performance in crisis Period:

Al-Khazali et al. (2014) found that Islamic indices outperformed their conventional indices during the period of 2007 to 2012. Ho et al. (2014) argued that Islamic indices outperformed their conventional counterparts during the crisis periods because of their conservative nature in asset selecting.

Ashraf (2012) noted that Islamic mutual funds performed better during the recent global economic crisis period in Saudi Arabia. The author believed that Islamic funds provided hedging benefits during different economic conditions due to the managers of IMF having better stock selection ability. Author claimed that conventional funds manager could also benefit from following the Islamic filtering criteria. Mensi et al. (2015) further supported that the Islamic Funds are a better investment in crisis because of their low response to interest rates and monetary policy.

On the other hand, Albaity and Mudor (2012) concluded that there is no difference between the Islamic and conventional indices during different crisis periods stating that the filtering criteria had no effect on the indices performance. Additionally, Shubbar (2010) tried to analyze the performance of Islamic indices and their counterparties using different measures such as CAPM, Jensen's Alpha, and Appraisal Ratio. The test showed that Islamic ones are more stable as they have a lower volatility and are more flexible and

adaptive to changes but conventional ones gave higher returns due to opportunities that are not allowed in Islamic markets.

Based on the above-mentioned literature review, there is no consensus in the performance of Islamic stocks versus conventional ones. Supporters of the idea that Islamic firms outperform the conventional ones explain this by two main reason, concentration and growing awareness. Concentration reason states that Islamic indices differ in their components concentration than the conventional ones. In most cases, they pick the most rewarding/profitable segments of the period leading them to gain higher returns than their conventional ones. In addition, many supporters believe that this reason is what saved the Islamic indices from the financial crisis unlike conventional indices that had a huge concentrated percentage on the financial sector and were greatly affected. The second reason is more behavioral which is the growing interest and demand in what seems to be an ethically accepted investment raising the returns of such indices. People are now more interested in socially, ethically and environmentally accepted investment options rather than the traditional conventional ones. Accordingly, we can state that our hypothesis id that shariah firms behave different that conventional ones and that the filtering criteria could be one of the determinants of such performance.

3.7 Determinants of performance:

Macroeconomic variables affect the performance of the stock market globally. Taking the most common valuation model into consideration that is the discounted cash flow model, we note that it is affected by any change in the expected stream of cash flow and the

discount rate. Both factors depend on the macroeconomic variables such as inflation rate, interest rates and major political events.

One major determinant of the Shariah-compliant stocks is the Shariah principles that control which stocks to be included and which one to be omitted. Only the compliant ones are included, resulting in a smaller pool of investable equities with more volatile returns (Dewandaru et al., 2014; Hussein & Omran, 2005). The higher volatility in returns embeds a higher risk due to the high correlation with the overall market performance and the business cycle. Thus, it is considered that the performance of the Shariah-compliant stocks is more correlated with the fluctuations of the economy.

Kaul (1987) found out that the higher the inflation rate, the higher the demand for a particular Islamic share. Reason for this and since the money supply is influencing the positive relationship between the two that exists, we can conclude that during an expansion in money supply, investors could use the stock market as a safe haven especially the Islamic ones as it is not interest rate driven. Monetary policy during money supply will tend to lower the interest rate leading to investors drawing out and investing in stock markets for a higher return. Conventional stock market is more volatile during high demand and vice versa in case of low demand which is not the case in Islamic markets; though it contains both Muslims and non-Muslims investors, interest rate is not the major driving force for most of its investors.

The increase in the value of stocks is directly and significantly related to the increase in its related profits margins. It was found that during high inflation most Shariah-compliant companies are able to transfer such increase to their customers. (Reilly & Brown, 2011).

The screening process for the Shariah Compliant portfolios makes their risk return profile different from the conventional one. This is due to the implementation of the shariah principles that affect the fundamental values of the firms. The differentiating features in the Islamic stocks is what affected the performance of them and made them a possible safe haven in crisis. Shariah-compliant stocks are usually low levered and smaller than the conventional ones. High leverage ratio in most cases has a positive effect; and that could possibly be the reason why conventional stocks are outperforming the shariah-compliant ones in normal periods. On the other hand, when the financial crisis occurred, the low leverage was a protective shield for the Shariah-compliant portfolios causing it to outperform the conventional ones.

Lee et al. (2010) proved that the risk of socially responsible investment funds decreased as more screens (environment, ethically unaccepted, etc.) are deployed but only to a certain number of screens, after that the risk starts to increase again. They believe that such fund managers are aware that their funds are less diversified after the intense screening so they intentionally choose lower beta stocks in order to decrease the overall risk and compensate for this limited diversification. However, after few screens, the number of stocks with lower beta amongst the group that they can choose from gets more limited and thus the risk of the fund starts to increase. They found that intense screening does more harm than good for the funds as they make negatively affect their risk-adjusted performance. Accordingly, they suggest the screening to be tailored to each group of investors as some people are only concerned with the environment friendly screening while others are more into common sin industries screening thus no need to apply all screens every time.

3.8 Performance Analysis:

Another approach was comparing the performance during bullish and bearish market. Hussein (2004) showed that the FTSE Islamic index generated positive abnormal returns in the bull market while it underperformed in the bear market. It was believed that the under performance in the bearish market was due to the filtering criteria that caused them to exclude some of the best performers. The author claims that the reason for the outperformance was due to avoiding companies with high leverage ratio. Accordingly, we can deduce that the filtering criteria that protected and isolated Islamic funds from the crisis might also hinders their profitability during good times.

Abdullah, Hassan, & Mohamad (2007) analyzed the Malaysian capital markets for the period from 1992- 2001. Their analysis supports the same performance previously stated in the bearish and the bullish period. In addition, by comparing the Islamic, conventional and the market, it was concluded that both Islamic and conventional have poor selection, as they are less diversified than the market by 50% than the diversification level of the market index.

Balcilar et al. (2015) showed that Islamic funds are better in crisis due to the fact that the main sectors they invest in; consumer services, oil & gas, and technology sectors which are considered a safe haven as they showed negative risk exposures during crisis.

Ibrahim (2015) states that when comparing performance of Islamic and conventional indices both show the same trend, as they are composites of the same broad stock market. Alam, Arshad and Rizvi (2015) agreed that both indices are equally exposed to the market fluctuations and that the avoidance in investing in interest did not immune the

Islamic index and was affected as well. Authors suggest that both indices managers need to follow best financial practices and Islamic fund managers should not only depend on the screening criteria to protect them against crisis.

We are going to analyze the determinants of firms' performance and investigate how these factors affected a given firms' profitability during both normal and crisis times and investigate how these factors affected firms' profitability during both normal and crisis times.

4. Data:

We used DataStream to get the variables for 12 MENA region countries: Bahrain, Egypt, Jordan, Israel, Kuwait, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia and United Arab Emirates. For the period from 1998 till 2018 with a total of 12,029 observations covering 10 economic sectors such as Basic Materials, Consumer goods cyclical and non-cyclical, Energy, financials, Health care, Industrials, Technology, Telecommunications and Utilities.

We rely on the most recent Dow Jones filtering criteria for Shariah Compliant; it was done on two steps. The first step was eliminating the firms operating in prohibited activities such as alcohol, gambling, pork and conventional financial activities. The second step was filtering based on three financial ratios: Debt to trailing 36-month average market capitalization, Cash & interest bearing securities to trailing 36-month average market capitalization and Account receivables to trailing 36-month average market capitalization. Those three ratios should be less than 33% for the firm to be Shariah compliant.

To test the determinants of stocks returns and whether the screening criteria affects returns or not we used some financial ratios. It is commonly known that financial ratios have four main sectors; profitability, liquidity, activity and leverage. Profitability ratios evaluate the performance of management in utilizing the company's resources; examples of such ratios are Net Profitability, Net Profit Margin, Return on Equity, Return on Assets and Earnings per Share. Secondly, Liquidity ratios that show the ability of the company to cover its obligations by its existing assets such as Current Ratio, Quick Ratio and Cash to Total Assets. Third type of financial ratios is the activity ratios; they measure the firm's ability of converting balance sheet components into cash and often referred to as efficiency ratios. Examples are Inventory turnover ratio, assets turnover ratio and account receivables turnover ratio. Then finally the leverage ratios. They show the capital structure as in how much is financed by equity and how much is financed by debt such as Debt to Equity ratio and Debt to Assets ratio.

Accordingly, ratios from each of the above-mentioned three major sectors are included in our model to test the relation between the stock price and the financial ratios. Current Ratio (CR), Net Profit Margin (NPM), Return on Equity (ROE), Price Earnings Ratio (PE) and Assets Turnover (ATO). For the leverage ratios coverage, we will use the Islamic filtering criteria only as it is dependent on certain leverage ratios to avoid multicollinearity in our model.

Those ratios were taken into consideration in the model due to their importance as follows:

- **Current Ratio:**

It is calculated by dividing current assets over the current liabilities. Current refers to one year. This ratio measures the ability of the company to settle its short-term liabilities using

its short-term assets. 2:1 is usually the accepted benchmark among companies. More than this ratio means that the company has many current assets that should be utilized in a better way. Lower than this ratio indicates that the company may have a problem paying its current liabilities on time. There are contradicting research results concerning the relation between the CR and stock performance. It is expected that companies with an improving CR trend would have a better impact than a company with a higher ratio but is having a downward trend in CR. According to Ozturk & Karabulut (2017), by testing the relation between stock returns and current ratio for Istanbul Stock Exchange for the period from 2008-2016, noted there is a significant relation between return and CR.

In addition, Dadrasmoghaddam and Akbari (2015) tested the relation between the stock prices and financial rations for firms listed in Iran Stock exchange for the period from 1999 until 2009 using panel data; it was found that there is a significant relation between the CR and stock prices. Opposing authors such as Herawati and Putra claimed that current ratio has no effect on stock prices using the t-test results on data of the food and beverage industries listed on the Indonesia Stock Exchange for the period from 2012 until 2015.

- **Net Profit Margin:**

It is calculated by dividing the net income over the net sales. It is the percentage of revenue remaining after deducting the operating expenses, interest expense, taxes and dividends of preferred stocks. By definition, it shows the net worth of the company based on its earnings and is a good indicator on the company's profitability. It measures the overall profitability of the firm. The higher the ratio, the more efficient is the company at managing the costs

and gaining revenues. There is no benchmark for what is considered an optimal ratio. It is usually compared to the market average or similar companies. Musallam (2018) used data from 26 Qatari listed firms for the period from 2009 until 2015 and stated that NPM has insignificant relation with stock returns. Contrary to this research, Novena Robby Rinjani and Et al. (2013) proved using data from Indonesia Stock Exchange that NPM has a significance influence on the stock price. Mirgan and et al. (2017) used quarterly data for 87 companies traded in ISE-100 for the period from 2012 until 2017 and proved that there is a significant relation between the stock prices and NPM. Anwar (2016) used firms listed on FTSE-100 Index- London Stock Exchange for the period from 2005 until 2014 and the results showed that NPM has positive relation with the stock prices.

- **Return on Equity:**

It is calculated by dividing the net income over the total owner's equity. It is one of the most important profitability metrics and indicates the efficiency of the company's capital employment. (Economic times) the higher the ratio, the more return investors are getting on their money, the better the company is performing. However, a very high ratio compared to the relevant benchmark may indicate that the company is under-capitalized. On the other hand, a low ratio indicates poor management performance. Musallam (2018) used data from 26 Qatari listed firms for the period from 2009 until 2015 stated that ROE has significant positive relation with stock returns. Kabaji and et al. (2012) used data of Jordanian insurance public companies for the period from 2002 until 2007 showed that with the use of a pooled analysis there was a strong positive relation between ROE, ROA & ROI with a strong explanatory power. However, when the authors run a separated

analysis it showed that there is no relation between stock prices and ROE. Shayan (2013) tested the relation between financial ratios and firm's return during different business cycle (growth, maturity and decline) using data from Tehran Stock Exchange for the period from 2005 until 2011. His test showed that returns of firms in growth and decline phases do not have a relation with ROE while those of firms in the maturity phase have a significant relation with ROE. Parzak and Stavarek (2017) using data of listed firms in the energy industry in Prague Stock Exchange and Warsaw Stock Exchange showed that there is no relation between stock prices and ROE for both countries.

- **Earnings per Share:**

It is calculated by dividing the net income over the total number of outstanding shares. It is the most common financial ratio used by current and potential investors. This breaks down the profitability of the company to a per share basis and it evaluates the efficiency of management. It also shows the effect of issuing new shares. The company's revenue may increase but the share may increase at a higher rate causing the earnings per share to go down. A high ratio indicates that the firm may distribute a good amount of dividends to the shareholders or retain the funds for growth opportunities that is reflected in the market value of the company. In both cases, it indicates that the firm is a worthy investment and has a strong financial position.

According to Chang and et al. (2008), EPS ratio has an impact on stock performance on the long run and this was tested using panel integration methods for quarterly data of 75 firms. Musallam (2018) used data from 26 Qatari listed firms for the period from 2009 until

2015 stated that EPS has significant positive relation with stock returns. Al Nimer (2013) used data of 15 publicly listed banks in Amman Stock Exchange (ASE) for the period from 2009 until 2011 showed significant relation between EPS and stock returns. Silviana (2013) used data of banks listed on the Stock Exchange in the period from 2006 until 2010 showed that there is a significant positive relation between EPS and returns. Andrew and Neneng (2013) used Indonesian publicly listed firms in the transportation industry for the period from 2005 till 2011, showed that there is a significant correlation between EPS and stock prices and that it can be used an indicator for future stock price movements.

- **Price -Earnings Ratio:**

It is calculated by dividing the price per share over the earnings per share. It shows the attractiveness of the company's price relative to the earnings available. It shows how much investors are willing to pay for each unit of return. A low P/E ratio indicates that investors are getting more earnings compared to the price they are paying. On the other hand, it may be indicating that investors are not about the firm's future performance and that is why the price is low. Anderson. K. (2005) the price-earnings effect has been thoroughly documented and widely studied around the world. Musallam (2018) proved that P: E ratio does not have a significant relation with the stock returns. Ozturk & Karabulut (2017), by testing the relation between stock returns and financial ratios for Istanbul Stock Exchange for the period from 2008-2016 and found out that there is a significant relation between stock returns and price to earnings ratio. Lewellen (2004) proved that there is a significant relation between stock returns and P: E ratio by using data for listed firms in NYSE for the period from 1995 until 2000.

- **Assets turnover Ratio:**

Asset turnover ratio is a financial ratio that measures the efficiency of the company as it measures the company's ability to turn certain elements on the balance sheet into cash or revenues. It is calculated by dividing the net sales by the total assets. Jabbari and Fathi (2014) used data of all listed firms of Tehran Stock Exchange for the period from 2007-2012 and proved that there is a significant negative relation between returns and assets turnover ratio. Using the data of the same country for all sectors except the financial one from period from 2009-2014, Talebian and Daghbandan (2015) proved that there is a positive relation between returns and ATO. Naimy (2008) used listed firms in NYSE and in Dubai for the period from 2001-2005 and performed two portfolios to test the relation between certain financial ratios and stocks returns. It was proved that ATO had no relation with the returns for Dubai market while it had a significant relation with returns in NYSE.

Our sample includes publicly listed firms in MENA Region for the period of 1998 to 2018. We will divide our sample then into subsamples, from 1998 until 2006 as the pre-crisis period. For years, 2007 and 2008 will be during the crisis. Years from 2009 until 2018, will be after the crisis.

Three different portfolios will be formed. One portfolio for the Shariah compliant stocks to represent the Islamic indices, another for conventional stocks to represent conventional indices and one complete portfolio for the full set of data for all types of firms. In case of having a firm that issues both types of stocks, it will be excluded from the sample.

5. Descriptive statistics:

Tables 1, 2 and 3 below reports the descriptive statistics and Tables 4,5 and 6 reports the correlations of the variables used in the empirical analysis.

5.1 Pre-crisis period portfolio:

For the pre-crisis period that covers years from 1998-2006, the dependent variable which is the yearly stock returns for all firms with total number of observations 2015; average of the return was 22% with a median of 10% ranging from -96% all the way to 324% with standard deviation of 0.6, skewness 1.8 and Kurtosis 5.07.

For the first dependent variable, current ratio of the firm presented in 1601 observations had an average of 3.08 with a median of 1.71 in the range from 0.05 until 133.63, standard deviation of 7.27, skewness 11.6 and Kurtosis 167.59. While our second independent variable; Net profit margin had total number of observations of 2001 with an average of 15.16, median of 9.56 in the range from -237.55 till 261.46, standard deviation highest of them all reaching 36.98, skewness of 0.77 and kurtosis 12.22. The following independent variable used in our model was the return om equity with 2015 total number of observations having an average of 12.2, median of 9.56 for the range from -441.59 till 337.09, standard deviation of 28.75, skewness of -3.66 and kurtosis of 69.52.

Earnings per share had 2013 observations with an average of 5.73, median of 0.39 for the range from zero to 179, standard deviation of 17.12, skewness of 5.19 and kurtosis of 32.52. Price to Earnings had 2005 total number of observations with an average of 24.57,

median of 14.3 for the range from 0.10 until 283 with a standard deviation of 32.86, skewness of 3.87 and kurtosis of 18.56. For the last independent ratio, Assets turnover ratio with a total number of 1314 observations had an average of 0.4452, median of 0.545 for the range from a maximum of 5.83 to a negative minimum of 0.22 with a standard deviation of 0.6312, skewness of 2.292 and kurtosis of 8.94.

Testing for the correlation between the variables in the pre-crisis period, returns were negatively correlated only with EPS (-0.02693) while positively correlated with CR (0.00875), NPM (0.015293), ROE (0.229044), PE (0.172035) and ATO (0.04571).

Current ratio was positively correlated with NPM (0.22568), PE (0.02207) and EPS (0.045191but negatively correlated with ROE (-0.02432) and ATO (-0.08848). NPM was only positively correlated with ROE (0.19908) but negatively correlated with EPS (-0.03246), PE (-0.05673) and ATO (-0.19617). ROE was positively correlated with EPS (0.074567) & ATO (0.138637) but negatively correlated with PE (-0.05982). EPS was negatively correlated with PE (-0.13011) but positively correlated with ATO (0.048192). PE & ATO were negatively correlated (-0.13926).

5.2 Crisis period portfolio:

For the crisis period that covers years 2007&2008, the dependent variable which is the yearly stock returns for all firms with total number of observations 1279 had an average of 3%, median of -6% for the range from -96% as minimum till 276% as maximum, standard deviation as low as 0.54, skewness of 1.76 and kurtosis of 5.21.

First independent variable; current ratio had 1199 as a total number of observations with an average of 3.42, median of 1.72 for the range from 0 till 192.16, standard deviation of

10.83, skewness of 13.34 and high kurtosis of 205.74. Net profit margin with 1266 number of observations had an average of 16.91, median of 10.42 for the range from -252.05 as minimum till 268.08 as a maximum, standard deviation of 41.51, skewness of 0.28 and kurtosis of 13.01. Return on equity with 1278 total number of observations 1278 had an average of 8.58, median of 13.85 from the range from minimum -399.49 till maximum 335.12, standard deviation of 38.29, negative skewness of 3.36 and positive kurtosis of 31.60. Earnings per share had a total number of observations of 1269 had an average of 5.78, median of 0.44 for the range from minimum 0 till maximum 189, standard deviation of 19.04, skewness of 5.57 and kurtosis of 36.70. Price to Earnings variable had 1257 total number of observations with an average of 17.35, median of 11.7 for the range from minimum 0.10 till maximum 283, standard deviation of 22.56, skewness of 6.10 and kurtosis of 52.71. Assets turnover variable had 1279 total number of observations with an average of 0.743542, median of 0.59 for the range from minimum of -0.12 until maximum of 6.77, standard deviation of 0.710698, skewness of 3.229012 and kurtosis of 18.03437.

For the correlation between variables, we noted that returns were positively correlated to all the independent variables as follows: NPM (0.061253), ROE (0.154775), EPS (0.005558), PE (0.034543) and ATO (0.084904) except CR (-0.00129). Current ratio was positively correlated only with NPM (0.0236117) but negatively correlated to other independent variables ROE (-0.03573) EPS (-0.0165) and PE (0.00551) and ATO (-0.084904). NPM was positively correlated with ROE (0.090411) but negatively correlated with EPS (-0.04168), PE (-0.00906) and ATO (-0.20635). ROE was positively correlated with EPS (0.047167) and ATO (0.067901) but negatively correlated with PE (-

0.10164). EPS was positively correlated with PE (0.000609) but negatively correlated with ATO (-0.02307). PE & ATO were negatively correlated (-0.03737).

5.3 Post Crisis period portfolio:

For the post crisis period that covers years from 2009-2018, the dependent variable which is the yearly stock returns for all firms, it had the highest total number of observations among the three portfolios 8735. Returns had an average of 4%, median of -2% for the range from minimum of -100% till maximum or 325%, standard deviation as low as 0.44, skewness of 1.79 and kurtosis of 6.41. Current ratio had 8126 total number observations with an average of 2.6, median of 1.54 for the range from minimum of 0 till maximum of 189.47, standard deviation of 5.47, skewness of 16.10 and kurtosis of 403. Net profit margin with 8602 as a total number of observations had an average of 4.47, median of 5.52 for the range from minimum of 316.27 to maximum of 267.18, standard deviation of 37.03, negative skewness of 2.76 and kurtosis of 25.12. Return on Equity had 8717 total number of observations with an average of 5.33, median of 8.4 for the range from minimum -488.66 to maximum 384.08, standard deviation of 35.63, negative skewness of 3.05 and kurtosis of 45.7. Earnings per share had a total number of observations of 8634 with an average of 3.91, median of 0.19 for the range from 0 as a minimum till 197.68 as a maximum, standard deviation of 15.08, skewness of 6.48 and kurtosis of 55.10. Price to Earnings with 8490 number of observations had an average of 19.62, median of 12.8 for the range from minimum of 0 till maximum of 277.2, standard deviation of 25.76, skewness of 5.07 and kurtosis of 32.97. Assets turnover ratio with 8735 total number of

observations had an average of 0.7236, median of 0.57 for the range from minimum of -0.08 until maximum of 6.71, standard deviation of 0.682, skewness of 2.645 and kurtosis of 11.56.

For the correlation between variables, returns was positively correlated to all independent variables; CR (0.062128), NPM (0.063722), ROE (0.1876), EPS (0.072994) and PE (0.020575) and ATO (0.065473). Current ratio was positively correlated with all independent variables; NPM (0.370148), ROE (0.085539) and EPS (0.061367) but negatively correlated with PE (-0.02245) and ATO (-0.08507). Net profit margin was positively correlated with ROE (0.508572) but negatively correlated with EPS (-0.009521), PE (-0.0598) and ATO (-0.28149). ROE was positively correlated with EPS (0.068465) and ATO (0.060082) but negatively correlated with PE (-0.12335). EPS was negatively correlated with PE (-0.07595) but positively correlated with ATO (0.047401). PE & ATO were negatively correlated (-0.12378)

Table (1)

Descriptive Statistics (1998-2006)- Pre-Crisis Period

	Mean	Median	Maximum	Minimum	St.Dev.	Skew.	Kurt.	No.of Obs
Stock Returns	22%	10%	324%	-96%	0.6	1.8	5.07	2015
Independent Variables								
Current Ratio	3.06	1.71	133.63	0.05	7.27	11.6	167.59	1601
Net Profit Margin	15.16	9.56	261.46	-237.55	36.98	0.77	12.22	2001
Return on Equity	12.20	13.47	337.09	-441.59	28.75	-3.66	69.52	2015
Earnings per share	5.73	0.39	179	0	17.12	5.19	32.52	2013
Price to Earnings	24.57	14.3	283	0.10	32.86	3.87	18.56	2005
Assets Turnover	0.4452	0.545	5.83	-0.22	0.6312	2.292	8.94	1314

Source: Author's calculations

Table (2)

Descriptive Statistics (2007-2008)- Crisis Period

	Mean	Median	Maximum	Minimum	St.Dev.	Skew	Kurt.	No.of Obs
Stock Returns	3%	-6%	276%	-96%	0.54	1.76	5.21	1279
Independent Variables								
Current Ratio	3.42	1.72	192.16	0	10.83	13.34	205.74	1199
Net Profit Margin	16.91	10.42	268.08	-252.05	41.51	0.28	13.01	1266
Return on Equity	8.58	13.85	335.12	-399.46	38.29	-3.36	31.60	1278
Earnings per share	5.78	0.44	189	0	19.04	5.57	36.70	1269
Price to Earnings	17.35	11.7	283	0.10	22.56	6.10	52.71	1257
Assets Turnover	0.743	0.59	6.77	-0.12	0.711	3.229	18.03	1279

Source: Author's calculations

Table (3)

Descriptive Statistics (2009-2018)- Post-crisis Period

	Mean	Median	Maximum	Minimum	St.Dev.	Skew	Kurt.	#.of Obs
Stock Returns	4%	-2%	325%	-100%	0.44	1.79	6.41	8735
Independent Variables								
Current Ratio	2.6	1.54	189.47	0	5.47	16.10	403	8126
Net Profit Margin	4.47	5.52	267.18	-316.27	37.03	-2.76	25.12	8602
Return on Equity	5.33	8.4	384.08	-488.66	35.63	-3.05	45.70	8717
Earnings per share	3.91	0.19	197.68	0	15.08	6.48	55.10	8634
Price to Earnings	19.62	12.8	277.2	0	25.76	5.07	32.97	8490
Assets Turnover	0.727	0.57	6.71	-0.08	0.682	2.645	11.56	8735

Source: Author's calculations

Table 4: Correlation matrix for Pre-crisis Period (1998-2006):

	Returns	*CR*	*NPM*	*ROE*	*EPS*	*PE*	*ATO*
Returns	1						
CR	0.00875	1					
NPM	0.015293	0.225968	1				
ROE	0.229044	-0.02432	0.19908	1			
EPS	-0.02693	0.045191	0.03246	0.074567	1		
PE	0.172035	0.022207	0.05673	-0.05982	-0.13011	1	
ATO	0.04571	-0.08848	0.19617	0.138637	0.048192	0.13926	1

Source: Author's calculations

Table 5: Correlation matrix for crisis Period (2007-2008):

	Returns	*CR*	*NPM*	*ROE*	*EPS*	*PE*	*ATO*
Returns	1						
CR	-0.00129	1					
NPM	0.061253	0.236117	1				
ROE	0.154775	-0.03573	0.090411	1			
EPS	0.005558	-0.0165	-0.04168	0.047167	1		
PE	0.034543	-0.00551	-0.00906	-0.10164	0.000609	1	
ATO	0.084904	-0.07436	-0.20635	0.067901	-0.02307	0.03737	1

Source: Author's calculations

Table 6: Correlation matrix for Post crisis Period (2009-2018):

	Returns	*CR*	*NPM*	*ROE*	*EPS*	*PE*	*ATO*
Returns	1						
CR	0.062128	1					
NPM	0.063722	0.370148	1				
ROE	0.1876	0.085539	0.508572	1			
EPS	0.072994	0.061367	-0.00952	0.068465	1		
PE	0.020575	-0.02245	-0.0598	-0.11225	-0.07595	1	
ATO	0.065473	-0.08507	-0.28149	0.060082	0.047401	0.12378	1

Source: Author's calculations

6. Model and Methodology:

6.1 Methodology:

We used Panel data analysis as the model will cover different firms in 10 economic sectors such as Basic Materials, Consumer goods cyclical and non- cyclical, Energy, financials, Health care, Industrials, Technology, Telecommunications and Utilities across 12 countries of MENA region for the period from 1998 till 2018 with total of 12,029 observations. Regression will be done on the relation between monthly returns of the stocks for all chosen firms (independent variable) and their corresponding financial ratios over time to test whether the Islamic filtering criteria affects the returns or not.

We used individual random effect model as for the time variation, we already made 3 different portfolios to examine the different periods covered in our model and by testing for the significance of firm fixed effect, it was found to be insignificant, thus, ignored.

6.2 Model:

In order to evaluate the differences in portfolio performance, we are going to use a panel regression model based on the following:

The yearly returns of stocks of 12 MENA region countries in 10 different sectors will be regressed against major financial ratios for the period from 1998 until 2018 divided into 3 categories before crisis, during crisis and after crisis. In addition to dummy variable for whether the firm is considered Shariah Compliant or not to test the validity of the below hypothesis:

H_0: Shariah Compliant firms' returns respond to financial ratios the same as conventional ones

Using panel least squares regression on the following equation;

$$R_{i,t} = \alpha + \beta_1(CR_{i,t}) + \beta_2(NPM_{i,t}) + \beta_3(ROE_{i,t}) + \beta_4(EPS_{i,t}) + \beta_5(P{:}E_{i,t}) + \beta_6(Assets\ tunover_{i,t}) + \beta_7(Dummy\ Islamic_{i,t}) + \beta_8(Dummy\ Country_{i,t}) + \beta_9(Dummy\ Sector_{i,t}) + \varepsilon_{i,t}$$

R i,t is the yearly Return of the stock of each firm at time T.

β1CRi,t is the Current Ratio of each firm at time T.

β2NPMi,t is the Net Profit Margin of each firm at time T.

β3ROEi,t is the Return On Equity of each firm at time T.

β4EPSi,t is the Earning Per Share of each firm at time T.

β5P:Ei,t is the Price to Earnings Ratio of each firm at time T.

β6Assets turnover i,t is the Assets Turnover Ratio of each firm at time T.

β7Dummy Islamic i,t is a dummy variable whether shariah compliant or not at time T

β8Dummy Country i,t is a dummy variable for each of the 12 countries at time T.

β9Dummy Sector I,t is a dummy variable for each of the 10 sectors at time T.

7. Results:

The regression output of the model is represented in below tables no. (7, 8 & 9) for all the three periods; the first we call the Complete sample ; which contains the full set of data for both types of firms, the second sample consists of Shariah Compliant portfolio firms, the third sample; Conventional portfolio which contains the data of non-shariah compliant firms. An important note on all the three tables is that the number of observations varies according to the regression model depending on the period the table

is covering. Three separate regression models were run to cover all the subcategories of the period (pre-crisis, crisis and post crisis) thus the number of observations varies, twice each time to differentiate between the performance of Islamic and conventional ones.

For the complete portfolio, it was found that the current ratio, net profit margin, earnings per-share and assets turnover ratio had no relation with the returns for the pre-crisis period. Price to earnings and return on equity had a positive significant relation with the returns. In addition, the Islamic Filtering criteria seemed to have a positive relation with the returns during this period as the dummy variable for whether Shariah Compliant or not showed a positive significant relation with the returns.

Comparing between shariah compliant and conventional portfolios during this period, both portfolios' returns had a significant positive relation with ROE. Only shariah compliant portfolio had a positive significant relation with PE while conventional had a positive insignificant one. For the current ratio, both portfolios' returns had an insignificant relation with it, the shariah compliant had a negative one while the conventional portfolio had positive one. Both portfolios had a negative insignificant relation with NPM & EPS but a positive insignificant relation with ATO. Thus, we can accept our null hypothesis that both portfolios' returns had a different relation with financial ratios.

For the complete portfolio covering the crisis period, it was found that there is a positive significant relation between yearly returns and return on equity and assets turnover. Negative insignificant relation was found between returns and current ratio and earnings per share. Positive insignificant relation was found for the net profit margin and price to earnings. Shariah compliance filtering criteria had a positive effect on the returns as the

dummy variable had a positive significant coefficient at the significance level of 10%. Comparing between the two portfolios, it was noted that both yearly returns of both portfolios had a positive significant relation with ROE. Current ratio had a negative insignificant relation with the shariah compliant portfolio returns and a positive insignificant one with the conventional. Net profit margin and assets turnover ratio had a positive insignificant relation with both portfolios' returns. EPS had a negative insignificant relation with both portfolios. PE had a positive insignificant relation with the returns of the conventional portfolio but had a positive and significant one with the shariah compliant portfolio. Thus, we accept our null hypothesis that returns of shariah compliant had a different relation with the financial ratios than the conventional ones during the crisis period.

Examining the results during the post-crisis period for the full portfolio, we found that net profit margin and earnings per share are the only variables with insignificant relation with the returns. Current ratio had a negative significant relation with the yearly returns. Return on equity and price to earning had a positive significant relation with the returns at the level of 10% while assets turnover ratio had a positive significant one at the level of 5%. Additionally, the Islamic filtering criteria had a positive significant relation with the returns during this period at the significance level of 1%. Difference in the results for the post crisis period can be attributed to being the period with the largest number of observations. Accordingly for the post crisis period, can state that the Islamic filtering criteria positively affects the returns of Shariah compliant indices. Our results is consistent with literature that indicates that the two main reasons behind this relation is the difference in sectors' concentration and the increasing interest in ethically accepted

investors. In addition, the increase in demand could be one of the reasons as the Islamic market is growing rapidly with more investors' awareness.

Comparing between the results of both portfolios, we noted that both portfolios' returns had a positive significant relation with ROE. Current ratio had a negative insignificant relation with shariah compliant portfolio returns but a negative and significant one with the conventional portfolio returns. Net profit margin had a positive and insignificant relation with both portfolios' returns. Earnings per share and assets turnover had a positive insignificant relation with both portfolios. Price to earnings had positive relation with both portfolios' returns but only significant in the conventional one. NPM had a negative relation with the returns of the shariah compliant portfolio but a positive one with the conventional portfolio returns. Thus, we accept our null hypothesis for the post crisis period.

Table (7) Complete Portfolio	Dependent Variable Yearly Stock Returns		
	(1) Pre-crisis	(2) Crisis	(3) Post Crisis
Constant	-0.041632 (0.087186)	-0.011496 (0.072958)	0.018352 (0.022256)
CR	0.001763 (0.009332)	-0.002054 (0.006180)	-0.003737** (0.001530)
NPM	-0.000633 (0.001099)	0.001124 (0.000901)	0.000219 (0.000347)
ROE	0.006968*** (0.001367)	0.002686** (0.000879)	0.003222*** (0.000315)
EPS	-0.000502 (0.001043)	-0.00003 (0.001108)	0.000417 (0.000343)
PE	0.003397*** (0.000868)	0.001518 (0.001160)	0.001086*** (0.000246)
Assets Turnover	0.036069 (0.047235)	0.060210** (0.030214)	0.029211** (0.010124)
Dummy Islamic	0.105616* (0.058320)	0.092494* (0.048739)	0.049150*** (0.014287)
Dummy Country	-0.002104 (0.010167)	-0.015531** (0.006966)	-0.010014*** (0.002010)
Dummy Sector	-0.006424 (0.010144)	-0.001437 (0.008296)	0.005366** (0.002449)
Observations	498	565	3703

(1) Parenthesis imply St. Error.
(2) *, **, *** indicate statistical significance at the 10,5 ,1% levels respectively

The above regression was conducted using the following equation

$$R_{i,t} = \alpha + \beta_1(CR_{i,t}) + \beta_2(NPM_{i,t}) + \beta_3(BROE_{i,t}) + \beta_4(EPS_{i,t}) + \beta_5(P{:}E_{i,t}) + \beta_6(Assets\ Turnover_{i,t}) + \beta_7(Dummy\ Islamic_{i,t}) + \beta_8(Dummy\ Country_{i,t}) + \beta_9(Dummy\ Sector_{i,t}) + \varepsilon_{i,t}$$

where the independent variable was the yearly returns where the dependent variable is the yearly stock return.

Table (8) Shariah-Compliant Portfolio	Dependent Variable Yearly Stock Returns		
	(1) Pre-crisis	(2) Crisis	(3) Post Crisis
Constant	0.181561 (0.094696)	0.029701 (0.103950)	0.068694** (0.030479)
CR	-0.006938 (0.026354)	-0.036618 (0.024862)	-0.006117 (0.005928)
NPM	-0.000719 (0.01271)	0.000787 (0.001176)	0.000690 (0.000689)
ROE	0.005462*** (0.001214)	0.001627* (0.000942)	0.002920*** (0.000377)
EPS	-0.001339 (0.001141)	-0.000756 (0.001550)	0.000256 (0.000555)
PE	0.00983 (0.000982)	0.003791** (0.001501)	7.61E-05 (0.000319)
Assets Turnover	0.006890 (0.056447)	0.055154 (0.037449)	0.033653 (0.013675)
Dummy Country	-0.027100* (0.013867)	-0.001434 (0.009889)	-0.012605*** (0.002782)
Dummy Sector	-0.003573 (0.011246)	-0.012687 (0.010766)	0.001853 (0.003167)
Observations	217	287	2032

(1) Parenthesis imply St. Error.
(2) *, **, *** indicate statistical significance at the 10,5 ,1% levels respectively

The above regression was conducted using the following equation

$$R_{i,t} = \alpha + \beta_1(CR_{i,t}) + \beta_2(NPM_{i,t}) + \beta_3(BROE_{i,t}) + \beta_4(EPS_{i,t}) + \beta_5(P{:}\,E_{i,t}) + \beta_5(Assets\ Turnover_{i,t}) + \beta_6(Dummy\ Country_{i,t}) + \beta_7(Dummy\ Sector_{i,t}) + \varepsilon_{i,t}$$

where the independent variable was the yearly returns where the dependent variable is the yearly stock return.

Table (9) Conventional Portfolio	Dependent Variable Yearly Stock Returns		
	(1) Pre-crisis	(2) Crisis	(3) Post Crisis
Constant	-0.214743 (0.004508)	-0.006095 (0.121728)	-0.010192 (0.033898)
CR	0.004508 (0.011138)	0.002423 (0.006774)	-0.003344** (0.001578)
NPM	-0.000163 (0.001681)	0.001418 (0.001380)	1.08E-05 (0.000405)
ROE	0.011677*** (0.003088)	0.007240*** (0.002054)	0.004252*** (0.000612)
EPS	-0.001771 (0.001632)	-3.60E-05 (0.001565)	0.000453 (0.000437)
PE	0.005484*** (0.001345)	1.03E-05 (0.001809)	0.002725*** (0.000394)
Assets Turnover	0.065566 (0.070862)	0.060319 (0.048934)	0.021884 (0.015193)
Dummy Country	0.007292 (0.014096)	-0.023655** (0.009711)	-0.007128** (0.002912)
Dummy Sector	0.022396 (0.016138)	0.012830 (0.012602)	0.009763** (0.003855)
Observations	281	278	1671

(1) Parenthesis imply St. Error.
(2) *, **, *** indicate statistical significance at the 10,5 ,1% levels respectively

The above regression was conducted using the following equation

$$R_{i,t} = \alpha + \beta_1(CR_{i,t}) + \beta_2(NPM_{i,t}) + \beta_3(BROE_{i,t}) + \beta_4(EPS_{i,t}) + \beta_5(P{:}\,E_{i,t}) + \beta_5(Assets\ Turnover_{i,t}) + \beta_6(Dummy\ Country_{i,t}) + \beta_7(Dummy\ Sector_{i,t}) + \varepsilon_{i,t}$$

where the independent variable was the yearly returns where the dependent variable is the yearly stock return.

8. Conclusion:

This thesis analyzed the relation between yearly stock returns and major financial ratios and the Islamic filtering criteria. In addition, whether this relation differs if the company is Shariah compliant or not. Financial ratios used where CR, NPM, EPS, PE, ROE and ATO during different times such as pre-crisis, crisis and post crisis periods. Opposing literature review was found but nothing neither covered data in MENA region during different times nor divided the performance to sub-periods, which what we did in our analysis. In addition, we test the relation between the Shariah compliant filtering criteria and returns to determine if the screening affects the performance of Islamic Indices.

In order to understand the relation between the yearly stock returns and key financial ratios and between return and Islamic filtering criteria, we covered yearly data for 12 countries in the MENA region over the period from 1998 until 2018. The methodology used was panel Least Squares regression. We estimated the model for three different sub-periods.

First, for the complete portfolio with data covering the full sample (conventional and shariah compliant firms)for the pre-crisis period, it was found that the current ratio, net profit margin, earnings per-share and assets turnover ratio had no significant effect on the returns. On the other hand, price to earnings and return on equity had a positive significant relation. Moreover, the Islamic Filtering criteria had a positive significant relation with the returns during this period. Same results were found for the conventional

portfolio, unlike the shariah compliant one who only had a positive significant relation with ROE.

Through our second regression that covered the period of 2007 & 2008 representing the crisis period full sample portfolio with data for both stocks conventional and shariah compliant, we found that current ratio, net profit margin, earnings per share and price to earning had no significant relation with the returns. On the other hand, return on equity and assets turnover ratio had a positive relation with the yearly returns. Islamic filtering criteria had a positive effect on the returns supporting to what most of the literature reviews stated. Returns for both portfolios (shariah compliant and conventional) had a positive significant relation with return on equity. Current ratio had opposing results as it had positive insignificant relation with returns in the conventional portfolio's returns but a negative insignificant one in the shariah compliant portfolio. Net profit margin and assets turnover had positive insignificant in both portfolios unlike earnings per share that had a negative insignificant one. Price to earning had a positive and significant relation with yearly returns in the shariah compliant but positive insignificant with the conventional one.

The third regression covering the period from 2009 until 2018 representing the post-crisis complete portfolio covering the full sample for both types of stocks- shariah compliant and conventional, it was found that earnings per share and net profit margin had no significant relation with the returns. On the other hand current ratio, return on equity, price to earnings and assets turnover ratio had significant relations with the returns and Islamic filtering criteria had a positive significant relation with the returns during this period at the level of 1%. Islamic portfolio returns and conventional one both had

positive significant relation with return on equity but a positive insignificant one with assets turnover. Current ratio had negative relation with both portfolios' returns but only significant with the conventional portfolio returns same as price to earnings ratio that only had a significant relation with returns of the conventional one but a positive one. Both had insignificant relation with earnings per share and net profit margin.

We believe that the reason for Islamic indices having different performance than the conventional ones is due to the screening criteria and their concentration in rewarding sectors as the sector and the Islamic filtering criteria both had a positive significant effect on the returns. In addition, we believe that the growing interest and demand in what people considered an ethical investment caused this positive relation with returns.

The findings of this thesis have important impact for investors and indices managers. The relations determined in the different portfolios covered in this thesis can guide investors in MENA region upon formulating their portfolios that their relation is not consistent with all types of firms. Attention should be given to ROE, as this is the most important ratio with the significant relation throughout all portfolios. In addition, after crisis sample with the most recent data showed that the filtering criteria had a great impact on the returns, thus, this could be a selecting mechanism for risk averse investors and portfolio managers but its less significance during crisis period should be taken into consideration.

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