IMPACT OF CAPITAL STRUCTURE ON CORPORATE PERFORMANCE DURING FINANCIAL CRISIS: EVIDENCE FROM SHARIAH COMPLIANT COMPANIES

Nor Khadijah MOHD AZHARİ

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Nor Khadijah MOHD AZHARİ

T.C.

Eskişehir Osmangazi University
Institute of Social Sciences

Business Administration Department

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T.C.

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This thesis titled "Impact Of Capital Structure On Corporate Performance During Financial Crisis: Evidence From Shariah Compliant Companies" has been prepared and submitted by Nor Khadijah MOHD AZHARI in partial fulfilment of the requirements in Eskisehir Osmangazi University Directive on Graduate Education and Examination for Doctoral in Department of Business Administration was successfully defended on ..18/6/2020.. has been examined and approved by the juries.

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Prof. Dr. Birol YILDIZ
(Supervisor)

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Nor Khadijah MOHD AZHARI

ABSTRACT

IMPACT OF CAPITAL STRUCTURE ON CORPORATE PERFORMANCE DURING FINANCIAL CRISIS: EVIDENCE FROM SHARIAH COMPLIANT COMPANIES

MOHD AZHARI, Nor Khadijah

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Business Administration Department

Supervisor: Birol YILDIZ

The rapid growth in Islamic Finance Industry such as in Islamic banking, takaful, waqf, and sukuk gain more awareness and interest from around the world including Islamic countries and non-Islamic countries such as Singapore, South Korea, Japan, Europe, Australia, Brazil, and America Latin. Based on Islamic Financial Services Board (IFSB) and Ernst & Young Report in 2016 it stated that Islamic finance industry had reached a gross value USD 1.88 trillion in 2015. In addition, it also maintained double-digit growth rates despite sustained low energy prices, geopolitical conflicts and economic uncertainty. Meanwhile, Global Islamic Finance Report 2017 reported that in December 2016 global Islamic financial service industry stood at USD2.293 trillion. According to El-Qorchi (2005) that highlights there have three motivation of shifting to Islamic finance because strong demand for Shariah compliant products and services, demand from Gulf region or oil rich nation for Shariah compliant investment and lastly non-muslim investor also attracted with competitiveness of Shariah compliant products and services.

Furthermore, there have numerous capital structure modern theories that have been developed since 1958 begin with MM Irrelevance Theory and continue with Trade-off Theory, Pecking Order Theory, Agency Theory and Market Timing Theory. As an example, trade-off theory is encouraging the firms to use debt financing rather than retained earnings and equity financing in order to utilise the tax deduction benefit from interest on debt financing. Each of this theory has different

approach to manage and oversee the capital structure decision. Unfortunately, not all these theories explain adequately the effect of capital structure on corporate performance for Shariah compliant companies. Therefore, the question that can been arisen which is the most appropriate and suitable capital structure theory under Shariah principles? Firstly, this study intends to determine until to what extent the capital structure of Shariah compliant companies (SCC) can be different from Non-Shariah compliant companies (NSCC).

Many studies have been done on capital structure. However, most of the studies focused on the capital structure determinants, impacts of capital structure on financial performance, how the tax affected capital structure and short-term debt during financial crisis period. All of these past studies using financial institution, small and medium enterprises (SME) and public listed companies (PLC) as samples in their study. Nevertheless, there are few studies relate to the impact of capital structures on corporate performance during financial crisis. Shariah compliant companies presume to be more resilent during financial crisis based on their characteristic. However, there is no study on how SCC manages their capital structure during financial crisis period. Therefore, in order to fill the research gap, it is necessary to carry out a study on impact of capital structure on corporate performance during financial crisis by using SCC as sample. The main objective of this study is to investigate the impact of capital structure on corporate performance of SCC predominantly during financial crisis period. To the best of our knowledge, there is no such empirical study that has been conducted until nowadays.

As information, Shariah compliant companies (SCC) are deemed to comply with Shariah principles, rules, values and restrictions when dealing with the financing activities. In order to ensure SCC comply with all the Shariah principles and free from prohibited elements such as interest (riba), gambling (masyar) and speculation (gharar), Shariah advisory board (SAC) are established to monitor the SCC's activities. Besides, before being listed in Islamic index all the firms must be complying with the qualitative and quantitative criteria for screening process that are set by the index provider. This study will take the sample from FTSE Shariah global index series, therefore under this index provider, Yasaar Ltd is an impartial consultancy and leading authority on handling Shariah matters including the screening process. Under quantitative screening, there have several financial

benchmarks that the firms need to follow in order to acquire the shariah-compliant status.

According to Haron and Ibrahim (2012) due to the benchmark that are set by index provider, it leads SCC to raise capital via equity financing. Empirically, firms that rely more on equity-based financing tend to be more resilient during financial crisis period. Gitman and Zutter (2012, p.508) defines the capital structure as "the mix of debt and equity maintained by the firm". Thus, the main concern is how the firm decision to optimize the capital structures by combining debt and equity financing.

There have a number of previous studies that explored how the firms or financial managers determine the optimum capital structure to ensure they can maximize the firm's corporate performance. Based on the empirical results it shows that there has numerous factor that influenced the firms and financial manager in order to make the capital structure financing decision such as profitability, growth, size, tangibility, tax, leverage, liquidity, and industry. Meanwhile, this study will focus on some financial benchmarks in order to achieve the objective of this study. Such example this study uses corporate performance, debt to equity ratio, debt financing ratio (short-term debt ratio and long-term debt ratio), tangibility ratio, cash plus account receivables ratio, growth ratio, and size ratio.

Corporate Performance

In this study, two proxies will be used to measure the corporate performance of the firm. Firstly, this study decides to use profit before tax and zakat over total asset or it called pre-tax return on assets (Pre-tax ROA) to measure the firm's corporate performance. This ratio is to measures how the efficiency of the firm can earn on its investment in its assets. In other words, how the firm used its assets effectively to generate the income or profit from that assets.

Like the previous study that have been used earnings before interest and tax (EBIT) over total assets and profit before interest and tax to measure the firm's corporate performance. Initially, this study intends to show the different significant impact to the firm's corporate performance if the firm paying taxes or zakat or both. It is due to the SCC has special taxes that are called 'zakat' under Shariah term and it

has fixed-rate 2.5 percent from the net profit or income. However, until nowadays zakat still voluntary basis in most of the Muslim countries. Based on the sample in this study, Malaysia is the only country that implemented zakat system however it based on voluntary basis and none of the samples shows the zakat amount in their financial statement.

The second proxy in this study for dependent variables that represents for firm's corporate performance is return on equity ratio (ROE) ratio. Based on the previous studies, there has been used net income after tax over total equity to measure the ROE in their studies. Therefore, this study also decides to use the same measurement as the prior studies.

This ratio will measure by the firm's profitability using net profit after interest, tax and preference dividend divided by ordinary share capital plus reserves at the end of the financial year. ROE ratio is one of the main profitability ratios that concentrate on the firm's ordinary shareholders and compares the profit that has been earned and its capital. Some of the investors are using this ratio to measure the firm's ordinary shares desirability.

Debt to Equity Ratio

Some of the Islamic index provider set the financial benchmark that the total debt must be less than 33 percent from the total equity. Such an example, Dow Jones Global Islamic Index (DJIM) set the debt to equity ratio as one of their financial benchmarks. However, FTSE Global Equity Shariah Index does not include this benchmark under their screening process. Therefore, this study intends to use this benchmark to see whether there have significant differences between SCC and NSCC.

This study decides to use total debt divided by total equity as a measurement of debt to equity ratio. It supported by other studies such as Margaritis and Psillaki (2010) and Memon et al., (2012) that also used the same measurement in their studies. This ratio is to evaluate a firm's financial leverage by measuring the degree of firm financing based on debt to equity or wholly-owned funds. In case if the company downturn, it measures the ability of the shareholder equity to cover all the debts in the firms.

Debt Financing

Under FTSE Global Equity Shariah Index quantitative screening, the debt ratio must be less than 33 percent of total assets. Due to this study's objective to determine the impact of capital structure on corporate performance during financial crisis, therefore the debt ratio divided into two categories, which are short-term debt financing and long-term debt financing.

Based on Fosberg (2013) conducted a study on public listed companies in US and found that short-term debt financing increased from 1.3 percent in 2006 to 2.2 percent in 2008 which represent $34 million increase due to the financial crisis that are happened in 2008. It supported by numerous studies (see Brealey et al., 2008; Almeida et al., 2011; Federal Reserve, 2012; Fosberg, 2013) that during the stock market collapsed in 2008, the borrowing power of firms becomes fewer than before due to the credit supply was limited. Therefore, firms intend using more STD financing during financial difficulties. Hassan and Samour (2016) added that it highlighted that capital structure financing decision were impact during financial crisis period.

Cheema et.al (2017) and Shahar and Shahar (2015) found that SCC using long-term debt (LTD) financing more than short-term debt (STD) financing. It might be due to the restriction for limited interest and risk sharing under Shariah guidelines. However, for NSCC, they are using more STD in order to meet the working capital requirement.

On the other hand study by Sahudin, Ismail, Sulaiman, Rahman, and Jaafar (2019) found that SCC using more STD financing compared to LTD financing. STD financing is more widely used compared to LTD financing by the SCC in Malaysia because the majority of Islamic debt instruments issued short-term debt rather than long-term debt (Aggarwal & Yousef, 2000). This also supports agency theory whereby it justifies the function of STD financing as a mechanism to control the debt and mitigate the agency problem. Therefore, this study intends to examine the significant differences in financing patterns particularly before, during and after the financial crisis period.

Tangibility Ratio

Tangibility assets become more popular as a measurement for bank viability after the financial crisis occurred. Bank viability means the bank's judgment on the ability of the firms to meet ongoing financial obligation with the additional investment and financing such as from the banks and investors. One of the reasons because tangible assets are liquid compared to intangible assets. It supported by Charalambakis and Garrett (2012) that stated tangible assets are the main point in explaining the capital structure within the firms. As a result, tangible assets have a higher value in the market and even if firms have financial problem or going to bankrupt, the firms can easily and quickly in selling their tangible assets.

Scott (1977) and Titman and Wessels (1988) stated that less profitable firm intends to have a high value of tangible assets and the firms will use tangible assets as collateral in order to get more debt financing. Therefore, any firm that has higher tangibility ratio will issue more debt financing. This is in line with trade-off theory that highlight, firms need to enjoy the advantage of tax with issuing more debt financing while having more profit to the firm. Ahmad and Azhar (2015) added that this would give assistance to the firms that have default in their debt to use the tangible asset to avoid being bankrupcy.

Cash plus Account Receivables Ratio

Most of the previous studies used the liquidity ratio in order to measure the firm's ability to meet the short-term financial obligation. Even Thabet and Hanefah (2014) found in their study that liquidity were one of the factors that have the impact on the corporate performance to the firm.

This ratio is important to ensure the firms have cut limit for total cash and account receivables in one time in order to avoid excess or lack of cash in the firms. In addition, it also to reduce the agency cost. To the best of our knowledge, this is the first study that examines the impact on total cash plus account receivables over total assets (CashAR) to the corporate performance. This variable is chosen as an independent variable for this study due to the characteristics for SCC must be following and passed the benchmark in order to be listed in the Islamic index. Farooq

and Alahkam (2016) also mentioned that the Islamic financial system was more stable and resilient because of the economy based on Islamic guidelines.

Growth Ratio

This study decides to use the different amount of this year sales minus last year sales divided by this year sales as a proxy of firm growth ratio. It is supported by prior studies (Salim and Yadav, 2012; Bundala, 2012; Proença et al., 2014; Cheema et al., 2017) that are also used the same measurement for growth ratio in their studies. According to Titman & Wessel (1988) and Rajan & Zingales (1995) shows that the firms with high future growth turns out to be used less leverage in the financing decision. It is because the firm will shift from debt financing to equity financing. In addition, growth ratio are influence by the profitability of the firm.

This study will be focused on selected countries from Southeast Asia, which are Malaysia, Indonesia, Vietnam, Singapore, and Thailand. The selection sample is justified that Southeast Asia is the most progressive region in the Islamic capital market in the Asia region (Yakcop, 2002). Initially, this study has identified 595 samples of Public Listed Companies under industrial sector in Southeast Asia. Nevertheless, 114 samples have been excluded due to the several reasons such as incomplete financial statement and change of accounting year during the period of study. Thus, the final samples selected are 197 PLC from Shariah-compliant companies and 284 PLC from Non-shariah compliant companies.

All the sample are collecting through DataStream that is published by Thomson Reuter Eikon. This study gathers all the financial statements such as balance sheet, income statement and cash flow statement in order to achieve the objective of this study. The unique for this study, the data is analyzed using Python Pandas programming software. This is the first study using Python Pandas to analyze the impact of capital structure on corporate performance during the financial crisis. As information, Pandas are the software library written for the Python programming language for data manipulation and analysis. Undoubtedly, Pandas offer data structures and operations for manipulating numerical tables and time series. Therefore, the first step to do to analyze the data by creating the coding system that is

required for this study. In order to accomplish the objective in this study, the regression equations have been developed as follows:

1. Y (Pretax ROA) $= \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 SIZE_{it} + \beta_8 (X) + \varepsilon$

2. Y (ROE) $= \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 SIZE_{it} + \beta_8 (X) + \varepsilon$

Whereby:

Pre-tax ROA = Return on asset before tax ratio
ROE = Return on equity ratio
D/E = Debt to equity ratio
STD = Short term debt ratio
LTD = Long term debt ratio
TANG = Tangibility ratio
CASHAR = Cash plus account receivable ratio
GRW = Growth ratio
SIZE = Size ratio
ε = Error term
X = dummy variable
0: Non-Shariah Compliant Companies (NSCC)
1: Shariah Compliant Companies (SCC)

The analysis begins with the multicollinearity test and the purpose of this test to ensure there is no problem of multicollinearity among the variables. Based on the result, none of the tolerances value is less than 0.2 and none of the Variance Inflation Factor (VIF) is greater than 10. As a result, it found that there is no multicollinearity problem in this study.

The analyses continue with the descriptive statistic analysis that found the corporate performance of Shariah compliant companies (SCC) is higher than Non-Shariah compliant companies (NSCC) during the financial crisis and after the financial crisis for both proxies, pre-tax return on assets (Pre-tax ROA) and return on equity (ROE). However, for independent variables those are debt to equity ratio, short-term debt ratio, long-term debt ratio, cash plus account receivables ratio shows that SCC has lower ratio through out the periods which are before, during and after financial crisis. These results have been expected due to the benchmarks that are set

by index providers during the quantitative (financial) screening process. Furthermore, SCC requirements to follow all the time the benchmark in order to be listed in Shariah index and maintain as shariah status. Due to this reason, we can observe that SCC always has a lower leverage ratio compare to NSCC. In addition, firms that have lower ratio are better because high leverage ratio or debt financing ratio contributes to the high risk of solvency and instability of the firms.

Tangibility ratio for SCC is higher than NSCC before, during and after the financial crisis period. This ratio becomes more important after the financial crisis period. It is because it uses as a measurement for bank viability and indicate the firm's collateral level. Therefore, SCC with a higher tangibility ratio can issue more debt financing. It becomes more secure in case of bankruptcy; the firm can sales its tangible assets in order to pay their debt financing.

Cash plus account receivables ratio is lower than NSCC before, during and after financial crisis period. Even though high liquidity can attract more lender and manager to make investment easily however there have high risk of bankruptcy and high risk of non-payment. Besides, the lower liquidity can contribute to the lower agency problem.

Growth ratio shows before and during financial crisis period NSCC have higher ratio than SCC. However, after financial crisis period, SCC demonstrates higher ratio than NSCC. It indicates that SCC's growth better after financial crisis period. In addition, it proved that SCC gets more attention from the investor after financial crisis period.

The second major finding are from multiple regression analysis based on pre-tax ROA as the first proxy for corporate performance. It found that all the independent variables are significant except for debt to equity ratio before the financial crisis period. However, during the financial crisis period, only long-term debt ratios not significant and after the financial crisis period both short-term debt and long-term debt do not significant. Shariah-compliant companies only have a significant level after the financial crisis period. The impact of capital structure on corporate performance, pre-tax ROA for SCC is 1.6617 times higher than NSCC after financial crisis period.

Second proxy of corporate performance is a return on equity (ROE). All the independent variables are significant with the ROE except for debt to equity ratio and cash plus account receivable ratio before the financial crisis period, while long-term debt ratio during and after the financial crisis period. SCC significantly with ROE before the financial crisis and it shows that the impact of capital structure on SCC for corporate performance, ROE is -2.9264 times lower than NSCC. However, after the financial crisis period, the impact of capital structure on corporate performance, ROE for SCC is 4.3171 times higher than NSCC.

The findings in this study posed an important implications for academicians, researchers, regulatory bodies as well as the management of the firms particularly Shariah compliant and non-shariah compliant companies, as they pave for further exploration. It offers knowledge to the regulatory bodies and related government agencies to come out with the guidelines and framework regarding shariah compliant status. Therefore, in order to set up with the new regulations and guidelines, these agencies need to understand the needed of investors and the characteristics of SCC itself in order to develop new guidelines to attract more investors. Such cases in Malaysia, the government give incentive to the new shariah compliant companies with five years tax exemption. Other, in UK and France they have amended their tax structure to compatible with Islamic finance guidelines.

There have several limitations encountered in conducting this study. This study did not take into consideration the effects of the Asian financial crisis because there have different impact between the countries due to the different level of development in the financial market, the policies of the government and the sensitivity of that country to external incidents. In addition, due to this was the cross country study, therefore the differences are expected due to difference law system and regulation, bureaucracy, dissimilar costs and benefits that the companies face in each country. These limitations have paved the way to future research. Therefore, in the future it hopes to take consideration for these limitations in order to fill the research gap in this area.

Keywords: Capital Structure, SCC, Financial Crisis, Financial Performance

ÖZET

SERMAYE YAPISININ FINANSAL KRIZ DÖNEMINDE İŞLETME KARLILIĞINA ETKISI: ŞERIATE UYUMLU İŞLETMELERDEN KANITLAR

MOHD AZHARI, Nor Khadijah

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Danışman: Birol YILDIZ

İslami finans özellikle son zamanlarda, İslami bankacılık, tekaful, vakıf ve sukuk gibi bir çok alanda hızlı bir büyüme göstermektedir. İslami finans İslam ülkelerinin yanında, Singapur, Güney Kore, Japonya, Avrupa, Avustralya, Brezilya ve Amerika Latin gibi İslami olmayan ülkeleri de kapsayacak şekilde dünyanın dört bir yanından, gittikçe daha fazla farkındalık ve ilgi kazanmaktadır. İslami Finansal Hizmetler Kurulu (IFHK) ve 2016'da Ernst & Young raporuna dayanarak, İslami finans sektörünün 2015 yılına kadar brüt 1,88 trilyon ABD doları değerine ulaştığını belirttimektedir. Üstelik bu sektörün büyüme hızı, düşük enerji fiyatlarının sürmesine, jeopolitik çatışmalara ve ekonomik belirsizliğe rağmen, çift haneli büyüme oranlarını korumuştur. Örneğin, 2017 yılına ait Küresel İslami Finans Raporunda, Aralık 2016'da küresel İslami finansal hizmet sektörünün 2,293 trilyon ABD doları bulduğu raporlanmıştır. El-Qorchi'ye (2005) göre İslami finansa geçiş konusunda üç motivasyon bulunduğu vurgulamaktadır: Şeriat uyumlu ürün ve hizmetlere yönelik güçlü talep, Körfez bölgesindeki petrol zengini uluslardan gelen Şeriat uyumlu yatırım için talep ve ve son olarak Şeriat uyumlu ürün ve hizmetlerin rekabet gücünden etkilenen gayrimüslim yatırımcıların ilgisi.

Ayrıca, 1958'den bu yana geliştirilen ve MM Teorisi ile başlayan ve Takas Teorisi (Trade-Off Theory), Finansman Hiyerarşisi Kuramı (Pecking Order Theory), Vekâlet Maliyeti Teorisi (Agency Theory) ve Piyasa Zamanlama Teorisi (Market

Timing Theory) ile devam eden çok sayıda sermaye yapısı teorisi vardır. Örnek olarak Takas teorisi, firmaları borcun faizinden faydalanmak için birikmiş karlar ve özkaynak finansmanı yerine, borç finansmanı kullanmaya teşvik etmektedir. Bu teorilerinin her birinin sermaye yapısı kararını yönetmek ve denetlemek için farklı bir yaklaşımı vardır.

Bu çalışmanın temel amacı, finansal kriz döneminde sermaye yapısının kurumsal performans üzerindeki etkisini incelemektir. İlk olarak, bu çalışma Şeriat uyumlu şirketlerin (ŞUŞ) sermaye yapısının Şeriat uyumlu olmayan şirketlerden (ŞUOŞ) ne kadar farklı olabileceğini belirlemeyi amaçlamaktadır.

Sermaye yapısı üzerinde çok sayıda çalışma yapılmıştır. Bununla birlikte, çalışmaların çoğu sermaye yapısı belirleyicileri, sermaye yapısının finansal performans üzerindeki etkileri, verginin finansal yapıdaki sermaye yapısını ve kısa vadeli borçları nasıl etkilediğine odaklanmıştır. Bu geçmiş çalışmalarda örneklem olarak, finansal kurumlar, küçük ve orta ölçekli işletmeler ve halka açık şirketler kullanmaktadır. Ancak Şeriate Uygun Şirketlerin sermaye yapıları ve sermaye yapısının finansal performans üzerindeki etkisi konusunda az sayıda çalışma vardır. Özellikle ŞUŞ'lerin sermaye yapıları göz önünde bulundurulduğunda, bu şirketlerin kriz döneminde daha avantajlı olmaları beklenmektedir. Ancak ŞUŞ'lerin finansal yapılarının, fiannsal kriz döneminde onlar için nasıl bir avantaj sağladığı bugüne kadar bir araştırma konusu yapılmamıştır. Bu nedenle, araştırma boşluğunu doldurmak için, ŞUŞ'lerin örnek olarak kullanıldığı, finansal kriz sırasında sermaye yapısının finansal performans üzerindekini araştıran bir çalışma yapılması gerektirmektedir. Bildiğimiz kadarıyla, bugüne kadar yapılmış böyle bir ampirik çalışma yoktur.

Şeriat uyumlu şirketler (ŞUŞ), finansman faaliyetlerini yürütürken Şeriat ilkelerine, kurallarına, değerlerine ve kısıtlamalarına uymaktadır. ŞUŞ'in tüm Şeriat ilkelerine uyması, ayrıca riba, masyar ve gharar gibi yasaklanmış unsurlardan arındırılmasını sağlamak için, Şeriat Danışma Kurulu (ŞDK) ŞUŞ'lerin faaliyetlerini izlemek üzere kurulur. Bunlara ek olarak İslami endekste listelenmeden önce, tüm şirketler, endeks sağlayıcısı tarafından belirlenen tarama süreci için nitel ve nicel kriterlere uymalıdır. Bu çalışmada kullanılan örneklem, FTSE şeriat küresel sermaye endeksinde yer alan şirketlerden oluşturulmuştur. Bu endeks sağlayıcısı altında,

tarama süreci de dahil olmak üzere Şeriat konularının ele alınmasında Yasaar Ltd. tarafsız bir danışmanlık ve lider otorite olarak kabul edilmektedir. Şirketlerin Şeriat uyumlu statüsünü elde edebilmesi için, nicel tarama başlığı altında, uyması gereken bir dizi finansal kriterler de vardır.

Haron ve Ibrahim'e (2012) göre, endeks sağlayıcı tarafından belirlenen kriter nedeniyle, ŞUŞ'ler sermaye arttırırımı yoluyla finansmanı tercih etmek durumunda kalmaktadır. Ampirik olarak, özkaynağa dayalı finansmana daha fazla ağırlık veren firmalar, finansal krizler sırasında daha dirençli olma eğilimindedir.

Gitman ve Zutter (2012, s.508) sermaye yapısını "firma tarafından tutulan borç ve özkaynak karışımı" olarak tanımlar. Bu tanım doğrultusunda asıl amaç, borç ve özkaynak finansmanını çeşitli bileşimleri ile sermaye yapılarının nasıl optimum hale getirileceğidir. Ayrıca, sermaye yapıları aslında borç sahiplerini borç sahipleri olarak, özkaynakları ise hissedarlar veya hissedarlar olarak temsil etmektedir. O halde ortaya çıkan soru, şeriat ilkeleri uyarınca en uygun sermaye yapısı teorisi hangisidir?

Firmaların veya finansal yöneticilerin, şirket performansını en üst düzeye çıkarabilmelerini sağlamak için optimum sermaye yapısını nasıl belirlediğine dair daha önce yapılmış çok sayıda çalışma vardır. Ampirik sonuçlar, kârlılık, büyüme, büyüklük, maddi varlık, vergi, kaldıraç, likidite ve sanayi gibi finansman kararını vermek için firmayı ve finans yöneticisini etkileyen çok sayıda faktöre sahip olduğunu göstermektedir. Bu arada, bu çalışmada, çalışmanın amacına ulaşmak için bazı finansal ölçütlere odaklanılacaktır. Bu örnekte, bu çalışmada kurumsal performans, borç / özsermaye oranı, borç finansman oranı, maddi duranlık oranı, nakit artı hesap alacakları oranı, büyüme oranı ve büyüklük oranı kullanılmıştır.

Kurumsal Performans

Bu çalışmada, kurumsal performansı ölçmek için iki bağımlı değişken kullanılmıştır. Şirketin kurumsal performansını ölçmek için il olarak vergi ve/veya zekat öncesi karın toplam varlığa olan oranıyla elde edilen ve varlıkların vergi öncesi getirisi (Vergi Öncesi Varlık Getirisi- Pre-tax Return of Asset) denilmektedir. Bu oran, işletmenin varlıklarına yaptığı yatırımdan elde ettiği getiri ile işletmenin

etkinliğini ölçer. Diğer bir deyişle, işletmenin varlıklarını gelir veya kârı elde etmek içine ne kadar etkin kullandığını gösterir.

Önceki çalışmalarda olduğu gibi şirketin finansal performansını ölçmek için toplam aktifler üzerinden faiz ve vergi öncesi kazanç (faiz ve vergi öncesi kâr) kullanılmıştır. Öncellikle, bu çalışma, şirketin vergi veya zekat veya her ikisini birden ödemesi durumunda, işletmenin kurumsal performansının bundan önemli derecede etkilendiğini göstermeyi amaçlamaktadır. ŞUŞ'lerin Şeriat yönergelerine göre 'zekat' olarak adlandırılan, kâr veya gelirden yüzde 2,5 sabit oranda ödenen özel vergilere tabidir. Ancak, günümüze kadar zekat Müslüman ülkelerin çoğunda hala gönüllü olarak kullanılmaktadır. Bu çalışmadaki örneklem ile ilgili olarak, zekat sistemini uygulayan tek ülke Malezya'dır. Ancak burada da gönüllülük temeline dayanmaktadır ve örneklemdeki şirketlerin hiçbiri mali tablolarında zekat miktarını göstermemektedir.

Bu çalışmada, firmanın kurumsal performansını temsil eden ikinci bağımlı değişken, özkaynak karlılığı (ÖKK) oranıdır (Return Of Equity-ROE). Önceki çalışmalara dayanarak, çalışmalarında ÖKK'nı ölçmek için vergi sonrası toplam özsermaye üzerinden net kar kullanılmıştır. Bu nedenle, bu çalışma daha önceki çalışmalarla aynı ölçümü kullanmaya karar verilmiştir. Bu oran, faiz, vergi ve imtiyazlı temettü sonrası net karın kullanılması suretiyle şirketin kârlılığına göre hesaplanır. ÖKK oranı, firmanın olağan hissedarlarına odaklanan ve kazanılan kar ile sermayelerini karşılaştıran ana karlılık oranlarından biridir. Bazı yatırımcılar bu oranı firmanın adi hisse senedinin cazibesini ölçmek için kullanmaktadır.

Borç / Varlık Oranı

Bazı İslami Finans Endeksleri, örneğin Dow Jones Küresel İslam Endeksi (DJIM) tarafından yapılan nicel gözetimde, finansal kriterlerden biri özkaynak oranıdır. Toplam borç, toplam özkaynağa göre % 33'ten az olmalıdır. Bununla birlikte, bu çalışmanda kullanılan 'FTSE Global Equity Shariah Index' serisi bu oranın gözetim sürecine dahil etmemektedir. Bundan dolayı, bu çalışmada, ŞUŞ'ler ve ŞUOŞ'ler arasında önemli farklılıklar olup olmadığını genel olarak görmek için, bu oranın kullanılmasına karar verilmiştir. Toplam borcun toplam özkaynağa bölünmesiyle bulunan özkaynak oranını, bağımsız bir değişken olarak çalışmada yer

almıştır. Margaritis ve Psillaki (2010) ve Memon ve diğerleri, (2012) gibi diğer bazı çalışmalar özkaynak oranı için, aynı ölçümü kullanmışlardır. Bu oran, borç / özkaynak veya tamamen sahip olunan fonlara dayalı şirket finansman derecesini ölçerek, bir şirketin finansal kaldıracını değerlendirmektir. Bu gösterge, şirketin bir finansal sorun yaşaması halinde, özkaynakların şirketteki tüm borçları karşılama kabiliyetini ölçer.

Borç Finansmanı

FTSE Global Equity Shariah Index nicel gözetimi kapsamında borç oranı, toplam varlıkların yüzde 33'ünden az olmalıdır. Bu çalışmanın amacı nedeniyle, finansal kriz sırasında etkisini daha ayrıntılı görmek amacıyla, borç oranı ikiye ayrılmıştır.

Nitekim Fosberg (2013), ABD'de borsada işlem gören şirketler üzerinde bir çalışma yürütmüş ve kısa vadeli borç finansmanının 2006'da yüzde 1,3'ten 2008'de yüzde 2,2'ye yükseldiğini ve bunun 2008'de meydana gelen finansal kriz nedeniyle 34 milyon dolarlık bir artışı temsil ettiğini bulmuştur. 2008 yılında borsada çöktüğünde, kredi arzının sınırlı olmasından dolayı, şirketlerin borçlanma gücünün daha önce olduğundan daha zayıf hale geldiği sayısız çalışma ile desteklenmiştir (bakınız Brealey ve ark., 2008; Almeida ve ark., 2011; Federal Rezerv, 2012; Fosberg, 2013). Bu nedenle, firmalar finansal zorluklar sırasında KVYK finansmanını daha çok kullandılar. Hassan ve Samour (2016) sermaye yapısı finansman kararının finansal kriz sırasında etkili olduğunu açıkça belirtmişlerdir.

Cheema ve arkadaşları (2017) ve Shahar ve Shahar (2015), ŞUŞ'lerin uzun vadeli borç finansmanını kısa vadeli borç finansmanından daha fazla kullandığını bulmuşlardır. Bunun nedeni, Şeriat yönergelerine göre sınırlı ilgi ve risk paylaşımının kısıtlanması olabilir. Bununla birlikte, ŞUOŞ'ler, işletme sermayesi ihtiyacını karşılamak için daha fazla KVYK kullanmaktadır.

Ancak Sahudin, Ismail, Sulaiman, Rahman ve Jaafar (2019) tarafından yapılan çalışma, ŞUŞ'lerin UVYK'a kıyasla daha fazla KVYK kullandığını buldurmuştur. Malezya'daki ŞUŞ'ler uzun vadeli borcuna kıyasla daha yaygın olarak kısa vadeli borç kullanılmaktadır, çünkü İslami borçlanma araçlarının çoğu uzun

vadeli borçtan ziyade kısa vadelidir (Aggarwal ve Yousef, 2000). Bu aynı zamanda, kısa vadeli borç fonksiyonunun, borcu kontrol etme ve acente sorununu azaltma mekanizması olarak haklı kıldığı kurum teorisini de destekler. Bu nedenle, bu çalışma özellikle finansal kriz öncesinde, sırasında ve sonrasında finansman modellerindeki önemli farklılıkları incelemeyi de amaçlamaktadır.

Maddi Varlık Oranı

Maddi duran varlıklar, bankaların finansal krizden sonra işletmelerin yaşayabilirliğini ölçtükleri için daha popüler hale gelmektedir. Bunun nedeni maddi duran varlıkların maddi olmayan duran varlıklara göre daha fazla likidit olmasıdır. Charalambakis ve Garrett (2012) maddi duran varlıkların firma içindeki sermaye yapısını açıklamada ana nokta olduğunu belirtmiştir. Sonuç olarak, maddi duran varlıklar piyasada daha yüksek değere sahiptir ve firmalar finansal problemleri olsa veya iflas ederse bile, firmalar maddi varlıklarını kolayca ve hızlı bir şekilde satabilmektedirler.

Scott (1977) ve Titman ve Wessels (1988), daha az kârlı firmanın maddi duran varlıkların yüksek değerine sahip olma eğiliminde olduğunu ve firmaların maddi duran varlıklarını daha fazla borç almak veya daha fazla borç almak için teminat olarak kullandıklarını belirtmiştir. Bu nedenle, daha yüksek somutluğu olan herhangi bir firma daha fazla borç alacaktır. Bu işletmenin daha fazla borç finansmanı sağlayarak verginin avantajından faydalanması gerektiğini vurgulayan değiş tokuş teorisine uygun şekilde, işletmenin daha fazla kâr elde etmesini sağlar. Ahmad ve Azhar (2015) bunun borcunda temerrüde düşüren işletmelere, iflastan kaçınmak için bu maddi varlığı kullanmaları için bir seçenek oluturduğunu eklediler.

Nakit ve Alacak Toplamı Oranı

Önceki çalışmaların çoğu, işletmelerin kısa vadeli finansal yükümlülüğünü yerine getirme kabiliyetini ölçmek için likidite oranını kullanmıştır. Thabet ve Hanefah (2014) da çalışmalarında likiditenin işletmelerin kurumsal performansı üzerinde etkili olan faktörlerden biri olduğunu bulmuşlardır.

Bu oran, işletmenin aşırı nakit veya nakit eksikliğinden kaçınmak için, nakit ve alacakları için bir limit belirlemek açısından önemlidir. Buna ek olarak, temsil maliyetini de düşürmektedir. Bildiğimiz kadarıyla bu çalışmamızda, nakit ve alacaklar toplamı, toplam varlıklar içindeki yerinin (CashAR) kurumsal performansa etkisini inceleyen ilk çalışmadır. Bu değişken, ŞUŞ için İslami endekste listelenmesi için yerine getirmesi gereken bir ölçüt olduğu için, bu çalışmada bağımsız bir değişken olarak seçilmiştir. Farooq ve Alahkam (2016), İslami esaslara dayanan ekonomi nedeniyle, İslami finansal sistemin daha istikrarlı ve dayanıklı olduğunu çalışmalarıyla desteklemişlerdir.

Büyüme Oranı

Bu çalışmada, cari yılki satış eksi geçmiş yılki satışların cari yılki satışlara bölünmesi, işletme büyüme oranının bir göstergesi olarak kullanılmıştır. Çalışmalarında büyüme oranı için aynı ölçümü kullanan önceki çalışmalar (Salim ve Yadav, 2012; Bundala, 2012; Proença ve diğerleri, 2014; Cheema ve diğerleri, 2017) bulunmaktadır. Titman & Wessel'e (1988) ve Rajan & Zingales'e (1995) göre, gelecekteki büyümesi yüksek olan firmaların finansman kararlarında daha az kaldıraç kullanıldığını göstermektedir. Çünkü firma borç finansman yerine özkaynakla finansmanı tercih edecektir. Ayrıca, büyüme firmanın karlılığını etkileyecektir.

Bu çalışma Güneydoğu Asya'dan Malezya, Endonezya, Vietnam, Singapur ve Tayland gibi seçilmiş ülkelere odaklanacaktır. Örneklem seçimi, Güneydoğu Asya bölgesindeki İslami sermaye piyasasının en ilerici bölgelerini içermektedir (Yakcop, 2002). Bu çalışmanın başlangıcında, Güneydoğu Asya'da sanayi sektörü altındaki Halka Açık Şirketlerden 595 örnek tespit edilmiştir. Bununla birlikte, tamamlanmamış finansal tablolar ve hesap dönemi boyunca muhasebe yılı değişikliği gibi çeşitli nedenlerden dolayı 114 şirket, örneklemden çıkarılmıştır. Bu nedenle, seçilen son örnekler ŞUŞ'lerden 197 ve ŞUOŞ'lerden 284 halka açık şirketten meydana gelmektedir.

Tüm örnekler, Thomson Reuter Eikon tarafından yayınlanan DataStream aracılığıyla toplanmıştır. Bu çalışma, amacına ulaşmak için bilanço, gelir tablosu ve nakit akım tablosu gibi tüm finansal tabloları bir araya getirmektedir. Bu çalışmada veriler, Python Pandas yazılımı kullanılarak analiz edilmiştir. Bu, sermaye yapısının

finansal kriz sırasında kurumsal performans üzerindeki etkisini analiz etmek için Python Pandas'ın kullanıldığı ilk çalışmadır. Pandas veri işleme ve analiz için Python programlama dili için yazılan yazılım kütüphanesidir. Pandas sayısal tabloları ve zaman serilerini değiştirmek için veri yapıları ve işlemler sunar. Bu nedenle, bu çalışma için gerekli olan kodlama sistemini oluşturmak, verileri analiz etmek için ilk adım olarak gerçekleştirilmiştir. Bu çalışmada amacına ulaşmak için regresyon denklemleri aşağıdaki gibi geliştirilmiştir:

1. Y (Pretax ROA) $= \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 BOYUT_{it} + \beta_8(X) + \varepsilon$

2. Y (ROE) $= \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 BOYUT_{it} + \beta_8(X) + \varepsilon$

Vasıtasıyla:

Pre-tax ROA = Vergi oranından önce varlığın getirisi

ROE = Özkaynak karlılığı

D/E = Borç / Özkaynak oranı

STD = Kısa vadeli borç oranı

LTD = Uzun vadeli borç oranı

TANG = Maddi varlık oranı

CASHAR = Nakit artı alacak oranı

GRW = Büyüme oranı

BOYUT = Boyut oranı

ε = Hata terimi

X = kukla değişken

0: Şeriat Uyumlu Olmayan Şirketler (ŞUOŞ)

1: Şeriat Uyumlu Şirketler (ŞUŞ)

Analiz, çoklu doğrusallık testi ile başlar ve bu testin amacı, değişkenler arasında çoklu doğrusallık sorunu bulunmadığından emin olmaktır. Sonuçlara göre, tolerans değerlerinin hiçbiri 0,2'den az ve hiçbir Varyans Enflasyon Faktörü (VIF) 10'dan büyük değildir. Bu nedenle, bu çalışma için çoklu bağlantı sorunu yoktur denilebilir.

Analizlere, tanımlayıcı istatistik analizleri ile devam edilmiştir. Şeriat uyumlu şirketlerin (ŞUŞ) kurumsal performansının mali kriz sırasında ve her iki bağımlı değişken için de, vergi öncesi varlık karlılığı (vergi öncesi AK) ve özkaynak kârlılığı (ÖKK), finansal krizden sonra şeriat uyumlu olmayan şirketlerde (ŞUOŞ) daha yüksek olduğu tespit edilmiştir. Ancak bağımsız değişkenler, borç / özkaynak oranı için kısa vadeli borç oranı, uzun vadeli borç oranı, nakit artı hesap alacakları hesap oranı, SCC'nin finansal öncesi, sırasında ve sonrasındaki tüm dönemler için daha düşük bir orana sahip olduğunu göstermektedir. Bu sonuçlar, niceliksel tarama işlemi sırasında endeks sağlayıcı tarafından belirlenen koşullar nedeniyle beklenen bir durumdur. Ayrıca Şeriat endeksinde yer almak ve Şeriat statüsü kazanmak için bir ŞUŞ'in, her zaman söz konusu koşulların yerine getirildiği takip etmesi gerekir. Bu nedenle, ŞUŞ'lerin ŞUOŞ'lere kıyasla her zaman daha düşük kaldıraç oranına sahip olduğunu gözlemleyebiliriz. Bu oranların düşük olması daha iyidir, çünkü yüksek kaldıraç oranı veya borç finansman oranı, şirketin ödeme gücü ve istikrarsızlık riskini arttırabilir.

ŞUŞ için maddi varlık oranı finansal kriz öncesinde, sırasında ve sonrasında ŞUOŞ'lerden daha yüksektir. Bu oran mali kriz döneminden sonra, daha da önem kazanmaktadır. Çünkü, bankalar şirketin yaşama yeteneği için bu oranı dikkate alırlar ve şirketin teminat seviyesinin göstergesidir. Bu nedenle, daha yüksek maddi varlık oranına sahip ŞUŞ'e daha fazla borç verebilir. İflas durumunda daha güvenli hale gelir, şirketler, borçlarını ödemek için maddi duran varlıklarını satabilir.

Toplam nakit ve alacak oranı, finansal kriz öncesinde, sırasında ve sonrasında ŞUOŞ'den daha düşüktür. Her ne kadar yüksek likidite ile daha fazla kredi hacmine ulaşmayı ve yöneticilerin yatırım yapmasını kolaylaşsa da, bu durum yüksek bir iflas riskini ve yüksek ödeme yapmama riskini beraberinde getirir. Ek olarak, düşük likidite temsil sorununun artmaması açısından bir avantaj sağlar.

Öncesinde ve mali kriz döneminde ŞUOŞ'lerin ŞUŞ'lerden daha yüksek bir büyüme oranına sahip olduğunu göstermektedir. Ancak, mali kriz döneminden sonra ŞUŞ'ler, ŞUOŞ'lerden daha yüksek bir büyüme oranına sahiptir. Finansal kriz döneminden sonra ŞUŞ'lerin daha iyi büyüdüğünü göstermektedir. Ayrıca, finansal kriz döneminden sonra ŞUŞ'lerin yatırımcıdan daha fazla ilgi gördüğü kanıtlanmıştır.

Kurumsal performans için ilk bağımlı değişken olarak, vergi öncesi AK'na dayalı çoklu regresyon analizinden elde edilen ikinci önemli bulgu, finansal kriz döneminden önceki borç / özkaynak oranı hariç tüm bağımsız değişkenlerin istatistiksel olarak önemli olduğunu ortaya koymuştur. Ancak finansal kriz döneminde sadece uzun vadeli borç oranları anlamlı değildir ve finansal kriz döneminden sonra hem kısa vadeli borç hem de uzun vadeli borç değişkenleri istatistiksel olarak önemli değildir. Şeriat uyumlu şirketler ancak finansal kriz döneminden sonra önemli bir seviyeye sahiptir. Sermaye yapısının vergi öncesi AK için ŞUŞ üzerindeki etkisi, finansal kriz döneminden sonra ŞUOŞ'lerden 1,6617 kat daha yüksektir.

Kurumsal performansın ikinci bağımlı değişkeni ÖKK'dır. Finansal kriz döneminden önce borç / özsermaye oranı ve nakit artı hesap alacak oranı hariç, finansal kriz dönemi içinde ve sonrasında uzun vadeli borç oranı hariç tüm bağımsız değişkenler ÖKK açısından istatistiksel olarak önemlidir. Finansal krizden önce ÖKK ile ŞUŞ önemli ölçüde artmakta ve sermaye yapısının ÖKK için ŞUŞ üzerindeki etkisinin finansal kriz döneminden önce ŞUOŞ'lerden -2.9264 kat daha düşük olduğunu göstermektedir. Ancak, finansal kriz döneminden sonra, sermaye yapısının ÖKK için ŞUŞ üzerindeki etkisi ŞUOŞ'lerden 4.3171 kat daha fazladır.

Bu çalışmada elde edilen bulgular, akademisyenler, araştırmacılar, düzenleyici kurumlar ve özellikle ŞUŞ ve ŞUOŞ gibi şirketlerin yönetimi için daha fazla araştırma yapmalarının gerektiğini sonucunu doğurmuştur. Bu çalışma düzenleyici kurumlara ve ilgili devlet kurumlarına, şeriat uyumlu statüye ilişkin yönergeler ve çerçeve çıkarmaları rehber olabilir. Bu nedenle, yeni düzenleme ve kılavuz ilkeler oluşturmak için, bu kurumların daha fazla yatırımcı çekmek için yeni kılavuzlar geliştirmek amacıyla yatırımcıların ihtiyaçlarını ve ŞUŞ'lerin özelliklerini anlamaları gerekmektedir. Malezya'da hükümet beş yıl vergi muafiyeti ile yeni

ŞUŞ'lere teşvik vermektedir. Ayrıca, İngiltere ve Fransa'da ŞUŞ'ler de dahil olmak üzere İslami finans sektörü için vergi yapılarını değiştirdiler.

Bu çalışmanın yürütülmesinde bazı sınırlamalar bulunmaktadır. Bu çalışmada, finansal piyasadaki farklı düzeylerde gelişme, hükümet politikaları ve o ülkenin dış olaylara duyarlılığı nedeniyle Asya'daki finansal krizin ülke genelinde farklı olduğu göz önünde bulundurulmamıştır. Buna ek olarak, ülkeler arası bu çapraz çalışma nedeniyle, farklı hukuk sistemleri ve düzenlemeleri, bürokrasi, şirketlerin her ülkede karşılaştığı farklı maliyetler ve faydalar nedeniyle farklılıklar beklenmektedir. Bu sınırlamalar gelecekteki araştırmaların yolunu açmaktadır. Dolayısıyla, gelecekte sermaye yapısı alanındaki araştırma boşluğunu doldurmak için bu sınırlamaları dikkate alınmalıdır.

Anahtar Kelime: Sermaye Yapısı, ŞUŞ, Finansal Kriz, Finansal Performans

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CHAPTER 4

RESULTS AND DISCUSSION

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ABBREVIATIONS

AT	: Agency Theory
ASEAN	: Association of Southeast Asian Nations
CashAR	: Cash plus Account Receivables
CB	: Conventional Bank
CS	: Capital Structure
DJIM	**:** Dow Jones Islamic Market Indices
EBIT	: Earnings Before Interest and Tax
EPS	: Earning Per Share
FC	: Financial Crisis
FDI	**:** Foreign Direct Investment
GCC	: Gulf Cooperation Council
GIIS	**:** Global Islamic Index Series
IB	**:** Islamic Bank
ICM	**:** Islamic Capital Market
IFD	**:** Islamic Financial Development
IFRS	**:** International Financial Reporting Standard
IFSB	**:** Islamic Financial Services Board
LTD	**:** Long-term Debt
MENA	: Middle East, North Africa, Afghanistan, and Pakistan
MTT	**:** Market Timing Theory
NSCC	**:** Non-Shariah Compliant Companies
NPL	: Non-Performing Loan
P	**:** Page
PLC	**:** Public Listed Companies
POT	**:** Pecking Order Theory

PPE	**:** Property, Plant and Equipment
PwC	**:** PriceWaterHouse Coopers
ROA	**:** Return on Assets
ROE	**:** Return on Equity
SAC	**:** Shariah Advisory Council
SC	**:** Securities Commission
SCC	**:** Shariah Compliant Companies
SECP	**:** Exchange Commission of Pakistan
SME	**:** Small Medium Enterprise
SOCF	: Statement of Cash Flow
SOCI	: Statement of Comprehensive Income
SOPF	: Statement of Financial Position
SPSI	**:** Standard and Poor's Shariah Indices
STD	**:** Short-term Debt
TANG	: Tangibility
TOT	**:** Trade of Theory

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PREFACE

The purpose of this study is to investigate the impact of capital structure on corporate performance particularly during the financial crisis period. Most importantly, this study intends to explore until to what extent the capital structure of Shariah compliant companies (SCC) can be different from Non-Shariah compliant companies (NSCC). In addition, this study tries to determine any significant differences in financing pattern predominantly before, during and after the financial crisis period. It is to see the trend analysis and any perceived trends might be extrapolated into the future and used as a basis for making economic forecasts.

Moreover, this is the first study undertake Shariah compliant companies (SCC) from Southeast Asia as sample. This study introduced the new technique to analyze the data, which is Python Pandas programming software. Therefore, this study will make an important contribution to the literature on impact of capital structure on corporate performance essentially for SCC, financial crisis period and the significant differences in firms' financing patterns. Most important, it believes this is the first financial study that used Python Pandas programming software in order to get better and reliable results.

This study used secondary data method to collect the necessary data. The samples for this study are public listed companies that are gathered from five countries. The sample will be collected through DataStream that are published by Thomson Reuter Eikon. The financial statements will be gathered in this study from the year 2005 until year 2012. In addition, this period were divided into three categories, which are firstly, before financial crisis from year 2005 until year 2007, secondly during financial crisis from year 2008 until year 2009 and lastly after financial crisis from year 2010 until year 2012.

This result from this study will offer important insights into Shariah compliant companies (SCC) and give a brief idea to government or authority bodies to facilitate the corporation to build the necessary infrastructure and to convey the latest information and knowledge about Islamic finance. The government can encourage and create attentiveness among the practitioners and researchers by giving incentives such as tax exemption, training and workshop. Besides that, there have

some limitation such as this study just focuses on certain countries and industrial sector due to the lack of available samples on DataStream.

This thesis consists of four chapters. Chapter One will begin with introduction of this study. It will be discussing the background of this study, problem statement, objective of this study, overview of methodology and significant of the study.

It follow by Chapter Two that is starting with the discusses the theoretical literature of capital structure, explanation on the main capital structure theories, the detail of Shariah compliant companies, the Islamic indices, financial crisis, the cause of financial crisis and lastly the variables that will used in this study.

Chapter Three conveys research methodology that used in conducting this study. It explains the research design, model development, and variables measurement in this study. In details, this chapter will describes the process of collection data and the sample that will be used in this study.

Lastly is Chapter Four. The findings and conclusion of this study will cover in this chapter. It begins with the discussion of the descriptive analysis, multicollinearity test analysis, correlation analysis and regression analysis. This chapter will be discussed the finding of this study.

In conclusion part in this study, it will provide the summary of the finding and further explains the implication based on the finding as well as the limitation of this study. At the end, this chapter will provide suggestions and recommendations for future research.

CHAPTER 1

INRODUCTION

The purpose of this chapter is to present the motivation and gap of the study on impact of capital structure on corporate performance particularly during the financial crisis period.

1.1 BACKGROUND OF STUDY

Shariah Compliant Companies (SCC) becomes more prominent and preferable among the investors nowadays. It can be prove since the increasing number of SCC from year to year[1]. There have many important factors that can influence the investors to provide and offer their investment to the firms such as profitability, leverage and capital structure of the firm. In addition, from capital structure itself, the stakeholder and potential investors can observe and predict the financial condition of the firm.

It is due to the outcome from capital structure financing decision that strongly related with the ability of the firm to meet the needs of the stakeholders. Shah and Shah (2007) added that the main objectives of financial manager to maximize the value of firm while ensuring the lower cost of capital. However, the capital structure financing decision among SCC and others such as non-Shariah compliant companies (NSCC), financial institutions and small medium enterprise (SME) should have differences due to the features and characteristics of the firms.

As a general, capital structure can be defined as a mixed of debt and equity that are decided by the firm's financial manager. Previous literature still debated the perfect way to maximise the capital structure. Even until nowadays, it still been a question mark how the firm make a decision to optimum their capital structure. This issue have been rising since year 1958, when Modigliani and Miller established the first modern theory of capital structure that known as MM Irrelevance Theory.

[1]http://www.chinagoabroad.com/en/article/number-of-shariah-compliant-securities-reaches-all-time-high-in-southeast-asia access date on 23/06/20202

On top of that, there have many capital structure theories in the market. Such as an example, MM Myers in 1977 comes out with Trade-off Theory (TOT) as a base of theoretical foundation to explain 'Capital Structure Puzzle'. Then, due to the findings by Donaldson (1961) that found the management prefer to use internal fund compared to external fund, Myers and Majluf (1984) proposed Pecking Order Theory (POT) in year 1984. Lastly, Baker and Wurgler (2002) have been introduced Market Timing Theory (MTT) and this theory shows the influence of market timing is consistent on capital structure. Among these theories, Ebaid (2009) identify that trade-off theory and pecking order theory were the best theories to explain capital structure.

Nevertheless, in the real financial economic situation, it is difficult to put into practice these theories due to diverse circumstances such as every country have different practice of accounting policies, different types of sector and every firm have differences in term of size, competitive conditions, growth opportunity and financial structure. In addition to that, different types of firms such as SCC, NSCC, SME, and financial institutions have differences in term of rules and regulation. As results, these dissimilarities will lead to the different need of capital structure.

In spite of the circumstances that are mentions above, this study will focus to examine the impact of capital structure on corporate performance during financial crisis period. Besides, this study will focus on Shariah compliant companies (SCC) from Southeast Asia. Jais (2013) mentioned that the most important strategic in capital structure financing decisions is arrangement of diverse sources of funds. It will lead to the different aspect on the firm's performance and shareholder wealth.

1.2 PROBLEM STATMENT

Many studies have been done on capital structure. However, most of them focused on the determinants of capital structure (see Titman and Wessels, 1988; Du and Dai, 2005; Nazam, 2006; Hassan, Shafi, and Mohamed, 2012; Mohsin, 2016; Shambor, 2017; Korkmaz, 2018), impacts of capital structure on financial performance (San and Heng, 2011; Umar, Tanveer, Aslam, and Sajid, 2012; Vătavu, 2015; Trinh and Phuong, 2016), how the tax affected capital structure (Gertler and Hubbard, 1990; Mackinlay, 2012), short-term debt and financial crisis (Benmelech

and Dvir, 2013; Fosberg, 2013; Krishnamurthy and Jorgensen, 2013; Bennett, Güntay, and Unal, 2015), and impact of financial crisis on firms' capital structure (Demirhan and Anwar, 2014; Iqbal and Kume, 2014; Proença, Laureano, and Laureano, 2014; Kunt, Peria, and Tressel, 2015). All of these studies using financial institution, small and medium enterprises (SME) and public listed companies (PLC) as samples in their study. Only a few studies have used Shariah compliant companies (SCC) as sample which conducted in Malaysia (Hassan et al., 2012; Ahmad and Azhar, 2015; Shahar and Shahar, 2015; Ramli and Haron, 2017), in Pakistan (Cheema, Mahmood, Farooq, and Yousaf, 2017), and in MENA region (Farooq and Alahkam, 2016). Nevertheless, their studies focus on determinants factor of capital structure. Therefore, in order to fill the research gap there is necessitating conducting a study on impact of capital structure on corporate performance particularly during financial crisis. In addition, this study will focus on SCC in Southeast Asia. To the best of our knowledge, there is no such empirical study that has been conducted until nowadays.

All the countries have been enormous impacted by financial crisis in 2008, after The Great Depression 1929. One of the regions that had the huge impact on their economic condition during financial crisis in 2008 was Southeast Asia. Besides, there have been identified the biggest causes of financial crisis were interest transaction and most of the financial transactions were involved interest. Despite of that, SCC are prohibited from involving in any interest (riba) transaction. In replace to the interest system, SCC is applying concept of profit and loss sharing in their financial transaction. The reason why SCC did not used interest in their financial transaction because the existing element of *riba* and it forbidden for Muslim even it stated in *Qur'an*[2] that Allah SWT prohibited *riba* in any trade transaction.

Therefore, SCC is expecting to be more resilient during financial crisis period compared to NSCC due to the characteristic of SCC and Shariah guidelines. McGowan Jr. and Muhammad (2010) highlights that the firms need to maintain Shariah compliant status in order to retain the present investors and attract more

[2] "Allah has permitted trade and has prohibited riba" (Al Baqarah 2:275).
"The interest which you give to increase the wealth of people, will have no increase with Allah: But that which you lay out for charity, seeking favor of Allah (He will increase): it is these who will get a
"The interest which you give to increase the wealth of people, will have no increase with Allah: But that which you lay out for charity, seeking favor of Allah (He will increase): it is these who will get a recompense multiplied" (Ar Rum 30: 39).

investors to invest into SCC. In addition, many scholars (such as Hamilton, Jo, and Statman, 1993; Mallin, Saadouni, and Briston, 1995; Statman, 2000) found that the investors started to give attention to ethical and unethical fund of investment. According to Kai (2008), the demand from investors to make investment in SCC increased drastically after Middle East experience unprecedented financial liquidity from the result of high oil prices. As a result, government in numerous countries try to attract investors and corporation by giving benefit such as Malaysia government offer tax incentive and tax exemption if they invest their fund into Shariah securities.

There are many capital structure theories that have been developing since 1958 started with MM Irrelevance Theory and continue with Trade-off Theory, Pecking Order Theory, Agency Theory and Market Timing Theory. Each of this theory has different approach in assist, manage and oversee the capital structure decision. Such as trade of theory is encouraging the firms to use debt financing rather than retained earnings and equity financing in order to obtain tax benefit from deduction interest on debt. Then, SCC is required to follow the standard that determined by Shariah Advisory Council (SAC) and must adhere to the Shariah principles. According to Haron and Ibrahim (2012) the restriction leads SCC to raise their capital via equity financing. Empirically, firms that rely more on equity-based financing tend to be more resilient during financial crisis period. Thus, the question that has been arising which is the most modern capital structure theory that can assist and appropriate to practice under Shariah principles.

Most of the previous studies showed that high debt ratio impact to the high firm's value. It consistent with trade-off theory (Myers, 1977). However, high debt becomes controversial issues to the firm in Islamic finance industry. It is due that any firm that listed under Islamic indices need to follow the financial benchmark that are set by index providers. In addition to that, Yusof, Kashoogie, and Kamal (2009) found that debt financing has potential to outrage the performance of the firms that operation based on Shariah principles. It supported by Kamil, Alhabshi, Bacha, and Masih (2014) that mentioned debt financing will lead to instability in economic and bad implication to the society. Yusof et al. (2009) concluded that debt financing having potential harm to SCC if compared with equity financing. It is because that debt can leave the firm vulnerable during financial crisis. Nevertheless, Fauzi and

Locke (2012) stated that those firm issuing Islamic debt as debt financing are having higher firm value and have positive and significant impact on shareholders' wealth.

In theory, Islamic finance industry show better performance, more stability and exhibited less risk during financial crisis period. Based on Islamic Financial Services Board (IFSB) and Ernst & Young 2016 Report stated that Islamic finance industry had reached a gross value USD 1.88 trillion by 2015. In addition, it also maintained double-digit growth rates despite sustained low energy prices, geopolitical conflicts and economic uncertainty. Global Islamic Finance Report 2017 reported that in December 2016 global Islamic financial service industry stood at USD 2.293 trillion.

Most of the previous research stated that impact of firm that issuing Islamic debt as a source of financing are having higher firm value, positive and significant impact on shareholders' wealth. Therefore, capital structure of SCC and NSCC are expecting to be diverse from each other. As a result, there are lacks of study on SCC concerning capital structure issue particularly during the financial crisis period. Even though, some literature has emerged that offers contradictory findings which is NSCC perform better than SCC. Therefore, this study tries to seek the suitable capital structure theory that is in line with Shariah guidelines and to investigate how the capital structure of SCC can affect the firm corporate performance particularly during financial crisis period.

1.3 OBJECTIVE OF STUDY

The main objective of this study is to investigate the impact of capital structure on corporate performance during financial crisis period. Most importantly, this study intends to determine until to what extent the capital structure of shariah compliant companies (SCC) can be different from non-shariah compliant companies (NSCC).

Specifically, the sub-objectives of this study are:

1. To examine whether there have significant differences in term of corporate performance (pre-tax ROA and ROE) of shariah compliant and non-shariah compliant companies.

2. To investigate the capital structure theories those are appropriate for shariah compliant companies.

3. To explore whether there have significant differences in terms of debt to equity ratio, tangibility ratio, short-term debt ratio, long-term debt ratio, cash plus account receivable ratio and growth ratio for shariah compliant and non-shariah compliant companies throughout the financial crisis period.

4. To determine significant differences in firms' financing pattern particularly before, during and after financial crisis period.

5. To see the trend analysis and any perceived trends might be extrapolated into the future and used as a basis for making economic forecasts.

1.4 OVERVIEW OF METHODOLOGY

This study used secondary data method to collect the necessary data. The samples consist of public listed companies that are gathered from five countries. The sample will be collected through DataStream that are published by Thomson Reuter Eikon. The financial statements will be gathered in this study are from year 2005 until year 2012. In addition, this period have been divided into three categories, which are firstly, before financial crisis from year 2005 until year 2007, secondly during financial crisis from year 2008 until year 2009 and lastly after financial crisis from year 2010 until year 2012.

This study using Python Pandas software to run the analysis in order to get the better and reliable results. Before starting to run the analysis for descriptive analysis, firstly this study needs to identify the outliers among the sample. Therefore, the coding has been created in the software to identify the outliers and taken out from the sample.

Then, this study will run descriptive analysis in order to generate general information from the data. After that, multicollinearity test analysis will be conducted to ensure there is no multicollinearity problem. It continues with correlation analysis, which is to examine the existence of relationship between the variables. Lastly, this study will run regression analysis with using status of the company as dummy variables. From the regression analysis, we can find out and

discover whether there have significant positive or negative relationship between independent and dependent variables. Added to that, we also can determine the strength and potency of SCC before, during and after financial crisis compared to NSCC.

There have several limitation encountered in conducting this study. Firstly, the current study intended to use the sample from several sectors such as finance, construction, chemical, communication, and trading. However, due to the limited number of the sample that was available and listed in FTSE Global Islamic index during the period of study, therefore this study decides to focus on industrial sector only.

Secondly, this study did not take into consideration the specific impacts to the country and industry level. It is because there have different impact between each of the country due to the different level of development in the financial market, the policies of government and the sensitivity of that country to external incidents. This study using the period from year 2005 until year 2012, thus there have lack and very limited information about the policies and regulation for Shariah compliant companies. In addition, in year 2005 shariah compliant status consider very new to the most of the countries and even some of countries do not have information and knowledge about Islamic finance industry.

Lastly, this is cross-country study, therefore the differences are expected due to difference law system and regulation, bureaucracy, financial reporting standard, dissimilar costs and benefits that the firms face in each country.

The above limitations have paved the way to future research. This study only focuses on the several factors the impact of capital structure to corporate performance regardless the country's factor. Furthermore, it recommended that the prospective comparative study with other region and sectors. Therefore, the results will be exciting as it uncovers broader view impact of capital structure on corporate performance especially for shariah compliant companies.

1.5 SIGNIFICANT OF STUDY

The findings of this study should make an important contribution to the field of capital structure predominantly for Shariah compliant companies (SCC). Therefore, it expects to facilitate the practitioners and researchers in formulating the best approach for Islamic financial instrument based on the different needs of the corporation.

This study also will contribute to the knowledge and literature on impact of capital structure to corporate performance for SCC particularly during financial crisis period. This knowledge will help the firms to make better financial decision and judgements in deciding their financing. In addition, firms can identify the financing alternatives (short-term debt, long-term debt, equity or retained earning) that can be used by the firms operating in any situation of economic.

Furthermore, this is the first study undertake SCC from Southeast Asia as sample and analyze the impact of capital structure on corporate performance during financial crisis by using Pyton Pandas programming software. Therefore, this study will make an important contribution to the literature on impact of capital structure on corporate performance particularly for SCC, financial crisis period and the significant differences in firms' financing patterns.

This study also will offer important insights into Shariah compliant companies and give a brief idea to government or authority bodies to facilitate the corporation to build the necessary infrastructure and to convey the latest information and knowledge about Islamic finance. As an example, Turkey still yet to have SCC therefore, Turkey government can encourage and create attentiveness among the practitioners and researchers by giving incentives such as tax exemption and training/ workshop.

The rapid growth in Islamic Finance Industry such as Islamic banking, takaful, waqf, and sukuk can gain more awareness and interest from around the world including Islamic countries (middle east) and western countries (European and America). In addition, the newly emerged literature on Islamic finance that has started to appear in top-tier journals and the number of research papers published in Indexed such as Scopus and Web of Science increasing significantly (Lone, 2016).

CHAPTER 2

THEORITICAL FRAMEWORK AND RELEVANT LITERATURE

Capital structure is tighly related to the ability of the firm in fulfils the need of various stakeholders. As a result, there is a need to make arrangement and decision of capital structure since it will lead and affect the firm performance and shareholder wealth. Therefore, this chapter will be discussing the literature review on capital structure and its impact to corporate performance during financial crisis period. This chapter is dividing into five main sections. Section 2.1 explains the definition of capital structure and it follow by section 2.2 that discuss the western theories of capital structure such as MM irrelevant theory, trade-off theory (TOT), pecking order theory (POT), agency theory (AT) and market timing theory (MTT). Section 2.3 explains about Shariah Compliant Companies (SCC), Islamic indices and screening process of SCC. Section 2.4 explains types of crisis particularly financial crisis in Asian and the causes of the financial crisis that are related to this study. Lastly, section 2.5 discusses the past literature on impact of capital structure on corporate performance for this study.

2.1 CAPITAL STRUCTURE DEFINITION

Gitman and Zutter (2012, p.508) defines the capital structure as "the mix of debt and equity maintained by the firm". Thus, the main concern is how the firm decision to optimum the capital structures by combining the debt and equity financing. In addition, capital structures actually represent of debt financing as debt holders and equity financing as equity holders or shareholders.

Myers and Majluf (1984) stated that capital structure consists of two types sources of financing which are internal financing and external financing. Such as internal financing is retained earning while external financing are debt financing and equity financing. Similarly, Frank and Goyal (2005) and Deakins, Whittam, and

Wyper (2010) in their studies also mentioned that sources of financing can divided into internal and external sources that the firms can used to finance their activities.

Under International Financial Reporting Standard (IFRS) debt or liabilities can be defines as "*a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits"*(Melville, 2015, p.25). It can be divided into two categories, which are short-term debt that called as current liabilities while long-term debt or other word called as non–current liabilities. As an example, short-term debt or current liabilities are accrued expenses, bank overdraft, and trade payable that are expected to be settled within one year while long-term debt or non-current liabilities such as bond, long-term loan, and debentures that are expected to be settled more than one year. Generally, the firms will utilize the short-term debt in order to meet the working capital requirement. Whereas long-term debt normally will be used by the firm to acquire non-current assets and to finance any long-term projects, investments or capital expenditure.

Equity also refer as capital defines under IFRS by Melville (2015, p.26) as *"the residual interest in the assets of the entity after deducting all its liabilities".* Other than issuing debt financing, firm also can obtain their fund without increasing the debt by using equity financing. In order to change the fund through equity financing, firms should sale their shares to the new shareholders or existing shareholders.

A number of studies that explored on how the firms or financial managers determine the optimum capital structure to ensure they can maximize the firm's corporate performance. Based on the empirical results, it shows that there have numerous factors that can influence the firms and financial managers to decide the capital structure financing decision such as profitability, growth, size, tangibility, tax, leverage, liquidity, and industry (see e.g: Titman and Wessels, 1988; G.Rajan and Zingales, 1994; Myers, 2001; Zeitun, Tian, and Gang Tian, 2007; De Jong, Kabir, and Nguyen, 2008; Baharuddin, Khamis, Mahmood Wan, and Dollah, 2011; Zarebski and Dimovski, 2012; Haron, 2015; Shambor, 2017).

Other than these factors, theories of capital structure also in a way of assisting the firm in deciding their capital structure financing. There have significant

development has been made to be more understand regarding the impact of capital structure decision with the numerous studies and theories that were created after MM Irrelevance theory (see Donaldson, 1961; Jensen & Meckling, 1976; Myers, 1977; Myers, 1984).

2.2 THEORIES OF CAPITAL STRUCTURE

There have various capital structure modern theories such as MM Irrelevance Theory, Trade-Off Theory, Pecking Order Theory, Agency Theory, and Market Timing Theory. All these theories will be explain in detail in the below sub-section.

2.2.1 MM Irrelevance Theory

Capital structure modern theory starts to be introduced by Modigliani and Miller in 1958 and it also known as MM Irrelevance Theory which was the pioneer capital structure theory (Modigliani and Miller, 1958). Based on this theory, the financing decision does not affect the firm's value in the perfect world that assumes there are no taxes, no transaction costs, no bankruptcy costs, and no asymmetry of market information. In other words, it means that when the capital market was perfect and no effect on taxes, capital structure decision becomes no power and influence on corporate gain.

Nevertheless after this theory has been introduced, there had countless argument that was stated market are imperfection in real world. Thus, the statements under MM theorem contradicted with the real world practices. Due to this reason, Modigliani and Miller in 1963 have extended their theory by suggested that firm's value can be affected by certain factors which are presence of different tax regimes and presence of an asymmetry of information such as problem between firm management and investors, agency cost, and distress costs. Consequently, the firm's capital structure financing decision might be change due to the other factor that needs to take into consideration.

In year 1963, Modigliani and Miller have included the effect of tax on capital structure and firm value. It means with the existence of corporate taxes, it can increase the value of firm with the leverage due to the tax shield. In other words, the

more debt that the firms issued, the more interest will be incurred and require to be pay. However, consequences from that, it can reduce the amount of tax payable. They argue by using more debt to finance the firm's operation, firm can lower their taxable amount while at the same time the firm will face high possibility of financial distress.

In addition, MM Irrelevance theory also argues that the value of levered firm and unlevered firm are same. The shareholder that hold equity in unlevered firm can sell their shares and that money can be used to buy new equity at the levered firm at the same price. Nevertheless, in reality, levered firms have higher value in market compared to unlevered firm. Therefore, it can conclude that irrelevant propositions by MM Irrelevance theory cannot be apply in the realistic explanation on how the firm choose to finance their operations. Therefore, other scholars such as Jensen and Meckling, (1976), Myers (1984), Myers and Majluf (1984) and Baker and Wurgler (2002) developed other capital structure theories by relaxing the assumption from MM Irrelevant theory.

2.2.2 Trade-Off Theory (TOT)

This theory was developed in 1977 by Stewart C.Myers (Myers, 1977). Generally, this theory was introduced based on taxes and bankruptcy cost by relaxing MM assumption. This theory explains the debt and equity financing based on corporate taxes. If the firm choose to issue debt financing, the interest cost that are incurred cause from the debt will be deductible from the tax amount. However, if the firm choose to issue equity financing, the dividend payment to the shareholders and the retained earnings that the firms earned will be taxable.

Therefore, this theory suggests that firm will maximize their financial leverage by enjoying the tax benefits from issuing the debt financing. In other word, this theory will hold the benefits by raising debts in return of shielding cash flow from the taxes. It also highlights the important of firms to have target leverage because debt financing only favourable due to tax advantage until certain level before it lead to high bankruptcy risk for the firm due to the financial distress. Besides, the big size and profitable firms will issue more debt financing in order to get more benefit on tax even though they had financial distress. However, due to this

attitude among the firms, the big scandal happened such as in US, when Enron Corporation and Lehman Brothers Holding went to bankruptcy. It was shock event to the world especially in financial industry. Numerous firms that had great affect for instance one of the big audit firms, Arthur Anderson fall due to the Enron Corporation collapsed. It realised that these kind of scandal were happening when the firms too rely on debt financing for the firm's operation until one point they were unable to pay back the debt and cannot avoid from fall to bankruptcy.

Trade-off theory can divide into two categories, which are static trade-off theory and dynamic trade-off theory. Static trade-off theory explained the optimal of capital structure that represents of tax advantage and bankruptcy cost. Scott (1976) highlighted that optimal debt ratio can be determined by balancing off between bankruptcy cost and the tax advantage. It approach that profitable firms intends to use more debts with expected lower tax payable due to the interest on debts that are deductable from tax. Therefore, the firms are expecting to earn more profit and will choice for high debt financing. Meanwhile, high debt financing will raise the chance of financial distress to the firm (Myers, 1984).

Another category is dynamic trade-off theory that required additional factors such as transaction costs and subsequent periods in order to optimise the financing choice. In fact, dynamic trade-off theory was amendment from static trade-off theory. The target capital structure should be change based on the period. Thus, this theory suggested that firm need to change their leverage ratio in order to achieve their target capital structure. The speed of adjustment is an important for economic interpretation of the empirical evidence. It takes longer time to offset the deviation from the target if the speed of adjustment is lower. Thus, the credibility of the firm to rebalance the capital structure when making the financing decision will be questionable if the adjustment speed is low. Lambrinoudakis (2012) point out that the negative relationship between profitability and leverage can be explained by endogenous the firm's decision to invest on it.

Based on the preceding study by Mat Nor, Haron, Ibrahim, Ibrahim, and Alias (2011), it highlighted that the firms using trade-off theory in the process of making financing decision for the capital structure. The study based on 790 public listed firms in Malaysia, 269 firms in Thailand and 546 firms in Singapore.

In general, it can conclude that based on trade-off theory for those firms that have higher profitability will issuing more debt financing in order to obtain the advantage of tax saving from interest on debt. Notwithstanding, this theory totally contradicts with Shariah compliant companies (SCC) principles which their operation based on Shariah guidelines and in fact that SCC are prohibited the interest or *riba* from any transaction.

From the previous events, most of the firms went to bankrupt due to the high reliance on debt and it lead to the high bankruptcy risk due to default in loan repayment. Due to this reason, Islamic index provider required all the firms that are listed under Islamic index to go through financial screening process. One of financial screening benchmark is the total debt must be less than 33 percent of total assets. If the debt usages are excess from the necessity, it can create financial distress problem. This is the reason why Islamic index provider provided the benchmark for financial ratio in order to prevent from bankruptcy.

This study focuses on SCC which are the business transaction using profit and loss sharing principles instead of involved with interest transaction. As mention above, interest is one of the elements that are prohibited under Shariah guidelines. Therefore, SCC could not gain any benefit on tax saving from interest on debt. As a result, it can conclude that trade-off theory is not suitable to use for SCC in this study. Myers (2001, p. 81) added in his study "there is no universal theory of the debt-equity choice and no reason to expect one."

2.2.3 Pecking Order Theory (POT)

Donaldson initially introduced this theory in year 1961 after found that the firms prefer to use internal financing instead of external financing to finance their investment regardless the size of the firms. In year 1984, Myers and Majluf modified in a way explaining in details with rationale issue (Myers and Majluf, 1984). This theory is not about optimal capital structure decision however, the preferable of the firm to choose their financing based on cost and benefit to the firms at one time.

This theory highlighted the firm's financing should be utilized by hierarchy of fund. By using this theory, it can predict profitability and leverage relationship due to the information asymmetry between insiders and outsiders. As a result, firstly this

theory proposed to give priority to use internal financing such as retained earnings. It is due to the internal financing required lower information cost and safest mode of financing. Secondly, the firm should used external financing which are consists of debt and equity financing. Meanwhile been suggested that the firm should choose to use debt financing over equity financing. In addition, firm attempt to maintain using internal financing, however once the fund are lessen, firm need to seek to rely on external financing such as debt financing.

Myers and Majluf (1984) identified a few issue that are related to this study. Firstly, issuing debt is more useful for external financing since it is better to issue safe securities rather than risky securities. Secondly, the firm share price will decrease if firms issuing equity financing to the existing shareholders. It is due to the information asymmetry between the new investors and the manager that are supposed to concern about shareholder's wealth. Then, the new equity will become pricier and consequences from that the share price will fall due to the negative reaction.

This theory contradicts with trade-off theory that stated the firms should utilise the benefit of debt tax shields. However, this theory highlights the hierarchy of financing that the firm should give priority. In addition, the using of debt depends on the level of information asymmetry. If information asymmetry is enormous, firm will decide to use retained earnings and debt financing in order to avoid sale of share at the lower price.

Generally asymmetry information problems occur when one party has better quality information compared to others parties such as the firm's manager have insider information while outside investors and creditors do not have the same information. When it happened, firms end up using financial hierarchy to facilitate the information asymmetric problem. In addition, Myers and Majluf (1984) also stated that equity financing only be issued if debt financing fully utilised.

Proença, Laureano and Laureano (2014) showed in their study that debt ratio and profitability have negative relationship for SME in Portuguese. Due to the high financing cost for external financing, SME in Portuguese prefer to use internal financing (e.g. retained earnings) to finance their activities which is in line with pecking order theory.

However, Minhat and Dzolkarnaini (2017) found that SCC prefer to use debt financing rather than equity financing cause of greater asymmetry information. It also highlighted that issuing debt financing must be required with the collateral assets by the firms.

Other study conducted by Ahmad and Azhar (2015) that used SCC in Malaysia presented that in order to avoid agency conflict with shareholder, SCC applying pecking order theory for capital structure financing decision. Therefore, SCC using financing decision based on the hierarchy of the fund usage. It is supported by Sahudin et al., (2019) that also found the financing patterns for SCC in Malaysia persuaded by pecking order theory. Jaafar, Muhamat, Hashim, Ahmad, and Syed Alwi (2017) also emphasize that pecking order theory was suitable for Islamic capital market in Malaysia and appropriated to practice for Shariah compliant companies (SCC). In addition, it discover that growth and risk were the most important factors in determine the capital structure. Frank and Goyal (2003) suggested that pecking order theory is the most among the influence theory with corporate leverage financing decision.

2.2.4 Agency Theory

Jensen and Meckling (1976) have been identifying two types of agency problem in their study that are: (1) conflicts of interests between shareholders and managers; (2) conflicts of interest between shareholders and bondholders.

Firstly, when the firm has plentiful free cash flow, the manager might be making inefficient investment decision. In this situation, usually manager tries to act for his or her own benefits rather than maximise the shareholder wealth. It supported by Graham and Harvey (1999) that found very few managers act as an agent to the shareholder.

Secondly, there have a conflict when shareholder prefer high-risk project with high return while bondholder anxious with the limited liability when the return are insufficient to pay back to the bondholders. Therefore, some studies suggested the firms should use short-term debt financing in order to reduce the agency conflicts. However, Graham and Harvey (1999) found only several firms that used short-term

debt financing. Most of the firm decided to invest in the high-risk project that benefit to the shareholders.

In addition, this theory also stated the amount of leverage can affect the relationship between the managers and shareholders. It is because manager suppose to acts in the interest of shareholder. Besides, the higher leverage in capital structure can affect the firm performance. High leverage will leads to high interest, therefore it will effect to the reduction in cash available. Therefore, manager are able and easily to manipulate and exploitation it.

The agency cost of debt will be increasing if there have raise in usage of debt while the agency costs of external equity will also be increase if there have raise in external equity. Therefore in order to minimise the agency conflict and maximise the firm value, firm need to combine the debt and equity to optimal the capital structure decision (Jensen & Meckling, 1976).

According to Kim and Lee (2003) that found in their study that the agency theory related to the performance of Korean firms during the Asian financial crisis in year 2008. While agency theory and pecking order theory were the main capital structure theory that apply for Shariah compliant companies (SCC) in Malaysia (Sahudin et al., 2019). In addition, it found that Islamic financing give more benefits to the less profitable firm and consistant with the agency cost perspective (Minhat & Dzolkarnaini, 2017).

2.2.5 Market Timing Theory (MTT)

Baker and Wurgler (2002) have been proposed market timing theory in 2002. They recommend the firms need to issue new equity by sales the shares at the time the share price is overrated and buy back the shares when the price is underrated. This theory elucidate that the firms do not concern whether the firms should issuing debt or equity finance. However, the firm only need to choice any form of financing that appears overvalued at that time in the financial market. There were two assumptions that are related to market timing theory which are: (1) Most of the firm would be hesitant to do any adjustment on target leverage due to the asymmetric information in the capital market. (2) Applying ‘timing’ on equity market by the firm.

A number of studies (such as Alti ,2003; Leary and Robert, 2005) have been argue with the market timing definition by Baker and Wurgler (2002). In addition, they also study the impact of market timing on capital structure. Jenter (2005) and Huang and Ritter (2009) found that market timing theory had influenced on capital structure financing decision. Other study by Virk, Ahmed, and Nisar (2014) highlight that the firms in Pakistan might consider market timing effect to change the capital structure decisions. This study based on 104 public listed firms in Pakistan.

2.3 SHARIAH COMPLIANT COMPANIES (SCC)

Shariah compliant companies (SCC) are deemed to comply with Shariah principles, rules, values and restriction when dealing with the financing activities. In order to ensure SCC comply with all the Shariah principles and free from prohibited elements such as riba, masyar and gharar, Shariah supervisory board or Shariah Advisory Board were established to monitor the SCC activities. Below is the definition and explanation of the prohibited elements under Shariah principles for SCC.

Firstly, interest or '*riba*' can be defined as premium that is paid by borrower to the lender or in other words the additional amount that are imposed to the loan according to the `time the money is loaned and the amount of the loan. In addition, interest or '*riba*' is strongly prohibited in Islam and gave negative impact on the economy. Chapra and Ahmad (2002) found that in Bahrain about 76.8 percent of the depositor change to Islamic Financial Institution due to the current financial institutions involved with the interest. In also proved, that one of the causes of bankruptcy during financial crisis comes from the interest on debt financing. Previous big event (such as Lehman Brothers, Enron Corporation) went to failure and bankruptcy after unable to pay back their debt financing.

Secondly, any element of uncertainty, risks and speculation or it called as '*gharar*' in Islam is prohibited for Shariah compliant companies. Nevertheless, '*gharar*' can prevent when transactions are transparent with all details agreed in advance and ownership undisputed. During the Seminar in Islamic Finance in 2010, Mudzaffar Abu Bakar highlighted that '*gharar*' in Islam will encourage the exercise

of due diligence and avoidance of contracts with high degree of information asymmetry with extreme pay-offs.

Thirdly, gambling can defined as activity that is involves betting. In Islam, it also known as '*maisir*'. The winner will get all the money that they bet and the loser will get nothing and lose all the money that has been bet. Therefore, this activity completely prohibited under Islam due to the principles of this game completely contradicts with Islamic principles.

Such as in Malaysia, Securities Commission (SC) of Malaysia set up Shariah Advisory Council (SAC) for the purpose to assist the investors in identifying Shariah compliant securities. This is to ensure their investments are fully complying with the Shariah principles and free from prohibited elements in Islam. In addition, SAC are responsible to monitor SCC from time to time to reassure that they follow and comply with all the Shariah guidelines that are predefined by SAC.

According to former Governor Central Bank of Malaysia, Tan Sri Zeti Akhtar Aziz during the interview with The Edge Malaysia[3], she emphasized there was rapid pace growth in Islamic finance industry. There have a demand for the changing from conventional financial system to Islamic financial system. Non-Islamic countries such as Singapore, South Korea, Japan, Europe, Australia, Brazil, and America Latin has showed so much interest in Islamic finance system and even some of these countries have been implemented Islamic finance system in their own country. Added to this, in UK and France, there have amended their tax structure and in some other international financial centres added Islamic component to accommodate Islamic finance.

El-Qorchi (2005)[4] investigated that there had three motivation of shifting to Islamic finance because strong demand for shariah compliant products and services, demand from Gulf region or oil rich nation for shariah compliant investment and lastly not only muslim investor but non muslim investor also attracted with competitiveness of shariah complaint products and services. Besides, Islamic banking as well have very good reputation and been spared from a serious financial

[3]https://www.theedgemarkets.com/article/special-focus-islamic-finance%E2%80%99s-potential-undertapped
Special Focus on Islamic banking & finance, The Edge Malaysia, Issue 829, Oct 25-31, 2010
[4] El Qorchi, M. (2005). Islamic finance gears up, Finance & Development, 42 (4), December, pp. 46-49.

crisis except for few small cases (such as Dubai Islamic Bank in year 1998 and Ihlas Finans at Turkey in year 2001). Furthermore, PWC (Malaysia) 2008 Report supported that majority of Islamic finance customers were non-Muslim with increasing present of foreign investor. Derigs and Marzban (2015) highlighted that most of the investors are looking for the ethical investment rather than 100 percent focus on profit. In addition, in Malaysia the first announced about SCC traded on Bursa Malaysia was in year 1997. Since that year it introduced, the number of SCC keeps increasing over time drastically based on statistic from Securities Companies of Malaysia.

2.3.1 Islamic Indices

Nowadays in the market, there have numerous Islamic indices and the top three world's leading Islamic indices are Dow Jones Islamic Market Indices (DJIM), Standard and Poor's Shariah Indices (SPSI), and FTSE Shariah Global Equity Index series (FTSE SI). With the demands and trust from the investors, Islamic index become more established in stock exchange composite index. It supported by Pok (2012) that point out the important to maintain severe Shariah compliance is to guarantee investors' trusted and confidence to the Shariah securities.

Dow Jones Global Islamic Indices have introduced the first Islamic indices and it called as DMI 150 index. The purpose of this index is to measure the performance of 150 publicly traded global companies. Faisal Finance launched this index in year 1998 with the collaboration Bank Vontebel.

It followed by FTSE Global Islamic Index Series (GIIS) that was launched at the end of year 1998. Later in year 1999, there were two indices were also launched to provide a benchmark for equity prices for investment by Islamic financial institutions: the Dow Jones Islamic Market (DJIM) Index in Bahrain and the Financial Times Stock Exchange Global Islamic Index Series (GIIS).

In Southeast Asia, the first Islamic index was introduced in year 1999 at Malaysia. Due to the growing interest of investor in Shariah compliant portfolio / securities and the number of Shariah compliant companies were increased drastically. Later, Bursa Malaysia collaborated with FTSE group to launched two

FTSE Islamic Indices in 2007. These two indices are Hijrah Shariah Index (tradeable) and Emas Shariah Index (benchmark).

In addition, the rapid growth of Islamic capital market (ICM) products and services has been remarkable and many countries started to give attention such as Securities & Exchange Commission of Pakistan (SECP) formed Islamic Financial Development (IFD) in year 2015 with the intention that IFD will give assistance and advisable regarding ICM. The increasing numbers of Islamic indices indirectly contribute to the noteworthy development in Islamic finance industry such as waqf, Islamic banking, takaful and sukuk and it also gain more attention as well as interest from around the world.

Even though the number of Islamic Indices not many as conventional indices, however the Islamic Indices growth speedily nowadays. In addition, each Islamic index has their own approach to manage the securities under their index. All the securities must go through and passing the screening process in order to be listed under Islamic index. Besides, each Islamic index has different method in screening process due to the different geographical and tradition among markets. Therefore, this study has to use the sample from the same Islamic index and same screening process in order to ensure the results are reliable, unbiased, and trustable.

2.3.2 Screening Process for Shariah Compliant Companies

Shariah complaint companies (SCC) must be complying with the qualitative and quantitative criteria for screening process that are set by the index provider. Dow Jones Global Islamic Index (DJIM), FTSE Global Equity Shariah Index series, and S&P Shariah Indices are the three leading equity index providers. Even through these leading indices in the market, however every index provider has different screening process that SCC must comply. Such as in Malaysia, Shariah screening methodology was formulated by the Shariah Advisory Council (SAC) that are established in May 1997 as the highest authority in Islamic finance. Based on Data stream that will be used as a channel for data collection in this study, the screening process of SCC based on FTSE index provider. Under FTSE Shariah global equity index series, Yasaar Ltd is an impartial consultancy and leading authority on handling Shariah matters including the screening process. Therefore, for this study all the sample must

follow the screening process that is set by Yasaar Ltd for FTSE Islamic index as an index provider.

The first stage is qualitative or operation screening process which is a non-permissible activity. All the company must not involve to any of the below activities:

1) The companies does not involved to any conventional finance such as non-islamic banking, finance and insurance.

2) Alcohol

3) Pork related products and non-halal food production, packaging and processing or any other activity related to pork or non-halal food.

4) Entertainment activities such as casinos, gambling, and pornography

5) Manufacture of or trade in activities such as tobacco, arms and defence

Initially, if any of the companies involved in the above activities they will filtered out as Non-Shariah compliant companies and not qualify to proceed to the second stage of screening.

Second stage is quantitative or financial screening process. Table 1 below shows that the financial screening criteria that the firms must be met in order to obtain Shariah compliant status. If any firm excess the financial benchmark below they will be unqualified to get the Shariah compliant status.

Table 1: Financial Screening Process for Shariah Compliant Companies

Benchmarks	Measurement
The 33.33 % benchmark	Debt is less than 33.33 percent of total assets
The 33.33 % benchmark	Cash and interest bearing items are less than 33.33 percent of total assets
The 50 % benchmark	Accounts receivable and cash are less than 50 percent of total assets
The 5 % benchmark	Total interest and non compliant activities income should not exceed percent of total revenue

All the company that go through these processes must be passed these two screening stages in order to be listed in the Islamic index and get the Shariah compliant status. This screening process will continuously testing and it held two times a year to ensure all the company listed under Islamic index will be follow the qualitative and quantitative criteria all the times. In case there have any companies did not follow the qualitative criteria or that exceed these benchmarks for the quantitative criteria they will remove immediately from Islamic index and classified as non-shariah compliant company.

Each of Islamic indices have their own approach for financial screening; which the benchmark and measurement were slightly different from FTSE Shariah Global Islamic index. Such an example, the benchmark for liquidity ratio, under DJIM account receivables are less than 33 percent of market capitalization and under S&P Shariah index the liquidity calculation is same as DJIM but the percentage of benchmark is account receivables are less than 49 percent of market capitalization. However under FTSE Shariah global equity index series the benchmark for liquidity ratio is account receivables plus cash are less than 50 percent of total assets and it totally diverse from the others main Shariah indices.

As for debt ratio's benchmark, DJIM and S&P Shariah Index have a same measurement which is total debt are less than 33 percent of the market capitalization. On the other hand, FTSE Shariah global equity index series have difference measurement that is total debt is less than 33 percent of total assets.

Based on the FTSE Russell factsheet dated 31 January 2018 it stated that asset-based debt screening is more conservative approach to Shariah compliance is ensured by rating debt ratio limits that are measured as a percentage of total assets, rather than more volatile measures that use 12 month trailing market capitalisation. This ensures companies do not pass the screening criteria due to market price fluctuation, allowing the methodology to be less speculative and more in keeping with Shariah principles.

Even though screening process for Shariah compliant are strict and inflexible however based on the statistic from SC[5] the number of shariah compliant companies increasing over time since it were introduced in year 1997. It was supported by

[5] https://www.sc.com.my/development/islamic-capital-market/list-of-shariah-compliant-securities-by-scs-shariah-advisory-council access dated 2/12/2019.

McGowan Jr. and Muhammad (2010) that stated companies tend to retain their certification status as Shariah compliant as a strategic to retain their present investor and to expend their market to non-shariah investor. Added by (Pok, 2012) that SCC are financially healhty based on her study for 477 SCC securities in Malaysia.

2.4 FINANCIAL CRISIS

Mishkin (1992, p.117) defines financial crisis as "a disruption to financial markets in which adverse selection and moral hazard problems become much worse, so that financial markets are unable to efficiently channel funds to those who have the most productive investment opportunities".

Financial crisis can be divided into four types of crisis that are currency crisis, sudden stops crisis, foreign and domestic debt crisis and banking crisis. Currency crisis is involves a speculative attack on the currency resulting in a devaluation to defend the currency. In year 1970s, the collapse of gold price was occured and at that time gold was important nominal anchor before floating of currency or exchange rates in Latin America and some other developing countries (Claessens and Kose, 2013).

Secondly is sudden stop crisis that are cause by the role of international factors such as changes in interest rates and spread on risky assets. Sudden stop crisis can be defines as decline in international capital inflows or a sharp reversal in aggregate capital flows to a country, likely taking place in conjunction with a sharp rise in its credit spreads. Countries with relatively small tradeable sectors and large foreign exchange liabilities are frequently affecting compared to other countries.

Next crisis is foreign and domestic debt crisis that are associated with adverse debt dynamics or banking system turmoil. A foreign debt crisis happened when a country in need and cannot service its sovereign or private (IMF, 1998). While the domestic debt crisis takes place when a country having problem with domestic fiscal obligation in real terms such as defaulting explicitly and inflating the currency.

Last types of crisis is banking crisis which is actual or potential bank runs and failures can induce banks to suspend the convertibility of their liabilities, or compel the government to intervene to prevent them from doing so by extending liquidity and capital assistance on a large scale (IMF,1998). This crisis leads to the

monetory collapse and recession. It causes rigorous difficulty to the banking sector when a large proportion of the banking capital was eroded (M.D Bordo, 2008).

Financial crisis also called as US Subprime Mortgage Crisis. It is because subprime mortgage was one of the major causes of financial crisis. In August 2007, the central bank of US Federal Reserve System has increased the interest rate. Due to this action, numerous numbers of existing customers had difficulties to pay the interest and their loan. Therefore, to solve the problem they give their house as collateral to the banks. According to the Taylor (2008) because of this situation, the price of the house falls drastically and bank suffered with the liquidity problem. It supported by Fosberg (2013) that found there had major impact on capital and lending market in United States and around the world during financial crisis. It becomes more worst when financial institutions did not trust with each other and become more restrain in lending money after Lehman brothers went to bankrupt.

In March 2008, Bear Stearns was the first focal financial institutions draw near to bankruptcy. It become more serious when US government takeover Fannie Mac and Freddie Mac in early September 2008. It created more panic and critical after one of the giant financial institutions Lehman Brothers collapsed on mid-September 2008. The next day after Lehman Brothers collapsed, Federal Reserve Bank of New York bailed out AIG with $85 billion credit facility. At that time, as a global company AIG have $1 trillion assets however due to the financial crisis in 2008, AIG lost $99.2 billion[6].

Mishkin (1992) highlights there have five factors that causing the financial crisis, which are increase in interest rates, stock market declines, increase in uncertainty, bank panics and unanticipated declines in the aggregate price level. In addition, other main problem that causes the financial crisis is rating agency that was not transparent and truthful in giving the rating to the firm. Such as Standard and Poor (S&P) rating agency still giving Lehman Brothers ‘A’ rating even a week before collapsed. This rating was very important for the firms because financial institutions will rely on this rating to give out the loan to the firms.

Due to the various major events happened such as Bear Stearns, Fannie Mac, Freddie Mac, Lehman Brothers and AIG, most of the financial institutions massively

[6] https://insight.kellogg.northwestern.edu/article/what-went-wrong-at-aig accessed dated 2/11/2019

reduced their lending to other financial institution and business customer. Consequences from this action, financial institution and firms have liquidity problem and the impact not only in US but also around the world.

According to Trinh and Phuong (2016), it stated that there have three vital impacts on economy during financial crisis. Firstly, there have enormous decrease on supplies and because of that, the demand power shrinks down. Secondly, domestic business fund affected due to foreign direct investment (FDI) reduce either in quantity or in size. Lastly, financial market robustly affected due to the freezing of investing activities and fluctuation of interest rate.

It also reported by World Bank (2010) that high-income countries was fell more sharply compared to other countries while developing countries, the interest rates fell significantly. In addition, East Asian and Pacific region also have affected during financial crisis. It concluded that the effect of financial crisis on cost of capital was different from one country to one country.

Previous research by Iqbal and Kume (2014) that study the impact of financial crisis on firm's capital structure in France, Germany and UK. It using pre-crisis period (2006-2007), during crisis period (2008-2009) and post crisis period (2009-2010) in order to see the impact of financial crisis. The results show during financial crisis there have significant impacts on leverage ratios of firms. However, during post crisis the leverage ratio level back as pre-crisis period and each country found there have different significant level on impact of capital structure.

Fosberg (2013) also found there have an effect on capital structure to the firms in US during financial crisis in year 2008 until year 2009. Nevertheless, the impact was totally reverse as before financial crisis period. Another study on performance of Kuwait banking sector from year 2006 until year 2012 had found that during financial crisis period in year 2008, Kuwait banking sector's profitability, capital, equity and assets has been declined (Atyeh, Yasin, & Khatib, 2015).

Finally, according to Atici and Gursoy (2011) during the financial crisis, most of the bank refuses to give the loan to the firms. Due to the shortage of liquidity, firms having a hard time to pay back their debt and getting external financing also seem impossible due to the high transaction costs. It supported by Proença et al.

(2014) also stated that 86 percent of SMEs in Portuguese seem to have worse financial condition during and after financial crisis period. In addition, Bordo and Meissner (2012) stated that global financial crisis was eruption to the income inequality, credit booms and economic down.

2.4.1 Asian Financial Crisis

The economic turmoil that hit the Asian region in late year 1997 has reinforced awareness of the need for a sizeable debt market, as an alternative way for Malaysian firms to raise their funds. Firms can no longer rely on banks for funds as financial institutions became more preoccupied with non-performing loan (NPL) in the latter part of 1997 and into 1998 as the economy contracted. The Malaysian economy has also seen the emergence of Islamic debt securities, which become rapidly, recognise by market participants.

Benmelech and Dvir (2013) study on the role of short-term debt played in the collapse of the Asian financial crisis in year 1997 until year1998. It found that at least 3 years before financial crisis the debt obligation was negative and there have possibility of business failure.

According to Afkhami Rad, Locke, and Reddy (2013) that have been examines the role of ownership structure on cost of capital during financial crisis in Singapore and New Zealand. They found that ownership structure has helped firms in New Zealand assist protection from the effect of global financial crisis. However, the ownership structure is not at the optimum level for the firms in Singapore.

Other study by Vithessonthi and Tongurai (2015) indicated that the affects of firm size in the relation between leverage and operating performance during the global financial crisis from year 2007 until year 2009. In addition, it discovered that 75 percent of Thai firms' mostly private firms manage to survival during that crisis period without any problem.

In addition, there have studies based on Shariah compliant companies (SCC) during financial crisis period. Farooq and Alahkam (2016) highlighted that SCC in MENA region was under performance than NSCC and the different performance between these two types of firm's status disappear after financial crisis period.

Meanwhile, Ramli and Haron (2017) shows that 239 SCC in Malaysia has significant statistically with debt financing during financial crisis period in year 2008.

Alam, Hassan, and Haque (2013) used three periods in their study that were before financial crisis (2004-2006), during financial crisis (2007-2009) and after financial crisis period (2010-2012) in determine the impact of bonds and sukuk announcement on shareholder wealth. The result shows that the market reaction is negative for the announcement of sukuk before and during financial crisis period.

2.5 IMPACT OF CAPITAL STRUCTURE ON CORPORATE PERFORMANCE

Different formation of capital structure can give diverse impact on corporate performance of the firms. Such an example used of debt financing, equity financing or retained earnings for the firms. This preferable give different impact to the firms and as shariah compliant companies, there has some restriction and limitation to raise their debt financing.

2.5.1 Debt to Equity Ratio

This ratio indicates the proportion of the equity and debt that used to finance the firm's assets. Lower debt to equity ratio shows that the firms are more stable and secure in term of financing. It is because the higher debt to equity ratio, the higher risk to the lenders such as creditors and banks due to the sign of firms having financial distress problem. Besides, from the investor perspective, higher debt to equity ratio indicated that the firms are unstable and there have high possibility that the firms unable to pay back the debts.

In this study, it realised some of the samples having negative equity. However, we still included this kind of sample in this study even we know negative equity means a sign of trouble ahead for the firms. Equity consists of shareholder's capital and retained earnings. According to Mokhova and Zinecker (2016), most of the reasons why the firm having negative equity because of negative retained earnings (losses) exceed the current equity balance. Secondly due to the accounting treatment for goodwill such as firms with high potential of growth are merged by

bigger firm in the market. Moreover, analysis shows that on NASDAQ stock market there is 77% of trade are negative book equity stocks such as big firms that has negative equity were Ford and Revlon. As an example, Revlon have $1.2billion assets and $1.9 billion debt, it means Revlon have negative equity by $0.7 billion. However, most of the firms that have negative equity still operation until now and even still listed in NASDAQ stock market.

Based on pecking order theory (POT), it suggest that the firm need to choice the financing based on the hierarchy which are firstly internal financing such as retained earnings and then follow by external financing. Then, firms need to choice debt financing rather than equity financing for external sources of financing. This theory contradict from trade-off theory (TOT) that are suggest to use debt financing in order to get benefit from taxes deduction from interest on debt.

There have previous studies conducted by Ogebe, Ogebe, and Alewi (2013) found that firms in Nigeria used more equity financing rather than debt financing to finance their business activities. In addition, debt to equity ratio has impact negatively statistical significant with financial performance to the firms in Nigeria. This finding consistent with Memon, Bhutto, and Abbas (2012) that indicated debt to equity ratio for 141 textile firms in Pakistan had negative relationship with corporate performance, ROA. They added that high leverage lead to the lower ROA due to the agency cost. Added to that, Krishnan and Moyer (1997), Chhibber and Majumdar (1999) and Eriotis et al. (2002) also shows that total debt to equity have negatively significant impact on corporate performance, ROE.

According to Asim (2010) his study comparing debt with equity in the context of Maqasid Shariah[7] and it can concluded that debt has the potential of harming the Maqasid Shariah which is the perseverance of religion, life, intellect, lineage and property. Besides, debt can leave the business vulnerable during hard time when the sale was drop. Due to this reason, Shariah compliant companies (SCC) set the limitation for issuing the debt financing. Such as under Jones Dow Shariah Index, the index provider set a benchmark for debt to equity ratio is 33 percent that is the total debt must be not more than 33 percent of total equity. It is to ensure the SCC

[7] Ibn Ashur defined two aspect of Maqasid al-Shariah, which is firstly in general the purpose and wisdom behind the enactment of all or most of the shariah ruling. Secondly, it designed to achieve specific benefit to people in their daily activities such as Islamic finance.

is able to pay the debt-to-debt holders. Study by Shahar and Shahar (2015) explained that public listed construction companies under Shariah compliant status in Malaysia intended to issue more equity financing compared debt financing. However it contradict with Minhat and Dzolkarnaini (2017) that analysed on 129 firms in UK and found that less profitable firms used more Islamic debt financing rather than equity financing.

Al-Kayed, Syed, Zain, and Duasa (2014) performed a study on 85 Islamic banks from 19 countries and found that the relationship between equity and corporate performance, ROE was negatively significant. They also mentioned that if Islamic banks have higher capital therefore it could have better performance.

Furthermore, Bhamra et al. (2010) describe that the possibility of unexpected financial crises has made firms more concerned about financial stability and more conservative in their financial policies. As a result, the debt to equity ratio has become an important survival indicator (Campello et al., 2010). In sum, the aforementioned reasoning clearly proves that the financial crisis did impact on firms' capital structure (L. Hassan and Samour, 2016). In an attempt to provide further evidence, this study tests whether debt to equity ratio for SCC have significant different from NSCC particularly during financial crisis period due to the characteristic of the firm and benchmark that are set by the index provider.

2.5.2 Tangibility Ratio

According to the Fifth Edition of International Financial Reporting Standard 16 (IFRS 16): Property, Plant and Equipment (PPE) defines tangible items are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and are expected to be used during more than one period.

Tangibility assets become more popular as a measurement for bank viability after financial crisis occurred. One of the reasons because tangible assets are liquid compared to intangible assets. It supported by Charalambakis and Garrett (2012) that stated tangible assets is the main point in explaining the capital structure within the firms. It is due to the tangible assets have higher value in market and even if firms have financial problem or faced to financial distress, the firms can easily selling their tangible assets.

Study by Memon et al. (2012) that have been conducted in Pakistan on 141 textile companies and found negatively significant impact of tangibility on corporate performance, return on assets (ROA) ratio. It argued that textile companies in Pakistan spend too much money on unnecessary non-current assets. It consistent with other study by Vătavu (2015) showed that Romanian manufacturing firms have negatively statistical significant impact on tangibility ratio with corporate performance, ROA and ROE. It dispute that Romanian manufacturing firms perform much better if they own fewer tangible assets due to the firms cannot use the assets effectively or do not have sufficient internal funding to undertake profitable investment.

Rajan et al., (1994) supported by stated the firms with less tangible assets and have potential in expansion their business usually prefer low debt ratio in order to avoid the loss from under investment. In addition, Scott (1977) and Titman and Wessels (1988) also showed that less profitable firm intends to have high value of tangible assets and the firms will use tangible assets as collateral in order to get more debt financing. Therefore, any firm that have higher tangibility will issue more debt. This is in line with trade-off theory that suggest, firm need to enjoy the advantage of tax deduction from interest by issuing more debt financing while gain more profit as the same time.

However, Pouraghajan and Malekian (2012) found positively significant relationship between tangibility and corporate performance, ROA based on 400 firms that are listed in Tehran Stock Exchange.

According to the Baharuddin et al., (2011) that showed tangible assets of 22 construction public listed firms in Malaysia were impact positively significant with debt financing. They discover that big firms heavily rely on debt financing. Harc (2015) also revealed the same results for 500 Small and Medium Enterprises (SME) in Croatia. It predicted that SME use tangible assets as collateral in order to increase their long-term debt financing and in case of bankruptcy, the firm could trade their assets. These results consistent with Charalambakis and Garrett (2012) that found tangibility ratio have positively statistical impact on debt financing. Moreover, it explained that tangible assets is used as collateral to finance the debt and it also can reduce the agency conflict between managers and shareholders due to manager will not have the excess in free cash. Other studies such as Jensen and Meckling (1976),

Rajan et al., (1994), Frank and Goyal (2003), Bennett, Güntay, and Unal (2015) and Shambor (2017) also found tangibility ratio had positively statistical significant impact on debt financing.

Nevertheless, this result contradict with other studies such as Titman and Wessels (1988), and Kamil, Alhabshi, Bacha, and Masih (2014) that found tangibility ratio have negatively statistical significant impact on debt financing. It is because the firms issued equity financing rather than debt financing due to the pecking order theory predicts that some tangible assets are more sensitive to information asymmetries. In addition, Harc (2015) also discovered that tangibility ratio have negatively significant with short-term debt financing due to the firm did not used tangible assets as collateral to borrow short-term debt financing.

From shariah compliant companies (SCC) aspect, Hassan, Shafi, and Mohamed (2012) found that tangibility ratio have positively significant impact on debt financing. Nevertheless, NSCC do not have any significant between tangibility ratio and debt financing. It argued that SCC required using tangible assets as collateral in issuing debt while NSCC do not required any collateral in issuing any debt financing. Moreover, the total debt ratio should not exceed the tangibility ratio for SCC. This policy was practise for SCC in order to protect the firms from bankruptcy otherwise their stocks would be alike to sale of debt, which is prohibited in Islam (Yusof et al. 2009).

However, study by Ahmad and Azhar (2015) was contradict with previous study. It found that tangibility ratio for SCC have negatively significant impact with debt financing. It stated that SCC in Malaysia found that in order to mitigate agency conflict with shareholder, SCC more focus in using equity financing and retained earnings. Rajan et al., (1994) added that higher collateral assets will get high debt financing and it will reduce the agency cost. They added that this would give assistance to the firms that have default in their debt to use this tangible asset to avoid from being bankrupt. Moreover, tangibility assets have direct connection with debt financing. In order to generate more profit, firm will issue more debt financing to pay for their firm's operation and capital expenditure. Therefore, firm will used tangible assets as collateral in order to get more loans from debt holder such as bankers. In an attempt to provide further evidence, this study tests whether tangibility ratio for SCC have significant different from NSCC particularly during financial

crisis period due to the characteristic of the firm and benchmark that are set by the index provider.

2.5.3 Debt Financing (Total Debt Ratio)

Many studies have been carried out over the last decades but it produced no conclusive findings. Some researchers have found that debt financing have negatively significant impact to corporate performance either return on assets (ROA) or return on equity (ROE). Such as Salim and Yadav (2012) study on 237 public listed companies (PLC) in Malaysia that consists of six sectors. It found that industrial sector have negatively statistical impact on debt financing with corporate performance, ROA. This result consistent with Du and Dai (2005) that study based on 1484 firms from nine East Asian countries and Zeitun, Tian, and Gang Tian (2007) who used 167 Jordanian firms as sample showed that debt financing have negatively statistical impact on corporate performance, ROA. In addition, study by Vătavu (2015) based on 196 Romanian Listed companies, Kakilli Acaravci (2015) study on 79 manufacturing firm in Turkey and Demirhan and Anwar (2014) study on 140 public listed companies in Turkey also found the same findings.

Hassan, Shafi, and Mohamed (2012) study on 70 Shariah compliant companies (SCC) and 50 non- Shariah compliant companies (NSCC) found that both of SCC and NSCC have negatively significant impact on debt financing with corporate performance, ROA. This result consistent with Thabet and Hanefah (2014) used 263 SCC and Haron (2017) that study on 556 SCC also reported the same result and all these studies were conducted in Malaysia.

It is consistent with pecking order theory, which the firms prefer to use their retained earnings first, followed by debt financing and finally issuing new equity. Due to the asymmetry information, issuing new equity will be more costly (Jensen & Meckling, 1976). It show that regardless the types of firm's status either SCC or NSCC, they are followed the suggestion from pecking order theory. In addition, the main idea of firms that having negative significant results because is confronting with the default risk of having higher loan.

However study by Fauzi (2018) found that firms in New Zealand look likely unfit with pecking order theory. It stated that most of the firms using debt financing in order to gain tax advantage. This is consistant with trade of theory that highlight the more firm issuing the debt, the more tax benefit the firms can enjoy.

This study tries to examine the different impact of short-term debt (STD) financing and long-term debt (LTD) financing particularly during financial crisis. It found in previous studies that STD and LTD financing have different significant impact on corporate performance, ROA and ROE.

i) **Short Term Debt (STD) Financing**

Study by Titman and Wessels (1988) revealed that small firms intend to have more short-term debt (STD) financing than bigger firms. It is because long-term debt (LTD) financing will cause high interest rates while high issuance cost of equity for small firm. It is supported by Salim and Yadav (2012) that PLC under industrial sector in Malaysia also used and utilize more STD than LTD in their firms.

According to Abor (2005) that study on firms in Ghana has found positively significant impact of STD on corporate performance, ROE. Cheema et al. (2017) supported the findings with study on SCC in Pakistan that shows positively significant impact of STD on corporate performance, ROA. Other study by Rajan and Zingales (1995) based on firms in G7 countries, Nazaripour and Shadi (2015) study based 197 firms in Iran and Ameen and Shahzadi (2017) study based on 18 public listed firm in Pakistan also found the same findings.

However, NSCC show negatively significant impact of STD on corporate performance, ROA and ROE based on the study by Cheema et al. (2017). In addition, Ebaid (2009) that used 64 public listed firms in Egypt found STD has negatively significant impact on corporate performance, ROA. It supported by Pouraghajan and Malekian (2012) that study on 400 listed firms in Tehran Stock Exchange and Schulz (2017) study on 3365 unlisted Dutch firms found significant negatively relationship between STD and corporate performance, ROA.

Fosberg (2013) conducted a study based on 4890 listed companies in US and found that STD financing was increase from 1.3 percent in 2006 to 2.2 percent in

2008, which represent $34 million increased due to the financial crisis that happened in year 2008. He added this increasing in STD financing during financial crisis period due to the decrease in assets sales and rejected from bank to provide the loan. It supported by numerous studies (see Brealey et al., 2008; Almeida et al., 2011; Federal Reserve, 2012; Fosberg, 2013) that during the stock market collapsed in 2008, the borrowing power of firms becomes fewer than before due to the credit supply was limited. Therefore, firms used more STD financing during financial difficulties. Hassan and Samour (2016) mentioned that it clearly that capital structure were impact on corporate performance during financial crisis period. In addition, Akbar, Ur Rehman, and Ormrod (2013) reported that private firms in UK highlighted that short-term debt financing is more significant during financial crisis period. In an attempt to provide further evidence, this study tests whether short-term debt ratio for SCC have significant different from NSCC particularly during financial crisis period due to the characteristic of the firm and benchmark that are set by the index provider.

ii) Long term Debt (LTD) Financing

Long-term debt financing is important for the firms in order to expand their business and to finance their assets. Salim and Yadav (2012) found that negative relationship LTD financing with firm performance based on 237 PLC in Malaysia. It supported by Ameen and Shahzadi (2017) based on 18 public listed firms in Pakistan that showed LTD financing had negatively significant impact on corporate performance, ROA and ROE. In addition, Mesquita and Lara (2008) stated that the firms using LTD financing decrease their profitability while those firms used STD financing having more shareholder's value and market value.

Previous studies by Abor (2005), Shahar and Shahar (2015) and Cheema et.al., (2017) indicated that SCC using long-term debt financing (LTD) more than short-term debt financing (STD). It might be because of the restriction for limited interest and risk sharing under Shariah guidelines. However, NSCC prefer to use more STD in order to meet working capital requirement.

Other study in Malaysia by Sahudin, Ismail, Sulaiman, Rahman, and Jaafar (2019) found contradict results that SCC using more STD financing compared to LTD financing. It is due STD are more widely used compared to LTD by the

Shariah-compliant firms in Malaysia because majority of Islamic debt instruments issued short-term debt rather than long-term debt (Aggarwal & Yousef, 2000). Hence, the agency theory justifies the function of short-term debt as a mechanism to control the debt and mitigate the agency problem.

In addition, Proença et al., (2014) stated that SME financing in Portuguese represented 56% was short-term debt financing and only 16% of long-term debt financing. Due to the liquidity restriction, it causes most of the SME paid their supplier after they get paid by their customer. Moreover, 86% of Portuguese SME become in worse conditions on their bank financing after financial crisis occurred.

Vătavu (2015) showed that corporate performance of the firms becomes more higher when the firms avoid using debt financing. However during financial difficulties, firms were prefer to use debt financing due to the lack of cash and unable to pay the debt holders on time. Nagano (2003) also added that firms in East Asian rely on short-term debt during financial crisis. In addition, Dutch SME in Netherland also rely on bank loan which are STD and LTD during and after financial crisis in order to prevent their firms from bankruptcy (Schulz, 2017). In an attempt to provide further evidence, this study tests whether long-term debt ratio for SCC have significant different from NSCC particularly during financial crisis period due to the characteristic of the firm and benchmark that are set by the index provider.

2.5.4 Cash plus Account Receivables Ratio

Most of the previous studies (such as Deesomsak et al., 2004; Mat Nor et al., 2011; Bundala, 2012; Proença et al., 2014; Ahmad and Azhar, 2015) used liquidity ratio in order to measure the firm's ability to meet the short-term financial obligation. Even Thabet and Hanefah (2014) found in their study that liquidity was one of the factor that have impact on firm's corporate performance.

On the other hand, this study will use the ratio of total cash and account receivables divided by total assets. This ratio being one of the financial benchmark under Shariah screening for Shariah compliant companies (SCC) is cash plus account receivables ratio.

This ratio is important to ensure the firm have cut limit for total cash and account receivables in one time in order to avoid excess or lack of cash in the firm. In addition, it also to reduce the agency cost. To the best of our knowledge, this is the first study that examines the impact on total cash plus account receivables over total assets (CashAR) to the corporate performance, ROA and ROE. This variable is chosen as an independent variable for this study due to the one of characteristic of SCC that must be follow passed the financial benchmark in order to be listed in Islamic index. Farooq and Alahkam (2016) supported that Islamic financial system more stable and resilient because of the economic based on Islamic guidelines.

In addition, it argue that SCC more resilient to negative stocks during financial crisis due to their financial benchmark such as low leverage ratio and low cash plus account receivables ratio. Therefore, SCC exposed to the lower risk of bankruptcy and lower risk of non-payment. Grossman and Hart (1982) added that low cash resulted the firm have lower agency problem. Therefore, it can conclude that during financial crisis SCC affected less than NSCC.

High liquidity firm can attract the lenders due to the ability of the firm to meet the obligation. It also can motivate the manager to invest in order to maximise their interest. Therefore, agency theory assumed negative impact liquidity with corporate performance. It supported by previous studies (such as Luo and Chen, 1997; Margaritis and Psillaki, 2010; Mikkelson and Partch, 2003) that highlight higher account receivable and higher cash were positively impact to firm performance. However, this study tries to focus the impact during financial crisis, which is the high possibility that the firm cannot collect the money from receivable during the financial crisis period.

A study based on the 147 firms in Argentina, Brazil and Turkey indicated the firms delay the payment to supplier in order to avoid bankruptcy meanwhile the firms had high level of account receivables due to the customers cannot pay on time (Bastos and Pindado, 2013). Therefore, this study tries to examine the significant different between SCC and NSCC and the impact of CashAR ratio to corporate performance. In an attempt to provide further evidence, this study tests whether cash plus account receivables ratio for SCC have significant different from NSCC particularly during financial crisis period due to the characteristic of the firm and benchmark that are set by the index provider.

2.5.5 Growth

Firms that have more growth opportunity or have high rate of growth ratio will generate more profit from investment. In other word, firms will take a risk to invest into the major or bigger project (Myers and Majluf, 1984; Serrasqueiro and Caetano, 2014).

Study by Salim and Yadav (2012) found that growth ratio have positive relationship with corporate performance, ROA and ROE based on 237 PLC in Malaysia. It supported by Pouraghajan and Malekian (2012) that study on 400 listed firms in Tehran Stock Exchange found that growth ratio have positive impact on corporate performance, ROA. Javed and Akhtar (2012) also found that positive relationship exists between corporate performance and growth of the firms.

Based on Myers (1984) those firms with good record of growth rate, the bank are agreeable to offer the loan. Therefore, growth ratio is one of the important aspects that contribute profitability to the firms.

In an attempt to provide further evidence, this study tests whether debt to equity ratio for SCC have significant different from NSCC particularly during financial crisis period due to the characteristic of the firm and benchmark that are set by the index provider.

TABLE 2: Summaries of Literature from Previous Studies

NO	AUTHOR	SAMPLE	STUDY AIM	KEY FINDINGS
1.	Al-Kayed, Syed, Zain, & Duasa, (2014)	-19 countries -85 Islamic Bank (IB) -Period: 2003-2008	-To examine the effect and determinant of capital structure on IB performance.	-The relationship found between ROE and capital ratios are negative effect on profitability. -If IB has capital ratios more than 37.41%, it was adviced to raise their capital through equity. -IB has better performance if they have higher capital.
2.	Akbar,Ur Rehman,& Ormrod, (2013)	-United Kingdom -4973 firms -Period: 2007-2009	-To examine the affect of credit supply during FC to the financing and investment policies for private firms.	-The results show that credit crisis has adversely affected the leverage ratio of private firms. -This effect is most significant on short-term financing channels such as short-term debt and trade credit. -Therefore, private firms hold cash and issued equity for hedging the negative effect of credit contractions.
3.	Amba & Almukharreq, (2013)	- GCC countries -27 IB & 65 CB - Period: 2006-2009	-To examine the impact of the FC on the performance of IB and CB -To test whether IB performance is better before or during FC	-FC had a negative impact on profitability of IB and CB. -The profitability determinants behaved differently for IB and CB during the crisis. -IB had better capital structure than the CB during the FC -CB had better liquidity and liability ratios than the IB.
4.	Ameen & Shahzadi, (2017)	- Pakistan -18 firms PLC -Period: 2006-2015	-To examine the impact of capital structure on firm's profitability	-Debt ratio and LTD ratio has negative and significant relationship with profitability determinants ROA and ROE -The STD ratio has positive and significant relationship with ROE.
5.	Atyeh, Yasin, & Khatib, (2015)	-Kuwait -Banking -Period: 2006-2012	-To investigate the determinants of the performance before and after the FC	-Overall, banking sector performance increased in 2006 and 2007. -A significant change in trend during FC on Sept 2008 and it shows in decreasing the profitability, ROE, assets and capital.

6.	Bakar & Ali, (2014)	-Malaysia -107 securities of SCC & NSCC -Period: 1990-2011	-To examine whether there have significant differences in the performance of SCC and NSCC, and before, during and after financial crisis	-Overall, there are not many differences between SCC and NSCC securities. -However, there have significantly different during the period of FC -NSCC portfolios are significantly more volatile and sensitive as compared to their peers in the whole period
7.	Bilal & Amin, (2015)	- Pakistan - 5 IB and 5 CB - Period: 2007-2012	-To compare the financial performances IB and CB -To examine whether IB are more profitable, liquid, less risky & operationally efficient than CB during and after US Sub-prime crisis.	- It indicate that IB remained less profitable - Liquidity performances of IB were better than CB - Operational efficiency measures are not in favour of IB - CB performed more efficiently and profitably as compared to IB.
8.	Bastos & Pindado, (2013)	-Argentina, Brazil, and Turkey -147 firms - Period: 1999-2003	-To investigates the use of trade credit by firms from countries that have recently undergone a financial crisis	-The firms with high levels of days-of-sales outstanding and a high probability of insolvency use more trade credit -During FC it causes firms holding high levels of accounts receivable to postpone payments to suppliers. -High-risk firms postpone suppliers' payments to avoid insolvency. This as an evidence of a credit contagion in the supply chain.
9.	Brown, Klapper, & Allayannis, (2003)	-East Asia -327 firms -Period: 1996-1998	-To examine a firm's choice between local, foreign, and synthetic local currency debt -To determine each debt type's use, indicating the importance of examining debt at a disaggregated level	-exploit the Asian financial crisis as a natural experiment to investigate the role of debt type in firm performance. -Surprisingly, it found that the use of synthetic local currency debt is associated with the biggest drop in market value, possibly due to currency derivative market illiquidity during the crisis

10.	Cheema, Mahmood, Farooq, & Yousaf, (2017)	-Pakistan -3 SCC & 5 NSCC -Period: 2009-2015	-To explore the relationship between capital structure and financial performance of SCC and NSCC	-SC: only NDTS have positive and significant effect with ROE only the all other determinants are insignificantly related to performance -NSCC: only STDR and INHOL are significant with both measures of performance ROE and ROA, STDR negatively and INHOL positively. -LTDR is showing positive and insignificant results with both performance measures ROA and ROE.
11.	Demirhan & Anwar, (2014)	-Turkey -140 PLC - Period: 2008	-To investigates the factors that affect the firm performance during the FC	-The liquidity of the firm affects the firm's market value positively whereas high leverage inversely affects the firm performance, ROA and ROE during crisis.
12.	Ebaid, (2009)	- Egypt - 64 firms -Period: 1997-2005	-To examine the impact of CS on firm performance in Egypt as one of emerging or transition economies	-STD and TTD affect negatively the firm's performance measured by ROA. -STD, LTD, and TTD have no significant impact on firm's performance measured by ROE or GM. -Conclusion that capital structure choice has less influence on the financial performance
13.	Erkens, Hung, & Matos, (2012)	-30 countries -296 financial firms -Period: 2007-2008	-To investigates the influence of corporate governance on financial firms' performance	-firms with higher institutional ownership took more risk prior to the crisis, which resulted in larger shareholder losses during the crisis period -firms with more independent boards raised more equity capital during the crisis, which led to a wealth transfer from existing shareholders to debtholders
14.	Farooq & Alahkam (2016)	-MENA region (8 countries) -SCC & NSCC -Period: 2005-2009	-Aims to document the relative performance of non-financial SCC and NSCC	-Found that SCC underperform NSCC -The results also show that underperformance of shariah-compliant firms holds in the civil law and in the common law countries. -It shows that difference between the performance of SCC and NSCC disappears during the crisis period

15.	Habib & Ul Islam, (2014)	-India -Conventional Index and Islamic Index -Period: 2003-2013	-To assess and compare the performance of MSCI India Islamic index and MSCI Malaysia Islamic index with their respective conventional Indices	-India Islamic Indices has underperformed while as in case of Malaysia, it has outperformed the respective conventional Index during period under study. -However, in both cases Islamic Index has outperformed its counterpart index during crises period.
16.	Harc (2015)	-Croatia -500 SME -Period: 2005 - 2010	-To investigate the relationship between tangible assets and the capital structure	-The relationship between tangible assets and STD is negative and statistically significant in all observed years. -The relationship between tangible assets and LTD is positive in all observed years and statistically significant.
17.	Haron & Ibrahim, (2012)	-Malaysia -663 SCC -Period: 2000-2009	-This study intends to explore the dynamic aspect of capital structure among SCC.	-Concluded that consistent with the dynamic trade-off theory, the faster the adjustment takes place, the greater benefits of closing the gap to the target capital structure will be expected. -Size is an important factor for Shariah compliant firms in Malaysia. -Bigger firms tend to generate higher profit and have higher internal funding to support their investment.
18.	L. Hassan & Samour (2016)	- US - PLC - Period: 2004-2011	-To examines if the financial crisis affected the capital structure in various industries differently.	-Findings show that the capital structure changed differently among the industries and find a significant effect of the crisis in the Consumer Services and Healthcare industry. -It indicate that the impact of capital structure on firm performance is industry-specific as well.
19.	Memon et al., (2012)	- Pakistan -141 firms in textile sector -Period: 2004-2009	-To investigate the impact of capital structure on firm financial performance	-All the determinants of capital structure are significant and the findings suggest that performing below the optimum capital structure level and textile firms of large size remained fail to achieve the economies of scale. -It is a matter of serious concerns for policy makers and

				financial managers and this problem should be dealt positively to improve the financial performance of firms.
20.	Minhat & Dzolkarnaini, (2017)	-United Kingdom -129 firms -Period: 2005-2009	-To explore to what extent the Islamic financing instruments are used by non-financial firms. (Islamic & Non Financing Instrument)	-Less profitable firms are found more likely to use debt than equity in which case Islamic instruments were preferred over conventional debt. -The finding suggests that Islamic financing does benefit less profitable firms, which is consistent with the agency cost perspective.
21.	Mohamed, Masih, & Bacha, (2015)	- Malaysia -120 bonds and 80 sukuk -Period: 2000 - 2012	-What are the significant determinants of target debt ratio and its dynamic adjustment behavior for the two dominant principles of issuance, sukuk and conventional bonds?	- Results provide stronger support for trade-off view based on a firm's optimizing behavior among sukuk and conventional bond issuers, however with different issuance motives. - It found the evidence that the sukuk offers bring unique benefits to corporate issuers unlike those of the conventional bonds
22.	Nazaripour & Shadi, (2015)	- Iran -179 firms -Period: 2010 - 2013	-To investigate the impact of financing on evaluating the performance of companies through debt and the optimal structure of debt.	-Found negative and significant relationship between STD & LTD financing through debt and performance. -Positive and significant relationship between the optimal structure of debt and the performance.
23.	N. Ahmad & Azhar, (2015)	-Malaysia -194 SCC from industrial sector -Period: 2009 - 2013	-To identify which firm-specific factors and macroeconomic factors influence capital structure decision of Shariah compliant.	-The results indicate that only two factors, which are, tangibility and profitability determine the capital structure of SCC. -This suggests that SCC' capital structure is in tandem with the pecking order and agency theories.
24.	N. N. N. M. Hassan, Shafi, & Mohamed, (2012)	-Malaysia -70 SCC, 50 NSCC -Period: 2005-	-To disclose the influential factors of capital structure of SC and CC.	-Found that SCC's debt ratio was significant with profitability, size and tangibility but NDTS was insignificant. -The NSCC's debt ratio was significant with profitability,

		2010		size and NDTS but tangibility was insignificant. -This has suggested both SCC and NSCC have different factors to be considered in deciding the capital structure.
25.	Pok, (2012)	-Malaysia -477 SCC securities -Period: 2010	-To investigate whether Malaysian SC quantitative screening adopts criteria, which can be considered more liberal than those used by the DJIM, S&P and FTSE Syariah index providers, and also to assess the financial health of the sample companies. (SCC)	-Result shows fewer companies (12.16%) are qualified under the DJIM criteria and even more companies (63.10%) are qualified under the FTSE criteria. -The reasons for this difference are: (1) the use of different formulae to calculate the ratio (2) the use of different thresholds (3) the different emphases applied by the world index providers. -The results of the financial health screen show that the majority of the Syariah-compliant companies are financially healthy.
26.	Proença, Laureano, & Laureano, (2014)	-Portugal -12,857 SME -Period: 2007-2010	-To investigate the determinants of Portuguese SMEs capital structure - To examine the effects of 2008 financial crisis period on Portuguese SME's capital structure.	-Results suggest that liquidity, asset structure and profitability are the most important determinants explaining the capital structure of Portuguese SMEs. -We report a downward tendency on companies' debt ratios levels during the financial crisis.
27.	Ramli & Haron, (2017)	- Malaysia -239 SCC -Period: 2000-2014	-To explain which factors determine debt of the firms, given different setting of periods, countries and methodologies.	-The result shows that certain firm-specific variables like growth opportunity, size, bankruptcy risk, non-debt tax shield (NDTS) and Herfindahl-Hirschman Index are significant determinants of a firm's debt. -Also macro variables such as inflation, GDP and economic crisis are also found to be significant determinants of Shariah approved firms' debt.

28.	Salim & Yadav, (2012)	- Malaysia -237 PLC -Period: 1995-2011	-To examine the relationship between capital structure and firm performance.	-ROA, ROE, & EPS have negative relationship with short term debt (STD) ,long term debt (LTD),total debt (TD). -positive relationship between the growth and performance for all the sectors. -Tobins Q reports that there are significantly positive relationship between STD and LTD -Total debt (TD) has significant negative relationship with the performance of the firm.
29.	Sanusi, (2014)	-Malaysia -422 PLC -Period: 1996-2000	- To determine the impact of wealth tax (zakat) and corporate tax (CT) on the firm's capital structure.	-It found that that firm pay more zakat will have more debt. -The firm will utilised more debt in order to reduce their CT. -A significant relationship exists between age, size, ROA, volatility, industry classification, tangible assets and bankruptcy with the capital structure.
30.	Schulz, (2017)	-Dutch -SME -Period: 2008-2015	-To examine the effect of capital structure on firm performance	-It show a negative and highly statistically significant relationship between all proxies of capital structure and the ROA. -The results for ROCE as a proxy for performance are mixed but statistically significant, which can be explained by the fact that ROCE is using EBIT as a performance indicator
31.	Shahar & Shahar, (2015)	- Malaysia -70 SCC & NSCC in construction sector -Period: 2008-2012.	-To investigates the impact firm leverage towards the performance of SCC and NSCC -To discover on their firm leverage practices from each other.	-Debt ratio does not give an impact towards SCC's performance based on ROA and ROE -STD and LTD does give an impact to SCC's performance based on Market- to-book value (MTBV) with negative relationship. -LTD and TD does give an impact to NSCC's performance based on ROE.

32.	Sheikh & Qureshi, (2017)	-Pakistan -20 CB & 5 IB -Period: 2004-2014	-To investigate how conventional and Islamic commercial banks in Pakistan choose their capital structure -what are the most significant factors that affect their choice of capital structure	-It indicate that conventional commercial banks are more levered than Islamic commercial banks. -conventional commercial banks are larger, profitable and have relatively safe earnings than Islamic commercial banks -Islamic commercial banks have relatively more fixed operating assets and growth in total assets compared to the conventional commercial banks
33.	Shambor, (2017)	- Worldwide -346 oil and gas firms from Global Oil and Gas Index (OILGSWD) - Period: 2000-2015	-To investigates the capital structure determinants	-Major findings of the study indicate that tangibility, profitability, size, liquidity and non-debt tax shield are the significant determinants of capital structure of oil and gas firms. - The global financial crisis has to some extent a significant impact on the capital structure determinants of oil and gas firms and has no significant impact on liquidity, as indicated by the OLS regression analysis results.
34.	Skoogh & Sward, (2015)	- Sweden - 271 PLC -Period: 2005-2014	-To examines if tangible assets is a significant explanatory variable to explain the debt to total assets ratio. -To find the relationship between the overall tangibility and the debt ratio	-Results shows overall tangibility is a significant explanatory variable that is positively related to the debt level -Shows that the least firm specific assets have the largest impact on capital structure -Conclusively the results show that tangible assets explain the capital structure decision.
35.	Suto, (2003)	-Malaysia -375 non-financial (KLSE) - Period: 1995-1999	-Analysing the corporate finance and governance structure in Malaysia before and after the financial crisis of 1997, utilising the agency cost approach. -To examine the effects of debt	-the commitment of banks to finance corporate debt as well as lending obviously increased debt ratios. -increasing ownership by native Malays, both the direct and indirect holding of corporate shares, played no significant role in disciplining corporate management. - high dependency on debt led to excessive corporate

		(FC Period)	financing on corporate investments before the financial crisis.	investment before the crisis. - These results imply that the concentration of risks on the banking sector and social policy advocating the dispersion of corporate ownership weakened the corporate governance mechanism, thereby exacerbating the distress of Malaysia's corporate sector during the financial crisis.
36.	Trinh & Phuong, (2016)	-Vietnam -265 PLC - Period: 2006 - 2013	-To investigates effects of financial crisis on capital structure of listed firms.	-Empirical result indicates that firm size, profitability, and tangibility have statistically significant impacts on capital structure. -The growth is not statistically significant in explaining the variance of the leverage. -The study result also reveals that capital structure of Vietnamese listed firms has not changed significantly under the financial crisis
37.	Umar et al., (2012)	-Karachi, Pakistan -100 firms -Period: 2006-2009	-To examines the impact of capital structure on firms' financial performance -To investigate the association among debt level and financial performance of firms	-It found that STD, LTD and TD were negatively impacts the EBIT, ROA, EPS and NPM. -EPS shows negative relationship with STD and positive relationship were found with LTD where the relationship is insignificant with TD. -The results also indicate that ROE has an insignificant impact on STD and TD but a positive relationship exists with LTD -These results, lead to the conclusion that capital structure choice is an important determinant of financial performance of firms.
38.	Vătavu, (2015)	- Romania -196 manufacturing PLC	-To establish the relationship between capital structure and financial performance in	-Results indicate that firm performance is higher when they avoid debt and operate based on equity. -The firm do not have sufficient internal funding to undertake profitable investments and do not use their assets

		-2003-2010		effectively. -During times of increased taxes and inflation profitable companies divest part of their assets reducing their costs. -There is an indication of risk-taking behavior across manufacturing companies
39.	W. Ahmad & Radzi, (2011)	-Malaysia -sukuk and conventional bond - Period: 1990-2009	-To investigate the sustainability of sukuk issuance as well as conventional finance during the recent economic downturn by focusing on the Malaysian debt capital market	-both sukuk and conventional bond issuance in Malaysia consider foreign exchange to be the major cause of bond issuance. -unlike sukuk, conventional bond issuance does not consider the economic condition as proxied by GDP and market liquidity as a driving force. -These imply insensitivity of the issuance of conventional bond compared to sukuk with regards to current economic conditions.
40.	Yazdanfar & Öhman, (2015)	- Swedish - 15,897 Swedish SMEs in five industry -Period: 2009-2012	-To examine the relationship between debt level and performance among small and medium-sized enterprises (SMEs)	-confirms that debt ratios, in terms of trade credit, short-term debt and long-term debt, negatively affect firm performance in terms of profitability. -As a high debt ratio seems to increase the agency costs and the risk of losing control of the firm, SME owners and managers tend to finance their businesses with equity capital to a fairly high degree

CHAPTER 3

RESEARCH METHODOLOGY

This chapter discusses the methodology for this study. Generally, the data collected from the Data Stream, Thomson Reuters Eikon. This chapter will explain the research methodology on how the study is conduct in order to accomplish the targeted objectives as stated in preface and chapter one. This chapter summarises all the constructs reviewed into a broad conceptual framework and develops hypothesis to be test in the data analysis. This chapter begins with section 3.1 which is explains the research design which comprises sample of study and data collection method. It followed by section 3.2 that are discussing the data framework for this study. It give the picture about this study. Next section 3.3 explains the variables measurement that will be using in this study and section 3.4 explain the hypothesis development to test in this study. Last section 3.5 explains the data analysis for this study. Pyhon Pandas software is being used to analyse the outcomes in this study. The upcoming chapter will discuss the results and findings that are obtained using the methodology outlined in this chapter.

3.1 RESEARCH DESIGN

3.1.1 Sample Selection

As been highlighted in Chapter 2, Shariah compliant companies (SCC) are the firms that their operation needs to comply with law and principles under Shariah guidelines. As SCC' claims to be compliance with the Shariah guidelines, therefore SCC are expected to be more resilient compared to non-Shariah complaint companies (NSCC) particularly during financial crisis due to the firm's characteristics and financial benchmark as explained in chapter two.

This study will be focuses on Southeast Asia that comprise eleven countries: Malaysia, Indonesia, Vietnam, Singapore, Thailand, Philippine, Brunei, Cambodia, Laos, Myanmar, Timor Leste. Nevertheless, only five countries will be included

which are Malaysia, Indonesia, Vietnam, Singapore, and Thailand in the sample due to the restriction and availability of the data. of SCC in these countries only available on Thomson Reuters Eikon website for the period of study. In addition, Philippines also have SCC unfortunately; it started to be listed under FTSE Islamic Index on year 2011 and the data available on same year and onwards. Therefore, SCC from Philippines need to be remove from sample list.

The selection sample in Southeast Asia is justified based on several factors. Firstly, the geographical location, which is Asia, it can divide into five regions namely: i) Southeast Asia ii) East Asia iii) Central Asia iv) South Asia v) Southwest Asia (Middle East). Yakcop (2002) highlighted that among these regions, Southeast Asia is among the progressive regions in Islamic industry. In this study, the samples have been collected through DataStream that are published by Thomson Reuter Eikon. Through this channel, it showed that Southeast Asia was the most numerous public listed companies under Shariah compliant companies' status predominantly for industrial sector.

On top of that, Southeast Asia region have a sparse literature in impact of capital structure on corporate performance particularly during financial crisis period. Most of the previous studies focus on determinant of capital structure on Shariah compliant companies in Malaysia only (e.g. Haron and Ibrahim, 2012; Shahar and Shahar, 2015; Ahmad and Azhar, 2015; Ramli and Haron, 2017; Haron, 2017). Added to this, countries under Southeast Asia also are the member of the Association of Southeast Asian Nations (ASEAN). Hence, ASEAN is encouraged the participating countries to cooperate and compete with each other on a healthy and fair basis.

Besides that, among Southeast Asia countries there have similarity and dissimilarity among each other for instance in term of accounting practices, corporate control and corporate governance. Malaysia and Singapore are members of the British Commonwealth and these two countries have some common in term of accounting standard practise. In addition, Malaysia, Thailand, Indonesia and Vietnam are emerging market while Singapore is more established markets. Therefore, these kinds of environment with give more opportunity to see the impacts of capital structure decisions especially during financial crisis period.

This study has identified 595 Public Listed Companies in Southeast Asia under industrial sector from five countries that are mention above. However, 114 companies are excluded from the sample due to various reasons such as unavailability of financial statements, financial statement do not have complete records during the period of study and change of accounting year during the period used in this study. The remaining 481 Public Listed Companies were employed as samples in this study. This sample is dividing into the status of the companies, which consists of Shariah Complaint Companies (SCC) and Non-Shariah Compliant Companies (NSCC). SCC represents 197 of the sample and the remaining 284 sample represent NSCC. Table 3 below shows the summary of this sample based on countries and categories as below:

Table 3: List of Sample Based on Country and Status of the Company

Country	**Non-Shariah Compliant Companies (SCC)**	**Shariah Compliant Companies (NSCC)**
Malaysia	65	76
Indonesia	33	17
Singapore	80	53
Thailand	43	39
Vietnam	63	12
Total	**284**	**197**

The sample of the study only focuses on industrial sector. Based on Memon, Bhutto, and Abbas (2012), industrial sector play an important role in economy and generally this sector larger than other sector. In Malaysia, for instance industrial sector is included under Third Industrial Master Plan (IMP3) from year 2006 until year 2020. This IMP3 is very important for the future of industrial sector. Government is predicted this sector will growth by 5.6 percent every year and able to contribute about 28.5 percent for gross domestic product (GDP) in year 2020. The objective of this IMP3 is to compete globally through innovation and transformation in this industrial sector. It supported by Chan, Wang, and Wei (2003) that are mentioned industrial sector become more important to the Asian market especially after financial crisis in late 1990s. In addition, industrial sector also have a role in

explaining the pattern of firm's financing. There have several studies focusing on determinant of capital structure and financing decision on Asian Pacific countries (e.g. Nagano, 2003; Kim and Lee, 2003; Deesomsak, Paudyal, and Pescetto, 2004; Hempelmann and Biscoping, 2005; Driffield and Pal, 2010). These studies were carrying out due to the difficulties of the firm in raising their fund impact from financial crisis event. Therefore, this study tries to focus on Shariah compliant and non-Shariah compliant companies in Southeast Asia to investigate the impact of capital structure on corporate performance during financial crisis period.

3.1.2 Data Collection

This study identified 481 public listed companies under Shariah compliant companies (SCC) and non-shariah compliant companies (NSCC) from five countries. As quoted by Roscoe (1975) and Sekaran (2000) the total number of sample to be considered most appropriate size for most of the research. It is supported by other scholars such as Salim and Yadav (2012) used 237 public listed companies to investigate the relationship between capital structure and firm performance. Umar, Tanveer, Aslam, and Sajid (2012) used 100 companies in Karachi Stock Exchange to examines the impact of capital structure on financial performance while Demirhan and Anwar (2014) who used 140 public listed companies in Turkey to investigate the factors that affect the firm performance during international financial crisis. Vătavu (2015) used 196 manufacturing companies in Romania to examine the relationship between capital structure and financial performance during financial crisis, while Trinh and Phuong (2016) used 265 listed companies in Vietnam to investigate the effects of financial crisis on capital structure. Minhat and Dzolkarnaini (2017) that used 129 firms in United Kingdom to explore to what extent the Islamic financing instruments are used by non financial firms and lastly Shambor (2017) that used 346 oil and gas companies from worldwide sample to investigate the capital structure determinants.

The data has been collected from year 2005 until year 2012 from DataStream through Thomson Reuter Eikon. In order to achieve the objective of this study, firm's financial statements will be used. All the company's financial statement such as statement of financial position (SOPF), statement of comprehensive income (SOCI),

statement of cash flow (SOCF) and ratio statement were collected regardless the status of the company either Shariah Compliant Companies or Non Shariah Compliant Companies.

The period of this study were divided into three categories which are firstly, before financial crisis period from year 2005 until year 2007, secondly during financial crisis period from year 2008 until year 2009 and lastly after financial crisis period from year 2010 until year 2012. This financial crisis period have been chosen based on the event that were happened through that period. It supported by others scholars such as Iqbal and Kume (2011) and Alam, Hassan, and Haque (2013) that also used the same financial crisis period in their study. In addition, this total eight years period of data to see whether there have changes in the perceived financial trend and significant differences in firms' financing patterns. Therefore, it believes the finding of this study will be more accurate and reliable.

3.2 RESEARCH FRAMEWORK

Figure 1 describes the conceptual framework of this study. Referring to this framework, this study examines the impact of capital structure on corporate performance particularly during financial crisis period. In addition, this study also tries to find out the influence of capital structure theories on making the financing decision.

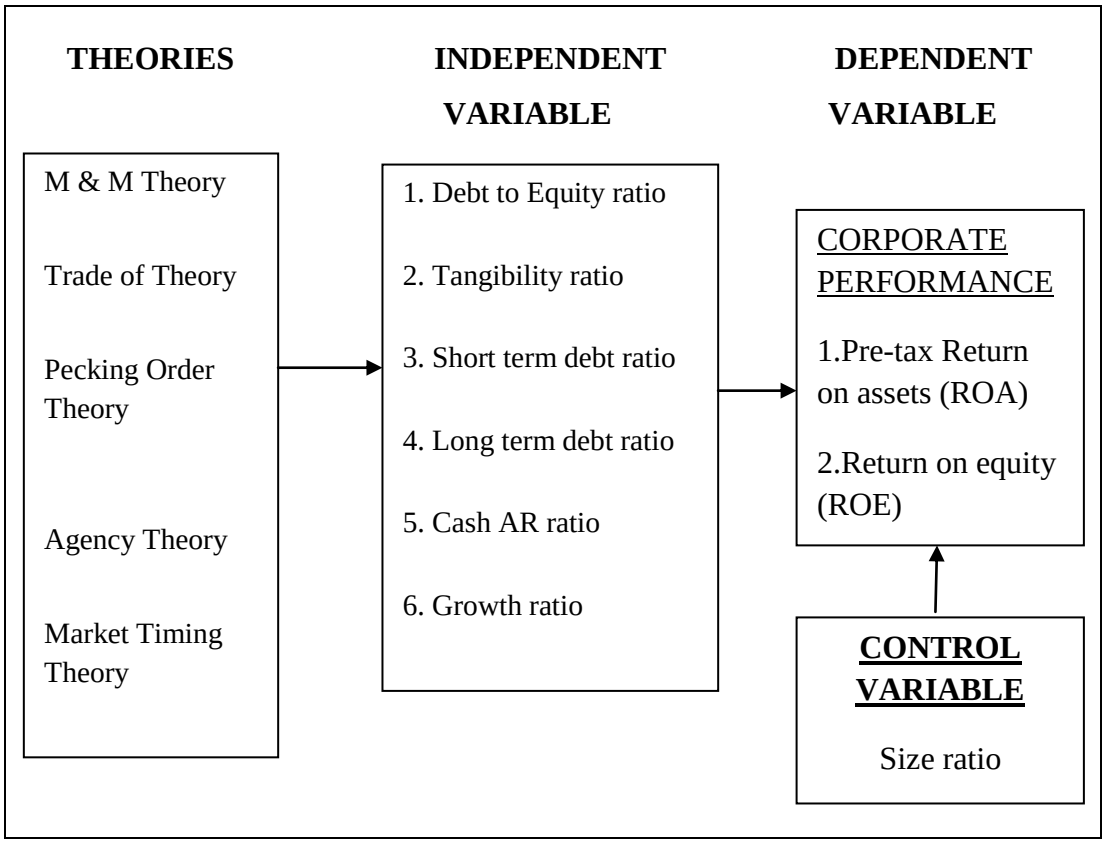


Figure 1: Illustration influence of capital structure's theory to financing decision and the impacts of capital structure on corporate performance.

3.3 VARIABLE MEASUREMENT

This section details out the measurements of variables that are employed by this study in order to achieve the research objectives. The variables are divided into three categories: which are dependent variables, independent variables and control variables.

3.3.1 Dependent Variable

There have two proxies for corporate performance that are used in this study. The first proxy is pre-tax return of assets (pre-tax ROA) ratio and secondly is return on equity (ROE) ratio. Both of these variables represent for corporate performance for this study.

3.3.1.1 Pre-tax Return on Assets (Pre-tax ROA)

Most of the previous studies (e.g. Rajan et al., 1994; Deesomsak et al., 2004; Mat Nor et al., 2011; Bundala, 2012; Fosberg, 2012; Fosberg, 2013; Hassan, Shafi, and Mohamed, 2012; Nejad Rezaie and Wasiuzzaman, 2013; Ahmad and Azhar, 2015; Kunt, Peria, and Tressel, 2015; Jaafar et al., 2017) have been used earnings before interest and tax (EBIT) over total assets to measure the firm's financial performance. However, other studies used different method to measure the firm's financial performance such as total net profit over total assets (Iqbal and Kume, 2014; Proença, Laureano, and Laureano, 2014; Kakilli Acaravci, 2015, Shahar and Shahar, 2015; Trinh and Phuong, 2016; Cheema, Mahmood, Farooq, and Yousaf, 2017) and profit before interest and tax (Inchausti, 1997; Janggu, 2004;Othman, Thani, and Ghani, 2009; Darus, Yusoff, and Mohd Azhari, 2013). Therefore, this study decides to use profit before tax and zakat over total asset or in other words, it called pre-tax return on assets (Pre-tax ROA) to measure corporate performance of the firms.

Initially, this study intends to show the significant differences affects on firm's corporate performance if the firm paying taxes or zakat or both. It is because SCC has special taxes that called 'zakat' under Shariah guidelines and the calculation different from taxes. However this special tax (zakat) is a voluntary basis system and SCC are encourages to paying zakat instead of taxes. As an example in Malaysia for those SCC that are choosing to pay zakat, then the firm will get deduction from the total tax payable amount[8]. Unfortunately, in this study Malaysia is the only country that implemented zakat system on voluntary basis. None of the sample shows the zakat amount in their financial statement. In addition, Al-Tally (2014) mentioned that Saudi Arabistan is the only country in the world that implement zakat system as a substitute of taxes system. According to Sanusi (2014) firms were willing to pay more zakat rather than corporate tax and it study based on 422 firms in Malaysia.

Other reason we used net profit before tax and zakat because this studies using the sample across the countries. Vietnam, Singapore, Indonesia, Malaysia, and

[8] https://www.eui.eu/Research/Library/ResearchGuides/Economics/Statistics/DataPortal/datastream#Databasedescription accessed date 03 January 2019

Thailand have different tax regime system and tax rates. Therefore, in order to ensure this study give reliable and trustworthy outcomes, it need to use net profit before tax and zakat.

This ratio is to measures how the effective of the firm can earn on its investment in their assets. In other word, how the firm used their assets effectively to generate the income or profit. It is favourable for the firm to have high ROA ratio because it shows the firm will more effectively in managing their assets to produce the greater income for the firms.

3.3.1.2 Return on Equity (ROE)

The second proxy in this study for dependent variables that represents for firm's corporate performance is return on equity (ROE) ratio. Based on the previous studies (see Pratomo and Ismail, 2007; Ebaid, 2009; Salim and Yadav, 2012; Amba and Almukharreq, 2013; Shahar and Shahar, 2015; Vătavu, 2015; Cheema et al., 2017; Ameen and Shahzadi, 2017) that have been used net income after tax over total equity to measure the ROE in their studies. Therefore, this study also decides to use the same measurement like the prior studies.

This ratio will be measured by the firm's profitability using net profit after interest, tax and preference dividend divided by ordinary share capital plus reserves at the end of financial year. ROE ratio is one of the main profitability ratios that concentrates on the firm's ordinary shareholders and compares the profit that has been earned and their capital. Some of the investors are using this ratio to measure the firm's ordinary shares desirability.

3.3.2 Independent Variables

There have five independent variables that will be tested in this study. First variable is debt to equity ratio and follow by tangibility ratio. Next variable is debt financing or total debt ratio. This ratio will be divided into two, which are short-term debt ratio and long-term debt ratio. Next variable is cash plus account receivables ratio and last independent variable is growth ratio.

3.3.2.1 Debt to Equity (D/E) Ratio

Under Dow Jones Global Islamic Index (DJIM) one of the quantitative screening for financial ratio is debt to equity ratio with the benchmark 33 percent. The total debt must be less than 33 percent of the total equity. Shariah compliant companies (SCC) for this study are listed under FTSE Global Equity Shariah Index series. Therefore, under FTSE index provider this ratio is not included under the screening benchmark process. However, this study intends to use this ratio to see as a general whether there have significant differences for shariah compliant companies (SCC) and non-shariah compliant companies (NSCC).

Previous study that was conducted by Rajan et al. (1994) and Nagano (2003) that used debt to equity ratio in their study. Both of them used book value of debt divided by market value of equity as a measurement for debt to equity ratio in their studies. However, this study decides to use total debt divided by total equity as a measurement for the equity ratio. It supported by other studies such as Margaritis and Psillaki (2010) and Memon et al., (2012) that also used the same measurement for equity ratio in their studies.

This ratio is to evaluate a firm's financial leverage by measuring the degree of the firm financing based on debt to equity or wholly owned funds. In case if the firm downturn, it measures the ability of the shareholder equity to cover all the debts in the firm.

3.3.2.2 Tangibility Ratio

Next independent variable in this study is tangibility ratio. This study intends to follow the previous studies (see Deesomsak et al., 2004; Cotei and Farhat, 2009; Mat Nor et al., 2011; Hassan et al., 2012; Fosberg, 2012; Fosberg, 2013; Nejad Rezaie and Wasiuzzaman, 2013; Iqbal and Kume, 2014; Proença et al., 2014; Ahmad and Azhar, 2015; Kakilli Acaravci, 2015; Kunt et al., 2015; Sanusi and Taha, 2015; Trinh and Phuong, 2016; Jaafar et al., 2017; Ramli & Haron, 2017) that were using total fixed assets or non-current assets divided by total assets to measure the tangibility ratio in their respectively studies.

This ratio is to determine the firm's collateral level. Firm with higher tangibility ratio can used the assets as collateral and they may issue more debt to take advantage of this situation. In addition, this tangibility ratio become trendier after the financial crisis period as a measurement of the bank viability since it indicate the firm's collateral level. This ratio have been chosen as one of the independent variable in this study because SCC are required to have tangible assets as a collateral in order to get the financial assistance from the bank.

3.3.2.3 Debt Financing

This study intends to use leverage ratio in order to discover the impact of debt financing to the corporate performance predominantly during financial crisis period. In this study, debt financing or leverage ratio divided into two categories which are short-term debt and long-term debt. In the previous studies by Ramakrishnan (2012), it showed that PLC in Malaysia changes to focus on long term debt especially after financial crisis period. In addition, prior studies (e.g. Cotei and Farhat, 2009; Mat Nor et al., 2011; Salim and Yadav, 2012; Proença et al., 2014; Kunt et al., 2015; Shahar & Shahar, 2015; Cheema et al., 2017) that were using these two types of debt financing in their studies and found there have different polar in term of opt for debt financing.

The primary purpose of this study is to examine the impact of capital structure to corporate performance before, during and after financial crisis period. Therefore, in order to achieve the aims of this study, it decides to use short-term debt financing and long-term debt financing respectively in order to observe the firms preferable in choosing their debt financing essentially during financial crisis period.

This study measure the short-term debt financing by total short-term debt divided by total debt while long-term debt financing measured by total long-term debt divided by total debt.

Debt financing ratio is an important financial indicator tool for the firms and it can observe the firm's sustainability. Other parties such as banker and investor will use this ratio either to lend more money or to invest into the firms.

3.3.2.4 Cash plus Account Receivables Ratio

Other independent variables that used in this study is cash plus account receivable ratio. It will be measured by total cash plus account receivables divided total assets. This ratio is important to ensure the firm have cut limit for total cash and account receivables in one time. In addition, to the best of our knowledge, this is the first study that use cash plus account receivables over total assets (CashAR) as an independent variables.

This variable is chosen for this study because during the second stage of quantitative screening for shariah compliant companies (SCC) by index provider, FTSE Shariah Global index, this variable is one of the financial benchmarks that the firm need to follow in order to be listed in Islamic indices. G.Rajan & Zingales (1994) highlighted that usually the firms going to bankruptcy because of the liquidity problem.

Previous studies showed there have many types of measurement of liquidity ratio. Such example firstly, it measured by current asset over current liabilities (Deesomsak et al., 2004; Mat Nor et al., 2011; Proença et al., 2014; Ahmad and Azhar, 2015). Secondly, Bundala (2012) used total cash and bank over total assets in his study to measure the liquidity. Thirdly, Nejad Rezaie and Wasiuzzaman (2013) used working capital as a measurement for liquidity. Nevertheless, this study decides do not follow the previous studies due to the measurement of liquidity ratio already set by index provider.

3.3.2.5 Growth Ratio

Previous studies shows there have many different types to measure firm's growth such as annual growth rate in sale (Titman and Wessels, 1988; Zeitun & Tian, 2014), market to book value (Du & Dai, 2005), and growth of total assets (Harris and Raviv, 1991; Ghosh et al., 2000; Bundala, 2012).

According to Titman & Wessel (1988) and Rajan & Zingales (1995) shows that the firm with high future growth turn out to be used less leverage in the financing decision. It is because the firm will shifted from debt financing to equity financing. In addition, the growth will influence the profitability in the firm.

This study decides to use current year sales minus previous year sales divided by previous year sales as a proxy of firm growth ratio. It is supported by prior studies (Salim and Yadav, 2012; Bundala, 2012; Proença et al., 2014; Cheema et al., 2017) that are also used the same measurement for growth ratio in their studies.

3.3.3 Control Variables

The control variable in this study is firm size. The previous studies (Frank and Goyal, 2003; Ebaid, 2009; Salim and Yadav, 2012) recommended that the firm's size will influence the corporate performance. The larger the firm, the more capability and capacity they have.

Previous studies shows there have many different types to measure firm's size such as logarithm of sales (Du and Dai, 2005; Nejad Rezaie and Wasiuzzaman, 2013; Shahar and Shahar, 2015; Ramli and Haron, 2017), the total sales (Flannery and Rangan, 2006), and In real sales (Baker and Wurgler, 2002).

This study decides to use the logarithm of total assets as a proxy of firm size. It is supported by other studies (Titman and Wessels, 1988; Rajan et al., 1994; Cotei and Farhat, 2009; Mat Nor et al., 2011; Hassan et al., 2012; Fosberg, 2013; Iqbal and Kume, 2014; Proença et al., 2014; Ahmad and Azhar, 2015; Jaafar et al., 2017) that are also used the same measurement for size ratio in their studies.

Table 4: Summary of Variables Measurement

Variables	Definition	Explanation	Notation
Independent Variables			
Pre-tax return on assets ratio	Net income before tax and zakat / Total assets	It measures how effective the firm use their assets in generate the income	Pre-tax ROA
Return on equity ratio	Net income after tax and zakat / Total equity (ordinary share capital & reserves)	It measure of financial performance that calculated by dividing net income by shareholders' equity.	ROE
Dependent Variables			
Debt to equity ratio	Total debt / Total equity	This ratio measures the ablity of the shareholders' equity to cover all the debts in the	D/E

		firm	
Tangibility ratio	Tangible Assets / Total Assets	This ratio is to determine the collateral level of the firm.	TANG
Short-term debt ratio	Short term debt / Total assets	To measure the ability of the firm to meet the short-term obligation	STD
Long-term debt ratio	Long term debt / Total assets	shows the percentage of a company's assets that are financed with loans and other financial obligations that last over a year	LTD
Cash plus account receivables ratio	Cash plus account receivables / Total assets	To indicates whether a firm's current assets will be sufficient to meet the firm's obligations when they become due	CashAR
Growth ratio	(Sales at time T - Sales at time T-1) / Sales at Time T-1	Show the percentage of growth of the firm compared to previous year	GRW
Control Variables			
Size ratio	Logarithm of Total Asset	Measure the size of firm	Size

3.4 HYPOTHESIS DEVELOPMENT

This section outlines is the development of hypothesis for Shariah compliant companies (SCC) and non-shariah compliant companies (NSCC) for five countries in Southeast Asia. According to the objectives of this study and literature review, this study can be divided into two main hypotheses.

The first main hypothesis based on T-Test analysis and it divided into three categories, which are before financial crisis, during financial crisis and after financial crisis period. The hypothesis to be tested the significant differences of SCC and NSCC among the variables in this study.

The second hypothesis is based on multiple regression analysis and it also divided into three categories which are before financial crisis, during financial crisis and after financial crisis period. The second hypothesis to be tested the impact of capital structure on corporate performance, ROA and ROE for shariah compliant companies.

Farooq and Alahkam (2016) highlighted in their study that the differences among SCC and NSCC were disappears during financial crisis period. Other studies by Amba and Almukharreq (2013) showed there have differences among Islamic bank and conventional bank throughtout the financial period. While Bakar and Ali (2014) mentioned there is not so many differences among SCC and NSCC either before, during or after financial crisis period. N. N. N. M. Hassan et al., (2012) and Shahar and Shahar (2015) indicated that there have differences among SCC and NSCC in their studies.

In an attempt to provide further evidence, this study begins with the general hypotheses that are tested to see any differences between SCC and NSCC as a general and continues in details differences based on period which are before financial crisis, during financial crisis and after financial crisis period. This leads to a formulation of the main hypotheses as follows:

General hypothesis:

H_0: There is no significant difference between SCC and NSCC

H_1: There have significant differences between SCC and NSCC

Before financial crisis:

H_{BFC}, H_0: There is no significant difference between SCC and NSCC before financial crisis.

H_{BFC}, H_1: There have significant differences between SCC and NSCC before financial crisis.

During financial crisis:

H_{DFC}, H_0: There is no significant difference between SCC and NSCC during financial crisis.

H_{DFC}, H_1: There have significant differences between SCC and NSCC during financial crisis.

After financial crisis:

H_{AFC}, H_0: There is no significant difference between SCC and NSCC after financial crisis.

H_{AFC}, H_1: There have significant differences between SCC and NSCC after financial crisis.

The hypothesis will be explaining in more detail in the below sub section. The variables that are used in this study will be tested one by one in order to see any

significant differences between SCC and NSCC before financial crisis, during financial crisis and after financial crisis period.

3.4.1 Pre-tax Return on Assets (ROA)

Pre-tax ROA are expected to have differences between SCC and NSCC based on previous studies (see N. N. N. M. Hassan et al., 2012; Bakar and Ali, 2014; Shahar and Shahar, 2015; Farooq and Alahkam, 2016; Cheema et al., 2017). However, this study tries to find whether there have significant differences through the financial period. Therefore, this study will tested one by one in order to see any significant differences in pre-tax ROA between SCC and NSCC before financial crisis, during financial crisis and after financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{0,ROA}}$: There is no significant difference in ROA between SCC and NSCC before financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{1,ROA}}$: There have significant differences in ROA between SCC and NSCC before financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{0,ROA}}$: There is no significant difference in ROA between SCC and NSCC during financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{1,ROA}}$: There have significant differences in ROA between SCC and NSCC during financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{0,ROA}}$: There is no significant difference in ROA between SCC and NSCC after financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{1,ROA}}$: There have significant differences in ROA between SCC and NSCC after financial crisis period.

3.4.2 Return on Equity (ROE)

Return on equity (ROE) is one of the common and prominent proxies for corporate performance. Previous studies (see Salim and Yadav, 2012; Umar et al., 2012; Vătavu, 2015; Trinh and Phuong, 2016) found there have significant differences among SCC and NSCC or among the period of study. However, this study tries to examine the differences between SCC and NSCC as well as among the financial period. Therefore, in an attempt to provide further evidence, this study test whether there have any significant differences in ROE between SCC and NSCC through out the financial period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{0,ROE}}$: There is no significant difference in ROE between SCC and NSCC before financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{1,ROE}}$: There have significant differences in ROE between SCC and NSCC before financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{0,ROE}}$: There is no significant difference in ROE between SCC and NSCC during financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{1,ROE}}$: There have significant differences in ROE between SCC and NSCC during financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{0,ROE}}$: There is no significant difference in ROE between SCC and NSCC after financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{1,ROE}}$: There have significant differences in ROE between SCC and NSCC after financial crisis period.

3.4.3 Debt / Equity (D/E)Ratio

Debt to equity (D/E) ratio has been expected to have significant differences among the SCC and NSCC along the financial period in this study. It is because based on previous studies, SCC using more equity financing than debt financing (Kamal, Eddy Yusof, and Kashoogie, 2010; Shahar and Shahar, 2015). Some other Islamic index such as Dow Jones Islamic Index includes the debt to equity ratio as their financial benchmark. Due to the SCC bound with financial benchmarks that are set by index provider, it predicts that SCC will have lower debt to equity ratio compared to NSCC. In an attempt to provide further evidence, this study tested whether there have significant differences in debt to equity (D/E) ratio between the SCC and NSCC before, during and after financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{0,D/E}}$: There is no difference in Debt/Equity ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{1,D/E}}$: There have differences in Debt/Equity ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{0,D/E}}$: There is no difference in Debt/Equity ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{1,D/E}}$: There have differences in Debt/Equity ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{0,D/E}}$: There is no difference in Debt/Equity ratio between SCC and NSCC after financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{1,D/E}}$: There have differences in Debt/Equity ratio between SCC and NSCC after financial crisis period.

3.4.4 Tangibility (TANG) Ratio

Tangibility ratio is become more attention after financial crisis period. It is because high tangibility ratio for the firm, it likely the firm are able to get more debt and can avoid the bankruptcy (Titman and Wessels, 1988; Baharuddin et al., 2011; N. Ahmad and Azhar, 2015). In addition, during financial crisis tangible assets play important roles to save the firms from bankruptcy. Besides, SCC are required to use tangible assets in order to take debt financing from the financial institutions. In an attempt to provide further evidence, this study tests whether there have differences in tangibility ratio between SCC and NSCC before, during and after financial crisis period.

$\mathbf{H_{BFC}, H_{0,TANG}}$: There is no difference in TANG ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{BFC}, H_{1,TANG}}$: There have differences in TANG ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{DFC}, H_{0,TANG}}$: There is no difference in TANG ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{DFC}, H_{1,TANG}}$: There have differences in TANG ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{AFC}, H_{0,TANG}}$: There is no difference in TANG ratio between SCC and NSCC after financial crisis period.

$\mathbf{H_{AFC}, H_{1,TANG}}$: There have differences in TANG ratio between SCC and NSCC after financial crisis period.

3.4.5 Short-Term Debt (STD) Ratio

Previous studies show that there have differences in term of usage of debt financing. Some firms using short-term debt financing more than long-term debt financing or vice versa (see Aggarwal & Yousef, 2000; Cheema et al., 2017; Fauzi, 2018; Fosberg, 2012; N. N. N. M. Hassan et al., 2012b; Proença et al., 2014; Rajan et al., 1994; Sahudin et al., 2019; Salim & Yadav, 2012). This study will focus and examine the differences before, during and after financial crisis period. In addition, it predicted that SCC will using less debt financing either short-term debt or long-term debt than NSCC due to the financial benchmark set for SCC. In an attempt to provide

further evidence, this study tests whether there have significant differences in STD ratio between the SCC and NSCC before, during and after financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{0,STD}}$: There is no significant difference in STD ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{1,STD}}$: There have significant differences in STD ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{0,STD}}$: There is no significant difference in STD ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{1,STD}}$: There have significant differences in STD ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{0,STD}}$: There is no significant difference in STD ratio between SCC and NSCC after financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{1,STD}}$: There have significant differences in STD ratio between SCC and NSCC after financial crisis period.

3.4.6 Long-Term Debt (LTD) Ratio

According to Umar et al., (2012), Shahar and Shahar (2015), Skoogh and Sward (2015), and Yazdanfar and Öhman (2015) most of the firm prefer to used long-term debt financing rather than short-term debt financing. LTD financing is using to finance the major project and assets. This study predict LTD ratio for SCC will be lower and difference from NSCC because of financial benchmark that are set by Islamic index provider for SCC. In an attempt to provide further evidence, this study tests whether there have significant differences in LTD ratio between the SCC and NSCC before, during and after financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{0,LTD}}$: There is no significant difference in LTD ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{1,LTD}}$: There have significant differences in LTD ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{0,LTD}}$: There is no significant difference in LTD ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{1,LTD}}$: There have significant differences in LTD ratiobetween SCC and NSCC during financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{0,LTD}}$: There is no significant difference in LTD ratio between SCC and NSCC after financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{1,LTD}}$: There have significant differences in LTD ratio between SCC and NSCC after financial crisis period.

3.4.7 CashAR Ratio

Liquity ratio is important in order to determine the ability of the firm to meet the financial obligation. This study is using cash plus account receivable as a liquidity ratio. Under Shariah screening, SCC must have cash and account receivables less than 50 percent of the total assets. This financial benchmark to ensure SCC can avoid from bankruptcy particularly during financial crisis period. In an attempt to provide further evidence, this study tests whether there have differences in CashAR ratio between the SCC and NSCC before, during and after financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{0,\ CASHAR}}$: There is no difference in CashAR ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{BFC}}$, $\mathbf{H_{1,CASHAR}}$: There have differences in CashAR ratio between SCC and NSCC before financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{0,\ CASHAR}}$: There is no difference in CashAR ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{1,CASHAR}}$: There have differences in CashAR ratio between SCC and NSCC during financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{0,\ CASHAR}}$: There is no difference in CashAR ratio between SCC and NSCC after financial crisis period.

$\mathbf{H_{AFC}}$, $\mathbf{H_{1,CASHAR}}$: There have differences in CashAR ratio between SCC and NSCC after financial crisis period.

3.4.8 Growth Ratio

Every firm or industry are expecting to growth every year. Growth of the firm is a symbol the firm in a good shape during the year. However, during financial crisis most of the firm usually have declining in the growth rate. Some of the firm can recover after financial crisis period and some of the firm going to bankruptcy due to effect of financial distress during financial crisis.

Shariah compliant companies (SCC) become more attentiveness after financial crisis due to SCC more resilent during financial crisis period. In an attempt to provide further evidence, this study tests whether there have differences in growth ratio between the SCC and NSCC before, during and after financial crisis period.

H_{BFC}, $H_{0,GROWTH}$: There is no difference in growth ratio between SCC and NSCC before financial crisis period.

H_{BFC}, $H_{1,GROWTH}$: There have differences in growth ratio between SCC and NSCC before financial crisis period.

H_{DFC}, $H_{0,GROWTH}$: There is no difference in growth ratio between SCC and NSCC during financial crisis period.

H_{DFC}, $H_{1,GROWTH}$: There have differences in growth ratio between SCC and NSCC during financial crisis period.

H_{AFC}, $H_{0,GROWTH}$: There is no difference in growth ratio between SCC and NSCC after financial crisis period.

H_{AFC}, $H_{1,GROWTH}$: There have differences in growth ratio between SCC and NSCC after financial crisis period.

The next hypothesis will discuss the impact of capital structure on corporate performance through out the financial period based on multiple regression analysis.

3.4.9 Before Financial Crisis (BFC)

This study tries to examine the impact of capital structure on corporate performance, ROA and ROE before financial crisis period for shariah compliant companies (SCC). Shambor (2017) found negative impact of capital structure on ROE before financial crisis period and while Bakar and Ali (2014) found there have different impact on corporate performance for SCC and NSCC before financial crisis period. In an attempt to provide further evidence, this study conducted test whether the there have any statistically significant impact of capital structure on corporate performance before financial crisis period.

H_{BFC}, $H_{0, ROA}$: There is no significant impact on corporate performance, ROA before financial crisis period for SCC.

H_{BFC}, $H_{1, ROA}$: There is significant impact on corporate performance, ROA before financial crisis period for SCC.

$\mathbf{H_{BFC}}$, $\mathbf{H_{0, ROE}}$: There is no significant impact on corporate performance, ROE before financial crisis period for SCC.

$\mathbf{H_{BFC}}$, $\mathbf{H_{1, ROE}}$: There is significant impact on corporate performance, ROE before financial crisis period for SCC.

3.4.10 During Financial Crisis (DFC)

According to Amba and Almukharreq (2013) it found that there have negative impact on corporate performance, while Demirhan and Anwar (2014) found positive impact on corporate performance and firm issued more equity financing during financial crisis period. However Trinh and Phuong (2016) found there is no effect of capital structure on corporate performamce during financial crisis period.

This study tries to examine the impact of capital structure on corporate performance, ROA and ROE during financial crisis period for shariah compliant companies (SCC). In an attempt to provide further evidence, this study conducted test whether the there have any statistically significant impact of capital structure on corporate performance during financial crisis period.

$\mathbf{H_{DFC}}$, $\mathbf{H_{0, ROA}}$: There is no significant impact on ROA during financial crisis period for SCC

$\mathbf{H_{DFC}}$, $\mathbf{H_{1, ROA}}$: There is significant impact on ROA during financial crisis period for SCC

$\mathbf{H_{DFC}}$, $\mathbf{H_{0, ROE}}$: There is no significant impact on ROE during financial crisis period for SCC

$\mathbf{H_{DFC}}$, $\mathbf{H_{1, ROE}}$: There is significant impact on ROE during financial crisis period for SCC

3.4.11 After Financial Crisis (AFC)

Lastly, this study tries to examine the impact of capital structure on corporate performance, ROA and ROE after financial crisis period for shariah compliant companies (SCC). Trinh and Phuong (2016) found no impact of capital structure on corporate performance after financial crisis period while Schulz (2017) and Shambor (2017) found there have negative impact on corporate performance for after financial crisis period.

In an attempt to provide further evidence, this study conducted test whether the there have any statistically significant impact of capital structure on corporate performance after financial crisis period.

$\mathbf{H_{AFC}, H_{0, ROA}}$: There is no significant impact on ROA after financial crisis period for SCC

$\mathbf{H_{AFC}, H_{1, ROA}}$: There is significant impact on ROA after financial crisis period for SCC

$\mathbf{H_{AFC}, H_{0, ROE}}$: There is no significant impact on ROE after financial crisis period for SCC

$\mathbf{H_{AFC}, H_{1, ROE}}$: There is significant impact on ROE after financial crisis period for SCC

The summary of the hypothesis are explain in the figure 2 based on T-Test before financial crisis period, figure 3 based on T-Test during financial crisis period, figure 4 based on T-Test after financial crisis period. Figure 5 is summary of hypothesis based on multiple regression analysis on impact of capital structure on corporate performance.

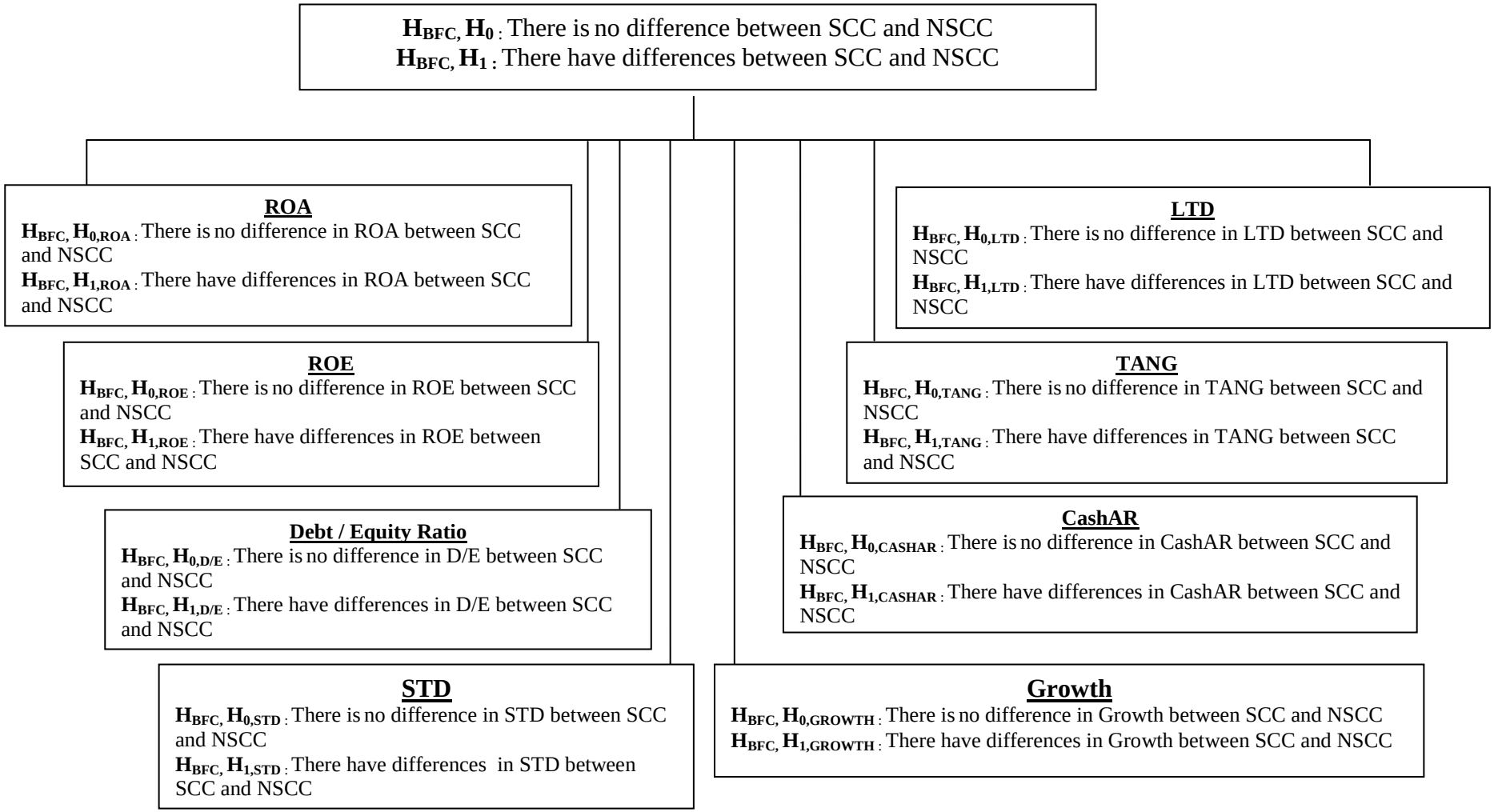


Figure 2: Hypothesis on Differences of SCC and NSCC Before Financial Crisis (AFC) based on T-Test

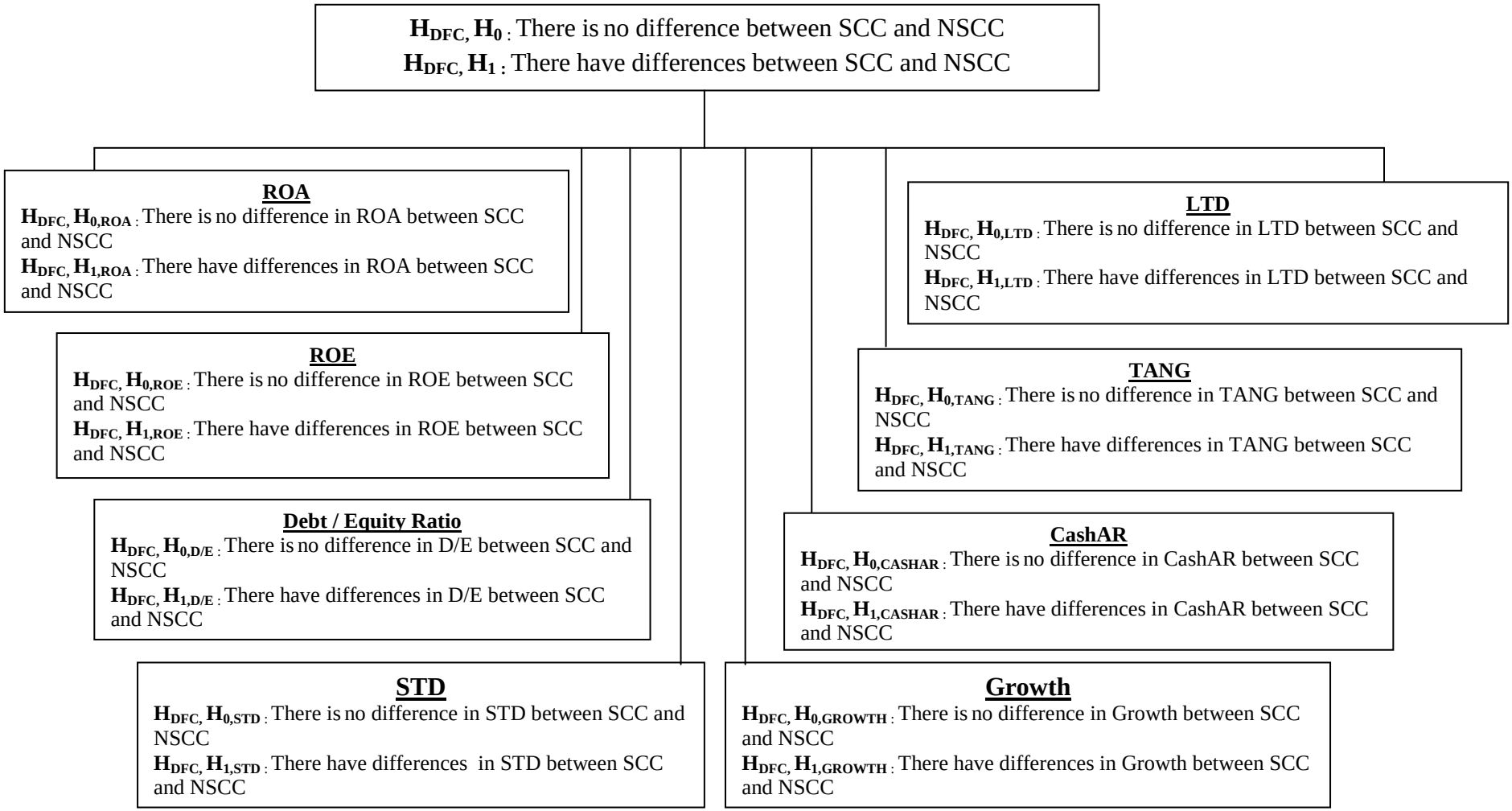


Figure 3: Hypothesis on Differences of SCC And NSCC During Financial Crisis (DFC) based on T-Test

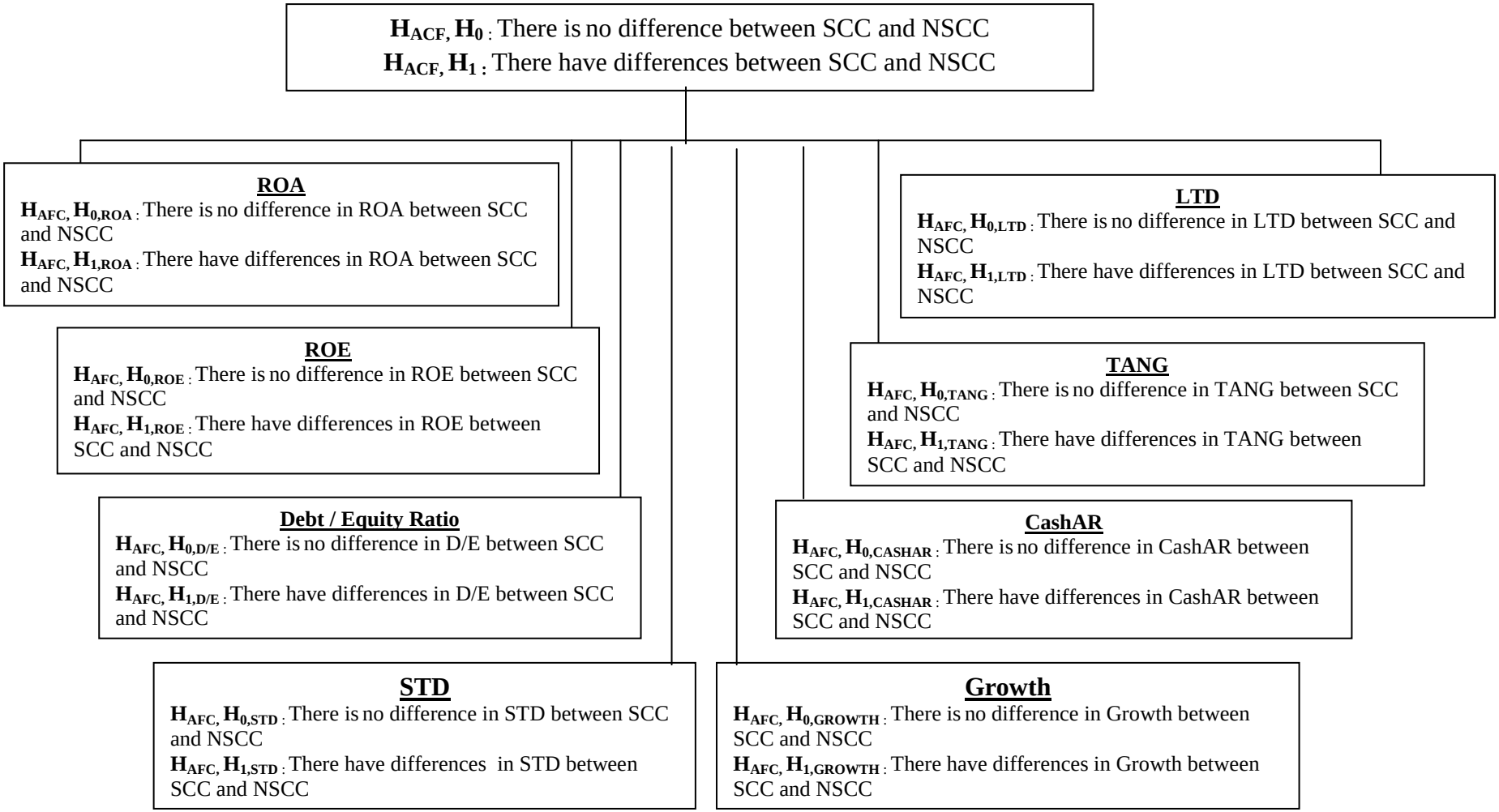


Figure 4: Hypothesis on Differences of SCC and NSCC After Financial Crisis (AFC) based on T-Test

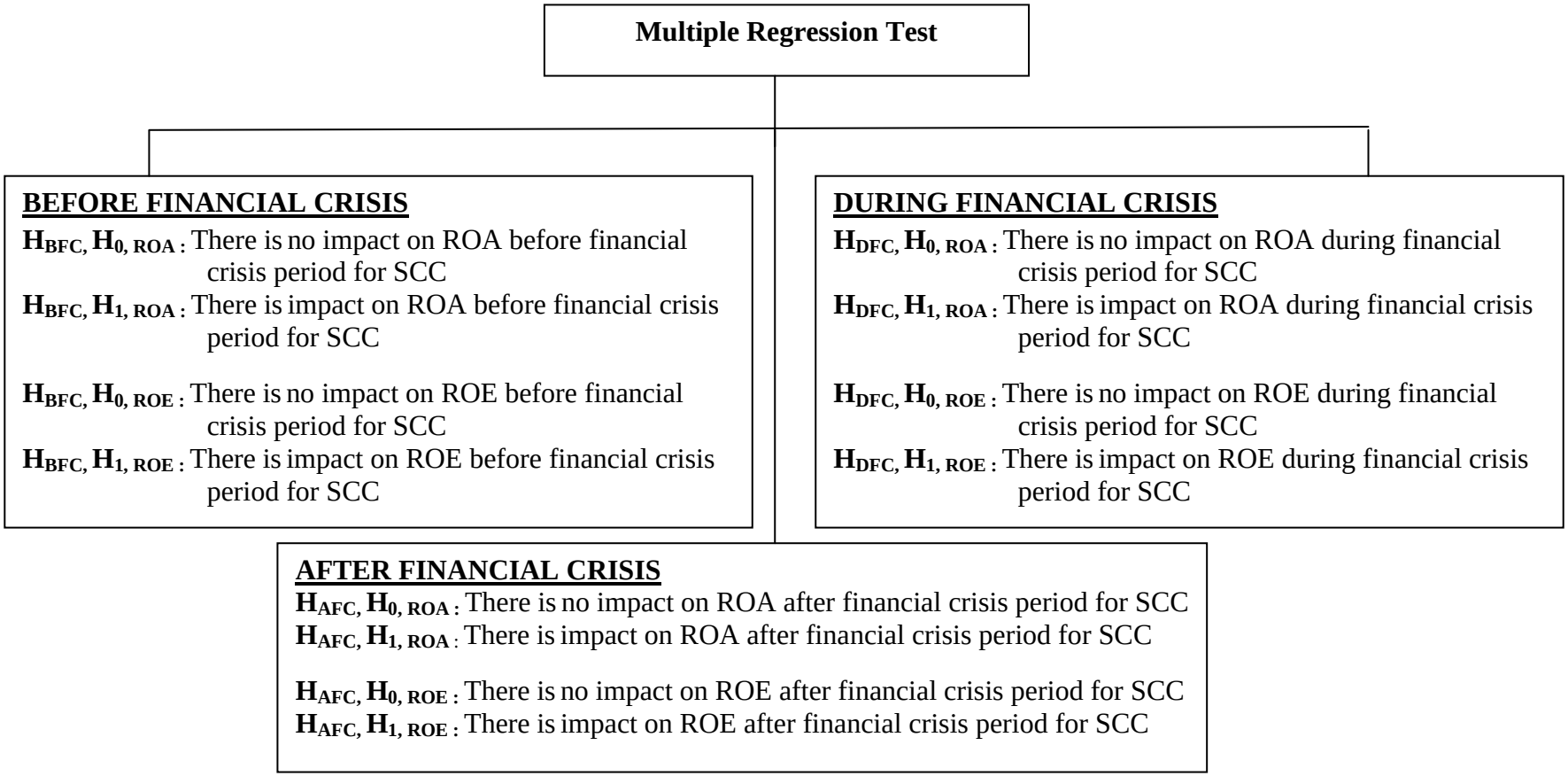


Figure 5: Hypothesis on Impact of Capital Structure on Corporate Performance for SCC

3.5 DATA ANALYSIS

This study used a secondary data to collect the necessary information. The samples for this study consist of public listed companies (PLCs) that gathered from five countries which are Malaysia, Indonesia, Singapore, Thailand, and Vietnam. The data will be collected through DataStream that are published by Thomson Reuters Eikon.

DataStream is define as global financial and macroeconomic data platform covering equities, stock market indices, currencies, company fundamentals, fixed income securities and key economic indicators for 175 countries and 60 markets[9]. The data gathered for this study was analyzed using Python Pandas software.

By using the DataStream, Thomson Reuters Eikon the status of the company is easily to identify whether Shariah compliant companies (SCC) or non-shariah compliant companies (NSCC). It is because this software has segregated the list of the companies that are listed under Islamic indexes.

3.5.1 Statistical Approach and Analysis

Usually in any study, different types of descriptive analysis and inferential statistic were used to analyse the data such as t-test and ANOVA, and MANOVA with the help of Statistical Package for Social Science (SPSS). However this study will use different approach and method of analysis. We believes this is the first study in finance specific in capital structure area that will do the analysis with the assistance from Python Pandas programming software.

Pandas are a software library written for the Python programming language for data manipulation and analysis. It offers data structures and operations for manipulating numerical tables and time series. In other words, Python Pandas programming software is based on the coding system. Therefore, the first step to do the analysis by creating our own coding system based on the data and analysis that are require for this study.

[9]https://www.eui.eu/Research/Library/ResearchGuides/Economics/Statistics/DataPortal/datastream#Databasedescription accessed date 03 January 2019

Firstly, the descriptive statistical analysis will be tested for all the variables. This analysis will show the value of mean, minimum, maximum and standard deviation for all the variables as a general. By using this analysis, it will be illustrate the comparison performance between Shariah compliant and non-shariah compliant companies. Afterwards, the further descriptive analysis will be performing based on the three periods which are before financial crisis, during financial crisis and after financial crisis. This analysis will give the picture of the performance of each period and test the hypothesis as well.

Prior to the statistical descriptive analysis this study need to identify the outliers in the sample by generate the coding system into the Pandas. Grubbs (1969) stated that there is no rule in removing outliers. Therefore, by using the coding in python pandas software it will directly recognize the outliers among the sample. This study shows that some of the sample have unusual levels of their variables compared with others sample for instance some firm's ratio have 7 to 10 times higher than other firm. Therefore, this sample or outliers will be seriously misrepresent and influence to the results of the study. All these outliers have been removed from this study in order to avoid distorting result outcomes.

Next test will be run is multicollinearity analysis among the independent variables. This test to determine whether there is multicollinearity problem by using variance inflation factor (VIF) and tolerance statistic results. If there have multicollinearity problem among the variables, that variables need to eradicate from the study.

Then the correlation analysis will be tested to all the variables. This test is conduct to describe the strength and direction of the relationship among the variables. It either positive, negative or no relationship among the variables and it also show the level of significant of correlation. Gujarati (1995) sets the rule of thumb for detecting multicollinearity problems when bivariate correlation is greater than 0.8. Therefore, the correlation analysis also can detect if there have multicollinearity problem among the variables.

Lastly, regression analysis will be performed to test the hypothesis. This test is important to see the impact or relationship of financial performance and capital structure particularly based on financial crisis periods. In order to run this analysis, the regression equations have been developed as follows:

1. $Y\ (\text{Pretax ROA}) = \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 SIZE_{it} + \beta_8 (X) + \varepsilon$

2. $Y\ (\text{ROE}) = \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 SIZE_{it} + \beta_8 (X) + \varepsilon$

Whereby:

Pre-tax ROA	= Return on asset before tax ratio
ROE	= Return on equity ratio
D/E	= Debt to equity ratio
TANG	= Tangibility ratio
STD	= Short term debt ratio
LTD	= Long term debt ratio
CASHAR	= Cash plus account receivable ratio
GRW	= Growth ratio
SIZE	= Size ratio
ε	= Error term
X	= dummy variable
	0: Non-Shariah Compliant Companies (NSCC)
	1: Shariah Compliant Companies (SCC)

CHAPTER 4

RESULTS AND DISCUSSION

This chapter discussing the empirical results of this study based on the 481 public listed companies from five countries, which are Malaysia, Indonesia, Thailand, Singapore and Vietnam. All this sample taking from industrial sector including 197 Shariah compliant companies (SCC) and 284 Non-Shariah compliant companies (NSCC). Thus, all significant results and details explanations will be discussed throughout this chapter.

This chapter begins with begin with section 4.1 that discusses the independent T-Test and it followed by section 4.2 explain about descriptive analysis for the dependent variables, independent variables and control variable based on status of the company that are used in this study. It then explains in details the impact of capital structure based on financial period, which are before financial crisis (BFC), during financial crisis (DFC) and after financial crisis (AFC) for SCC and NSCC respectively. Then, in section 4.3 it describe the correlation analysis of the study. This section will present the result of the relationship between each of the variables based on financial period for SCC and NSCC. It followed by the section 4.4 that explains about multicollinearity test. This test to ensure no multicollinearity problem before tested for multiple regression analysis. Then, it followed by 4.5, that explains the impact of capital structure on corporatal performance particularly during financial crisis and the test based on multiple regression analysis. In addition, this section will give details the interpretation and discussion on the data analysis and the implications of the study.

4.1 INDEPENDENT T-TEST ANALYSIS

Table 5 shows the analysis results of the Independent T-Test and general descriptive analysis for Shariah Compliant Companies (SCC) and Non-Shariah Compliant Companies (NSCC). This study conducted T-test to examine whether

there have significant differences among SCC and NSCC. The differences in terms of pre-tax return of assets (Pre-tax ROA) ratio, return of equity (ROE) ratio, debt to equity ratio (D/E) ratio, tangibility ratio (TANG) ratio, short-term debt ratio (STD) ratio, long-term debt ratio (LTD) ratio, cash plus account receivables (CashAR) ratio, growth ratio (GRW) ratio and size ratio (SIZE) ratio.

The null hypotheses predicted that there is no significant difference between SCC and NSCC. However, this null hypothesis is rejected since the result that are shows in table 5 proved there have significant differences among the variables for SCC and NSCC.

Based on table 5, the mean values for the first corporate performance proxy is pre-tax ROA are 5.81 percent for SCC while 5.35 percent for NSCC. The t-test is 24.77, $p < 0.01$ which is indicated that there have significant difference in mean value of pre-tax ROA. Second corporate performance proxy is ROE with the mean value is 7.92 percent for SCC and 7.05 percent for NSCC. T-test showed 14.45 with $p < 0.01$. It explains that there has significant difference in the value of ROE.

Next analysis are independent variables. Firstly, the mean values for debt to equity (D/E) ratio are 0.57 times for SCC and 1.05 times for NSCC. This indicate that NSCC has higher D/E ratio compared to SCC because t-test is 10.70, $p<0.01$ shows there has existence of significant difference in term of D/E ratio. Secondly, tangibility (TANG) ratio mean values are 59 percent and 52 percent for SCC and NSCC respectively. The t-test is 57.98 with $p<0.01$ that shows there have significant difference in TANG values. Thirdly is short-term debt (STD) with the mean value is 12.13 percent for SCC and 15.94 percent for NSCC. The t-test is 45.69, $p<0.01$ which shows the existence of significant difference in term of STD. Next is the mean value of long-term debt (LTD) is 8.58 percent for SCC and 10.31 percent for NSCC. The t-test value is 33.90, $p<0.01$ that explained there have significant difference in LTD's value. The second last independent variable is cash plus account receivables (CashAR) with the mean values are 26.96 percent and 30.84 percent for SCC and NSCC respectively. The t-test value is 100.27, $p < 0.01$ that shows there have significant difference for CashAR. The last independent variable is growth (GRW) ratio with the mean value is 17.87 percent for SCC and 18.11 percent for NSCC. The t-test value is 20.15, $p<0.01$ that explained there have significant difference in growth's value.

Lastly, the control variable is size ratio. The mean values of size ratio are 9.80 percent and 10.05 percent for SCC and NSCC respectively. The t-test is 223.18, $p<0.01$ shows that there have significant difference in term of size's value. Overall, these results of independent t-test shows all the variables have significant difference between SCC and NSCC. Some of the existence of the significant differences among the variables might be due to the firm's characteristic itself such as SCC operation must be comply with Shariah guidelines and the financial ratio must follow the benchmarks that are set by the index provider.

Table 5: Independent T-Test and General Descriptive Analysis for SCC and NSCC

	MEAN			MINIMUM		MAXIMUM		STD.DEVIATION	
	SCC	**NSCC**	**T-TEST**	**SCC**	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Pre-tax ROA	5.81	5.35	24.77**	-225.92	-82.7	91.5	139.22	16.10	11.58
ROE	7.92	7.05	14.45**	-366	-393.7	324.6	233.12	28.27	32.95
D/E	0.57	1.05	10.70**	-7.29	-87.44	45.24	179.78	1.60	6.14
TANG	0.59	0.52	57.98**	0.001	0	21.50	10.23	21.41	0.47
STD	12.13	15.94	45.69**	0	0	312.81	202.45	12.60	17.33
LTD	8.58	10.31	33.90**	0	0	198.02	483.29	0.69	19.74
CashAR	26.96	30.84	100.27**	-2.04	-62.94	169.79	99.9	16.26	18.53
GRW	17.87	18.11	20.15**	-100	-212.15	603.81	569.33	54.41	54.32
Size	9.80	10.05	223.18**	0.18	2.19	16.54	16.17	3.08	2.42

4.2 DESCRIPTIVE ANALYSIS

Descriptive analysis is conducted, in order to generate information about the data collected. Generally, the information will be produced from the analysis are mean, minimum, maximum, and standard deviation values of all the variables comprises dependent, independent and control variables. The outcomes of this analysis are important to understand the data allocation.

It is supported by Coakes, Steed, and Ong (2008) that are stated the descriptive analyses were used to explore, summaries and describe the data collected. In addition, this analysis also used to discover any missing data to ensure the validity of the data collected. In this study, the details of the descriptive analysis and results will explained in the below subsection.

Table 5 shows the summary descriptive analysis for all variables that are used for this study. Firstly, for this section we will explain the general descriptive analysis for SCC and NSCC. This study has three categories of variables. Firstly, dependent variables which are comprises of return on assets before tax and zakat (Pre-tax ROA) ratio and return of equity (ROE) ratio that are used as proxy of corporate performance in this study. Secondly, independent variables contain of debt to equity ratio (D/E) ratio, tangibility (TANG) ratio, short-term debt ratio (STD) ratio, long-term debt ratio (LTD) ratio, cash plus account receivables (CashAR) ratio and growth (GRW) ratio. The last category is control variable, which is size (SIZE) ratio.

Firstly, we discussed the result of dependent variables in this study. The first proxy for corporate performance indicator is pre-tax ROA ratio. It is measured by net income before tax and zakat divided by total assets. The results obtained from the descriptive analysis that are presented in Table 5 shows that Shariah compliant companies (SCC) have higher corporate performance for pre-tax ROA compared to Non-Shariah compliant companies (NSCC). It is based on the mean value of SCC's pre-tax ROA is 5.81 percent and NSCC is 5.35 percent. The value of pre-tax ROA for SCC varied in range from minimum value is -225.92 percent to maximum value is 91.5 percent. Whereby for NSCC, the minimum value is -82.7 percent and the maximum value is 139.22 percent. This result supported by Hassan, Shafi, and Mohamed (2012) and Cheema et al. (2017) that also found mean value of ROA for SCC have higher performance than NSCC. However this result contradict with

Shahar and Shahar (2015) that found the mean value of ROA for NSCC was higher than SCC in their study.

Another proxy of corporate performance indicator in this study is ROE, which is measured by net income after tax and zakat divided by total equity. The overall mean value of ROE for SCC is 7.92 percent. The mean value of ROE for SCC varies in range from minimum loss -366 percent to maximum profit 324.6 percent. On the other hand, the overall mean value of ROE for NSCC is 7.05 percent. The minimum value for of NSCC's ROE is -393.7 percent and maximum value is 233.12 percent

Based on the result above, it shows there have very huge different between minimum and maximum corporate performance mean value for both categories of companies based on Pre-tax ROA and ROE. There have a few reasons that are can identified from this study. Firstly, a large number of companies had losses during and after financial crisis period and this issue will be discuss in detail in the next sub-section by using plot chart. Secondly, some of the companies have negative value for their equity regardless the status of company either SCC or NSCC. In addition, it more surprising that these companies can still operation rigidly until nowadys even better compared to the other positive equity companies. This situation is supported by some of the cases such as Revlon[10] had negative equity for over a decade however the company share price keep increasing. It supported by Lam (2019) that are stated Revlon company had very high leverage will total debt was $2.84 billion and total shareholder equity was negative at $770.4 million in 2017.

It then followed by second category which is independent variables. First independent variable is debt to equity ratio (D/E). It measured that total debt divided by total equity. The mean value of debt to equity ratio for SCC is 0.57 times and NSCC is 1.05 times. Generally, it means that SCC used 57 percent and NSCC used 104.9 percent of their debt financing (i.e: loan, sukuk) to finance the project respectively. The value of D/E ratio for SCC varied in range from minimum value is -7.29 times to maximum value is 45.24 times. Whereby for NSCC, the minimum value is -87.44 percent and the maximum value is 179.78 times. Based on trade-off theory, the firms will have high possibility going to bankruptcy when they using

[10] https://investors.revlon.com/,
https://www.creditriskmonitor.com/blog/highly-leveraged-revlon-inc-quickly-losing-luster

more debt financing. Even though the firm will get more tax benefit due to the payment of interest on debt however there have high financial distress to the firm (Myers, 2001).

Second independent variable is tangibility (TANG) ratio. This variable is measuring by total tangible assets divided by total assets. From the Table 5, it shows the value of TANG ratio for SCC varied in range from minimum value is 0.1 percent to maximum value is 2150 percent. Whereby for NSCC, the minimum value is 0 percent and the maximum value is 1023 percent. There have very huge differences for SCC and NSCC in term of maximum value of TANG ratio. The mean value of TANG ratio for SCC is 59 percent and for NSCC is 52 percent. There have 7 percent different in mean value between these two companies due to the different strategy and policy for SCC and NSCC. Such as one of the financial screenings for SCC is total debt must not more than 33.33 percent of total assets and SCC are required to use tangibility assets as collateral when they have intention to issuing more debt. Due to this reason, debt ratio of the SCC cannot be higher than tangibility ratio. This results match those observed in earlier studies by Hassan et al., (2012) and Ramli and Haron, (2017) that also found SCC tangibility ratio higher than NSCC.

Third independent variable is debt financing or leverage ratio. In this study, debt financing ratio are separated into two categories which are short term debt (STD) ratio and long term debt (LTD) ratio. STD ratio is measured by total short-term debt divided by total assets and LTD ratio is measured by long-term debt divided by total assets. The value of STD ratio for SCC varied in range from minimum value is 0 percent to maximum value is 312.81 percent. Whereby for NSCC, the minimum value is 0 percent and the maximum value is 202.45 percent. The mean value of STD ratio for SCC is 12.13 percent and for NSCC is 15.94 percent.

While the mean value of LTD ratio for SCC is 8.58 percent and 10.31 percent for NSCC respectively. The value of LTD ratio for SCC varied in range from minimum value is 0 percent to maximum value is 198.02 percent. Whereby for NSCC, the minimum value is 0 percent and the maximum value is 483.29 percent. However the findings of the current study do not fully supported by previous studies by Shahar and Shahar, (2015) and Cheema et al., (2017) that found SCC have lower STD ratio compared to NSCC while for LTD ratio, NSCC have lower than SCC. In

addition, Hassan et al., (2012) found total debt financing ratio for NSCC slightly lower than SCC. This result realised that the different outcomes of this study due to the impact of different sector, countries and year of samples compared to the previous studies.

As mention is previous chapter, the debt financing for SCC have to be restricted to 33.33 percent of total assets. Therefore, for this study the mean value of total debt financing is 20.71 percent that is less than the restriction for SCC companies. As can be seen from the table 5, the total mean value of debt financing for SCC is lower than NSCC by 7 percent. It means that SCC has better leverage compared to NSCC. The higher debt financing ratio means the firm had more risky to invest in due to the more leverage. The creditor also concerned about the collateral and the ability of company to pay back the loan.

The next independent variables is cash plus account receivable (CashAR) ratio. The mean value of CashAR ratio is 26.96 percent for SCC and 30.84 percent for NSCC respectively. The value of CashAR for SCC varied in range from minimum value is -2.04 percent to maximum value is 169.79 percent. However, for NSCC the minimum value is -62.94 percent and the maximum value is 99.9 percent. There have very enormous different between minimum and maximum value for both companies. Based on the financial screening for SCC, cash and account receivable must be less than 50 percent of total assets. However, some study stated that the performance of firm with high account receivable is better than company that have low account receivable value. It is because high cash and account receivable is one of the strong mechanisms to maintain long-term relationship with client and fund for large capital expenditure. This opinion was contradicted with principles of SCC, which argue it should have limit for cash and account receivables ratio in order to reduce the risk of financial distress and low risk of non-payment by the clients. This argument supported by Farooq and Alahkam (2016) and added this is essential particularly during financial crisis period.

The last independent variable is growth (GRW) ratio. This ratio is measure by current year sales minus last year sales and the different sales divided by this year sales. The growth mean value for SCC is 17.87 percent and NSCC is 18.11 percent respectively. Nevertheless, there have huge gap between minimum and maximum value of growth for both companies. SCC's growth value in the range of minimum -

100 percent to maximum of 603.81 percent. However NSCC's growth value is minimum -212.15 percent and maximum 569.33 percent. As a general, the mean value of NSCC's growth ratio is slightly higher than SCC. This results supported by Farooq and Alahkam (2016) that study on MENA region.

The last categories is control variable. In this study, the control variable that used is size (SIZE) ratio. The mean value of SCC is 9.80 percent and NSCC is 10.05 percent. The minimum value of SCC's size ratio is 0.18 percent and maximum value is 16.54 percent. Whereby, the minimum value for NSCC is 2.19 percent and maximum value is 16.17 percent. NSCC have higher size mean value ratio by 0.2 percent from SCC. Hassan et al. (2012) and Farooq and Alahkam (2016) supported this results.

Table 6: Descriptive Analysis for Shariah Compliant and Non-Shariah Compliant Companies Based on Financial Period

	Before Financial Crisis (BFC)			During Financial Crisis (DFC)			After Financial Crisis (AFC)		
	SCC	**NSCC**	**T-Test**	**SCC**	**NSCC**	**T-Test**	**SCC**	**NSCC**	**T-Test**
Pre-tax ROA	6.22	6.94	sig	5.40	4.53	sig	5.67	4.30	sig
ROE	9.67	12.52	sig	7.50	5.46	sig	6.45	2.66	sig
Debt/Equity	0.74	1.07	sig	0.50	1.00	sig	0.44	1.06	sig
TANG	0.58	0.52	sig	0.58	0.52	sig	0.61	0.51	sig
STD	10.25	15.77	sig	12.57	15.97	sig	13.71	16.08	sig
LTD	8.10	10.83	sig	8.66	9.43	sig	9.01	10.38	sig
CashAR	27.77	32.50	sig	26.34	29.21	sig	26.56	30.26	sig
Growth	25.97	27.53	sig	9.21	10.71	sig	15.54	13.64	sig
Size	9.59	9.76	sig	9.85	10.10	sig	9.97	10.31	sig

4.2.1 Mean Values for Each Variables Based on Financial Period and Status of the Company

This subsection illustrates the details of mean value for each variable based on the financial period and status of the company. The financial periods are dividing into three classes, which are before financial crisis (BFC) from year 2005 until year 2007, during financial crisis (DFC) from year 2008 until year 2009 and after financial crisis (AFC) from year 2010 until year 2012.

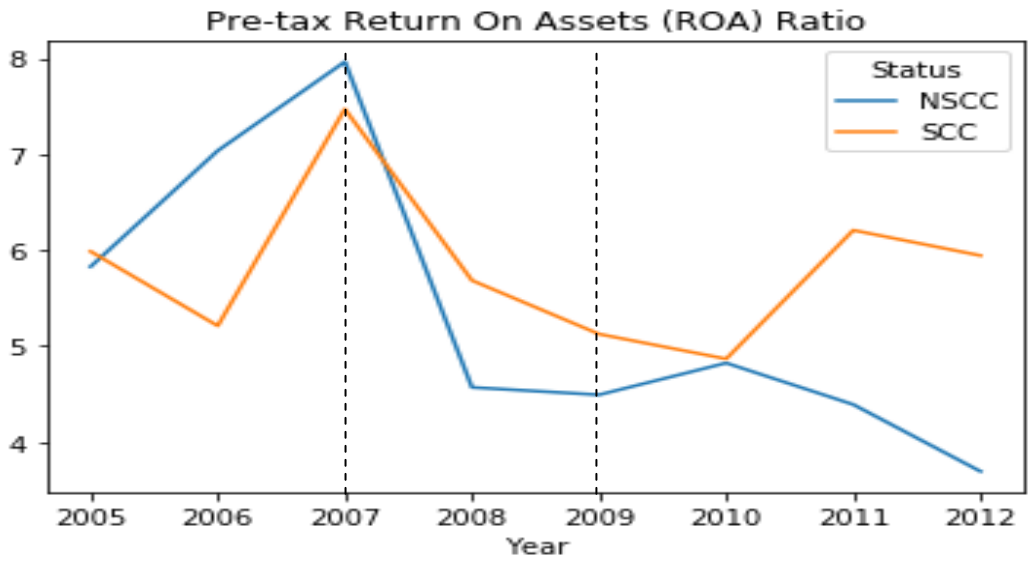
According to table 6, generally before financial crisis (BFC) period Shariah compliant company (SCC) show better performance for debt to equity ratio (D/E), short-term debt ratio (STD), long-term debt ratio (LTD), tangibility ratio (TANG) and cash plus account receivables ratio (CashAR). However, for pre-tax return on assets ratio (ROA), return on equity ratio (ROE), growth ratio and size ratio, Non-Shariah compliant company (NSCC) have better performance compared to SCC. Therefore, the null hypothesis $\mathbf{H_{BFC,}}$ $\mathbf{H_0}$ that stated there is no difference between SCC and NSCC is rejected since it shows there have significant differences among the variables before financial crisis period.

During financial crisis period, SCC corporate performance (pre-tax ROA and ROE) shows better performance compared to NSCC even though the percent of performance was reduce than previous period. Other ratios also show SCC has better performance than NSCC except growth ratio and size ratio. However, some of the financial ratio performance of SCC's itself is getting worst if compared the period before financial crisis. Such as STD ratio and LTD ratio becomes higher during financial crisis. That means value of SCC issuing more STD and LTD during financial crisis period. This result reject the null hypothesis $\mathbf{H_{DFC,}}$ $\mathbf{H_0}$ that are predict there have no difference between SCC and NSCC during financial crisis period.

After financial crisis period, SCC again enhancing all the financial ratio performance compared to NSCC except size ratio. From table 6, we can see pre-tax ROA ratio and tangibility ratio getting slightly higher, debt to equity ratio getting lower and growth ratio increase by 6 percent from the previous period during financial crisis. This result confirms that null hypothesis $\mathbf{HA_{FC,}}$ $\mathbf{H_0}$ is reject since the SCC and NSCC have differences after financial crisis period.

4.2.1.1 Plot Chart of Mean Value for Pre-tax Return on Assets (ROA) Ratio

The plot charts below will explain the mean value of pre-tax ROA based on financial period and status of the company in details.



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Mean	6.22	6.94	5.40	4.53	5.67	4.30

Figure 6: Mean Value of Pre-tax ROA ratio based on financial period and status of the company.

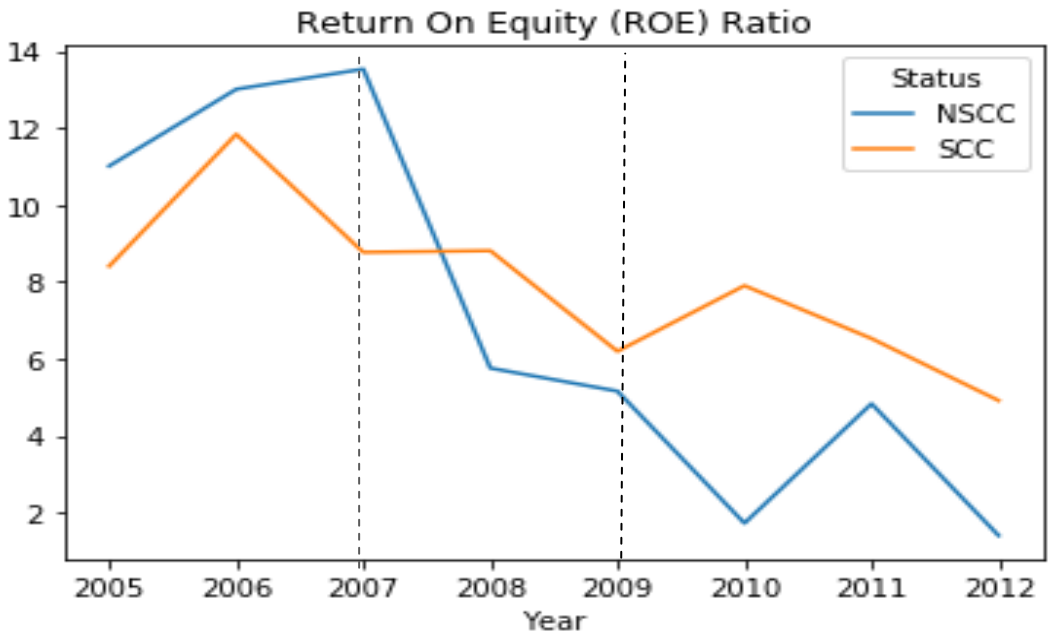
The first indicator for corporate performance's proxy in this study is pre-tax return on assets (Pre-tax ROA) ratio. Figure 6 shows the plot chart of mean values of pre-tax ROA based on financial period and status of the company. As shown in plot chart above, before financial crisis from year 2005 until year 2007 the mean value of pre-tax ROA for NSCC slightly higher than SCC. The mean value of SCC is 6.22 percent and NSCC is 6.94 percent. This result is predicted because the nature of the company which the investor prefer to invest into NSCC than SCC and it supported by Farooq and Alahkam (2016) that found ROA for NSCC in MENA region higher than SCC before financial crisis period as well.

As expected during financial crisis period from year 2008 until year 2009 the mean values of pre-tax ROA for both companies fall down. It also shows that NSCC have more impact during financial crisis period than SCC. Mean value for SCC drop by 0.82 percent while mean values for NSCC drop by 2.41 percent. Even though both types of company are affected during financial crisis however NSCC affected more due to the characteristic of the company. NSCC had higher debt ratio than SCC, therefore during financial crisis NSCC have major financial distress that are contribute to the lower pre-tax ROA. Ashraf and Mohammad (2014) mentioned that the same result found which the ROA of SCC higher than NSCC during financial crisis period.

Interestingly, after financial crisis period from year 2010 until year 2012, the mean value of pre-tax ROA for SCC is slightly increases by 0.27 percent however, the mean value of pre-tax ROA for NSCC continues fall by 0.23 percent from the period during financial crisis period. It shows that SCC can recover faster than NSCC in generating their income. The trend of pre-tax ROA for SCC is consistent with study by Schulz (2017) on Dutch unlisted SME which is the percent of ROA are increased after financial crisis period.

Null hypothesis $\mathbf{H_{BFC}}$, $\mathbf{H_{0,ROA}}$, $\mathbf{H_{DFC}}$, $\mathbf{H_{0,ROA}}$ and $\mathbf{H_{AFC}}$, $\mathbf{H_{0,ROA}}$ stated that there is no significant difference between SCC and NSCC before, during and after financial crisis period. Since the results in figure 6 shows there have significant differences through out the financial period, therefore null hypothesis is rejected. Pre-tax ROA for NSCC is higher than SCC before financial crisis period. However, the pretax ROA of SCC is higher than NSCC during and after financial crisis period. It proved that SCC more efficient in managing its assets to produce profit during and after financial crisis period. Even though all firm have impact during financial crisis regardless the status of the company, SCC still prove that they manage to minimise the impact of crisis to the firm.

4.2.1.2 Plot Chart of Mean Value for Return on Equity (ROE) Ratio



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Mean	9.67	12.52	7.50	5.46	6.45	2.66

Figure 7: Mean Value of Return On Equity (ROE) Ratio Based on Financial Period And Status of the Company**.**

Second indicator for corporate performance proxy in this study is return on equity (ROE) ratio. Figure 7 shows the mean value of ROE ratio based on financial period and status of the company. The result shows that before financial crisis from year 2005 until year 2007, mean value of ROE for NSCC are higher than SCC with 12.52 percent for NSCC and 9.67 percent for SCC respectively.

Then it followed during financial crisis period from year 2008 until year 2009, the mean value of ROE for SCC is 7.5 percent while for NSCC the mean value is 5.46 percent. The mean value of ROE is slump despite the status of the company. SCC's mean value drop by 2.17 percent while NSCC drop immensely by 7.06 percent during financial crisis period. The reasons why NSCC drop enormously

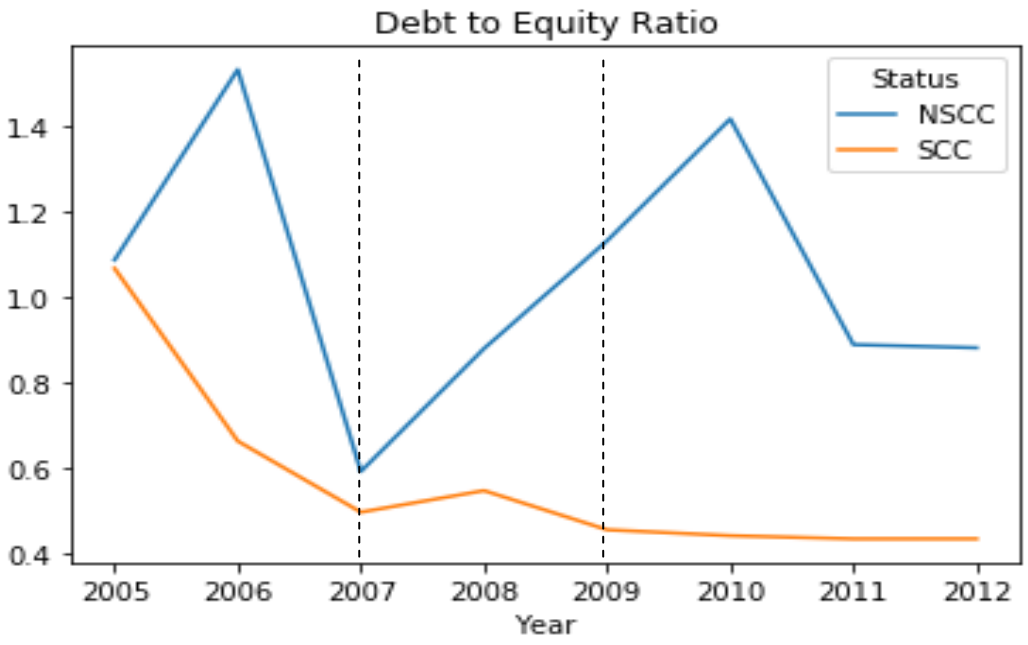
because of majority of the NSCC are having losses during financial crisis and they even have negative equity through this period.

After financial crisis period from year 2009 until year 2012, mean value of ROE for SCC continuously higher than NSCC. The mean value of ROE for SCC is 6.45 percent which is slightly lower than prior period while ROE's mean value for NSCC is 2.66 percent which is drop by 2.8 percent than previous period. Based on the plot chart above, it demonstrates that NSCC has more impact after financial crisis period for ROE.

The null hypothesis $\mathbf{H_{BFC}}$, $\mathbf{H_{0,ROE}}$, $\mathbf{H_{DFC}}$, $\mathbf{H_{0,ROE}}$ and $\mathbf{H_{AFC}}$, $\mathbf{H_{0,ROE}}$ predicts that ROE for SCC and NSCC do not have any significant differences throught out the financial crisis period. However based on the result in figure 7, it produced significantly statistical differences. Therefore, this null hypothesis for ROE is rejected. This result shows how effective the SCC management in using equity financing to fund the operation of the firms especially during and after financial crisis period. Even though before financial crisis period, most of the parties such as banker, investor and creditor focus on NSCC due to the size, reputation and stability of NSCC. Therefore, we can expect the corporate performance before financial crisis period is more favourable to NSCC. However, during and after financial crisis period, SCC shows higher ROE compared to NSCC.

As a conclusion, the profitability ratios of SCC that are comprises of pre-tax ROA and ROE in this study showing higher ratio and better performance than NSCC during and after financial crisis period.

4.2.1.3 Plot Chart of Mean Value for Debt to Equity (D/E) Ratio



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Mean	0.74	1.07	0.50	1.00	0.44	1.06

Figure 8: Mean Values of Debt to Equity (D/E) Ratio Based on Financial Period And Status of the Company.

The first independent variable in this study is debt to equity (D/E) ratio. It is measures by total debt divided by total equity. This ratio explains the percentage of the firm financing that comes from debt and equity. Figure 8 shows the mean value of debt to equity (D/E) ratio based on financial period and status of the company.

The result shows in figure 8 that the mean value of D/E ratio for NSCC is much higher than SCC regardless the financial crisis period. Before financial crisis period, the mean value of D/E ratio for SCC is 74 percent and NSCC is 107 percent respectively.

During financial crisis period, the mean value of D/E for SCC falls to 50 percent and NSCC 100 percent. It demonstrates that during financial crisis the debt

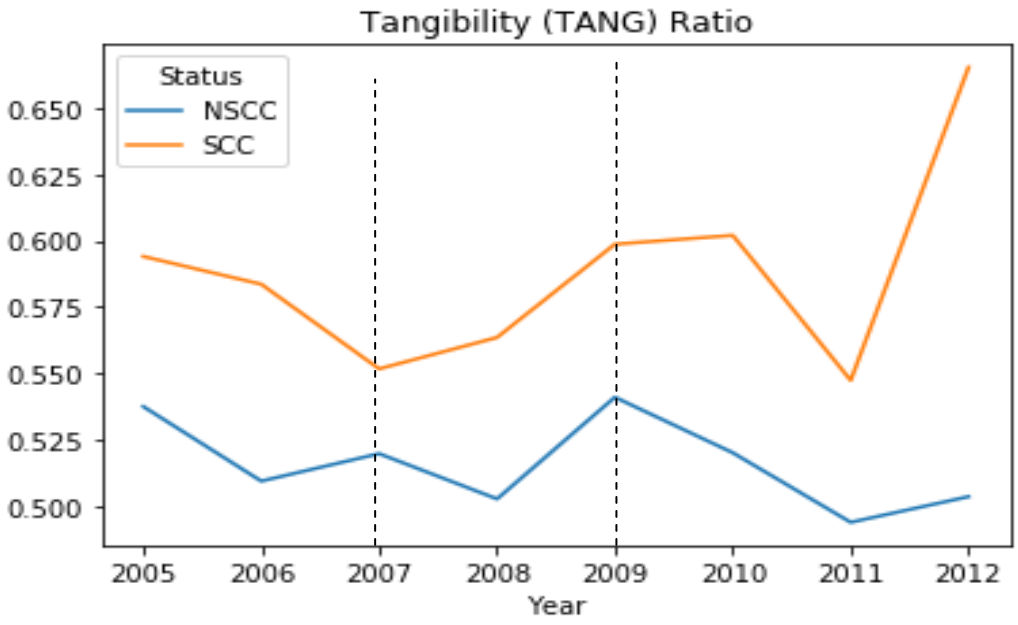
of SCC become lesser by 24 percent, however NSCC's debt only reduce by 7 percent.

After financial crisis, SCC's D/E ratio continues fall to 44 percent while NSCC's D/E ratio slightly increase to 106 percent after financial crisis period. Through out this financial period, we can perceive that financial pattern for D/E for SCC and NSCC totally having differences. SCC's D/E ratio keep falling period by period however NSCC just having slightly decrease during financial crisis before it increase again after financial crisis period.

Null hypothesis $\mathbf{H_{BFC}}$, $\mathbf{H_{0,DE}}$, $\mathbf{H_{DFC}}$, $\mathbf{H_{0,DE}}$ and $\mathbf{H_{AFC}}$, $\mathbf{H_{0,DE}}$ predicts that there is no significant differences in debt to equity ratio before, during and after financial crisis period between SCC and NSCC. Based on the result shows in figure 8, it rejects the null hypothesis for D/E ratio. The result shows that there have significant differences in D/E ratio between SCC and NSCC. D/E ratio for SCC is lower than NSCC before, during and after financial crisis period.

This result is anticipating due to the characteristics of SCC. Under Dow Jones Global Islamic Indices, one of the financial ratio benchmark is total debt must be not more than 33 percent of total equity. Even though this study using FTSE Shariah Global Index as index providers, we can foresee that debt to equity ratio for SCC must be lower than NSCC. In addition, from the plot chart above, it concluded that NSCC using debt financing more than equity financing. Besides, it also proven that SCC were less risky and more stable compared to NSCC that are more risky and highly to financial distress due to the high debt ratio.

4.2.1.4 Plot Chart of Mean Value for Tangibility (TANG) Ratio



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Mean	57.60	52.20	58.10	52.10	60.50	50.60

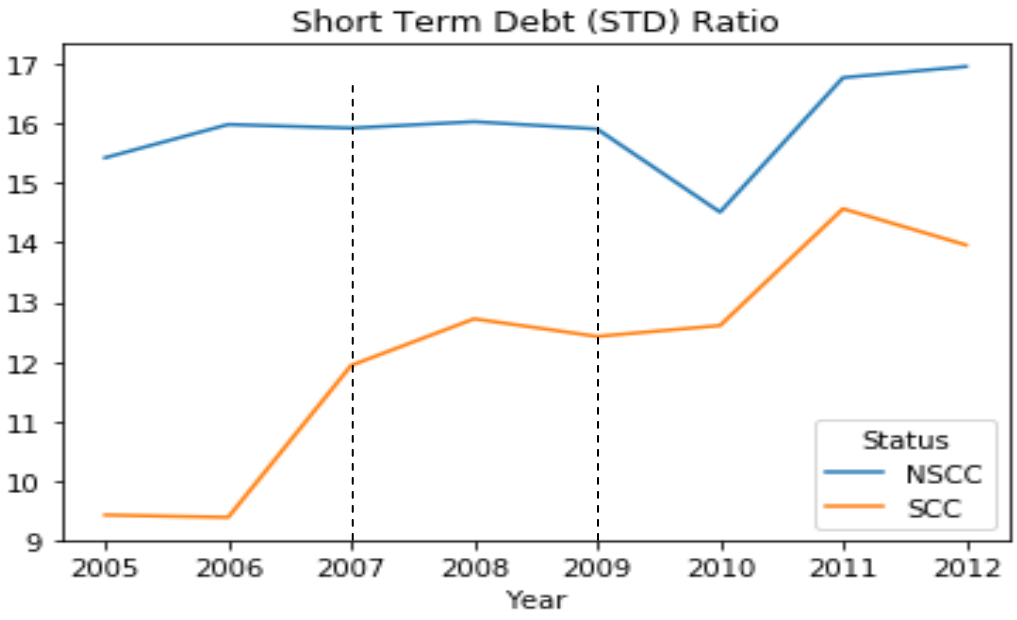
Figure 9: Mean Value of Tangibility (TANG) Ratio Based on Financial Period And Status of the Company.

Second independent variable in this study is tangibility (TANG) ratio. Figure 9 above illustrates plot chart of tangibility ratio based on financial period and status of the company. Tangibility ratio is measure by tangible assets divided by total assets. The mean value of tangibility ratio for SCC is higher than NSCC regardless the financial crisis period. The results show that before financial crisis period, the mean value for SCC is 57.60 percent and NSCC is 52.20 percent respectively.

During financial crisis period the mean value for SCC is slightly increase to 58.10 percent while NSCC slightly fall to 52.10 percent from the prior period. After financial crisis, the mean value for SCC increased to 60.50 percent while NSCC decrease to 50.60 percent. From a plot chart above, it demonstrated that mean value of tangibility ratio for SCC is higher than NSCC.

The null hypothesis $\mathbf{H_{BFC,}}$ $\mathbf{H_{0,TANG,}}$ $\mathbf{H_{DFC,}}$ $\mathbf{H_{0,TANG}}$ and $\mathbf{H_{AFC,}}$ $\mathbf{H_{0,TANG}}$ predicts that there is no significant differences in term of tangibility ratio between SCC and NSCC through out the financial crisis period. This null hypothesis is rejected based on the result that is presented in figure 9. It shows that there have significant differences in tangibility through out the financial crisis period between SCC and NSCC. The tangibility (TANG) ratio for SCC is higher than NSCC before, during and after financial crisis period. It is tangibility ratio important to the firms? Yes, tangibility ratio are vital to the firms in order to determine the collateral level therefore, the firms can issue more debt for their financing if the collateral level are high. In other hand, the firms can avoid from going to bankruptcy if they issuing debt by using tangible assets as collateral. Added to that, SCC's debt ratio cannot excess their level of tangibility ratio. It is due to the SCC required to use tangible assets as collateral in order to raise their debt financing. Nevertheless, it is opposite to NSCC that are not required to have tangible assets as collateral.

4.2.1.5 Plot Chart of Mean Value for Short-Term Debt (STD) Ratio



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**SCC**
Mean	10.25	15.77	12.57	15.97	13.71	16.08

Figure 10: Mean Value of Short-Term Debt (STD) Ratio Based on Financial Period And Status of the Company.

Third independent variable in this study is short-term debt (STD) ratio. It is measures by short-term debt divided by total assets. It gauges the possibility of the company to meet their short-term obligations. Figure 10 shows the plot chart and mean value of STD ratio based on financial period and status of the company. The plot chart demonstrate that SCC has lower mean value compared to NSCC from the period before financial crisis which is year 2005 until after the financial crisis period in year 2012. It shows mean value before financial crisis period for SCC is 10.25 percent and NSCC is 15.77 percent.

During financial crisis period the mean values slightly increase to 12.57 percent for SCC and 15.97 percent for NSCC. It indicates that SCC increases their

usage of STD financing by 2.32 percent during financial crisis period compared to NSCC that just increased by 0.20 percent only.

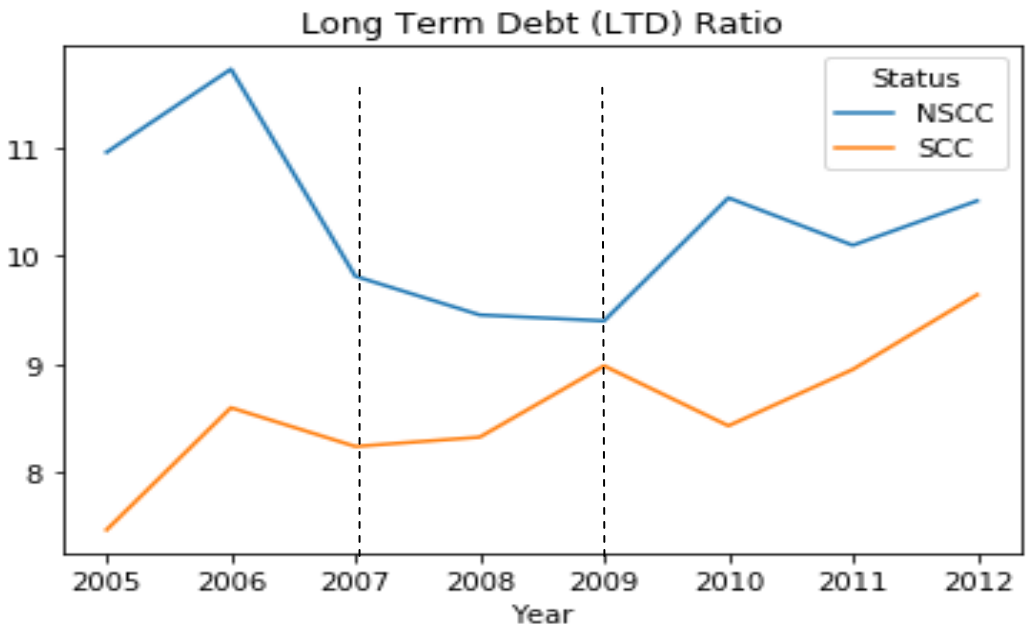
After financial crisis period, the mean value of STD ratio for SCC continues increase to 13.71 percent while NSCC is 16.08 percent respectively. It shows that both company prefer to use STD financing even after financial crisis period.

Based on the figure 10 above, it shows that there have significant differences between SCC and NSCC in STD ratio throught out the financial crisis period. Therefore, the null hypotheses $\mathbf{H_{BFC}}$, $\mathbf{H_{0,STD}}$, $\mathbf{H_{DFC}}$, $\mathbf{H_{0,STD}}$ and $\mathbf{H_{AFC}}$, $\mathbf{H_{0,STD}}$ are rejected because it predict there is no difference for SCC and NSCC in STD ratio. One of the reason why SCC having lower STD ratio than NSCC because of the benchmark set by the index provider.

The present findings seem to be consistent with other research by Iqbal and Kume (2011) study on PLC in UK and France and L. Hassan and Samour (2016) study on PLC in US which found there have similarities in financing pattern which the firms keep on continues to used and even increased their usage of STD period by period. However, the findings of the current study do not support previous research by Schulz (2017) on Dutch unlisted SME that the percentage of usage STD after financial crisis diminish compared to previous period.

It realised that either SCC or NSCC they more focuses on STD as debt financing throughout the period. It supported by Aggarwal and Yousef (2000) that highlight majority of Islamic debt instrument issued for short debt financing. Fosberg (2013) also found there have increasing in issue of STD by the firms in US affect from financial crisis period. In addition, Sahudin, Ismail, Sulaiman, Rahman, and Jaafar (2019) mention that some sector such as construction, industrial and trade and services more relies on short debt financing in order to meet their working capital requirement. Study on SMEs in Portuguese by Proença, Laureano, and Laureano (2014) also found STD have been use more than LTD from year 2007 until year 2010.

4.2.1.6 Plot Chart of Mean Value for Long-Term Debt (LTD) Ratio



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Mean	8.10	10.83	8.66	9.43	9.01	10.38

Figure 11: Mean Value of Long-Term Debt (LTD) Ratio Based on Financial Period and Status of the Company

Next independent variable in this study is long-term debt (LTD) ratio. This ratio is measure by long-term debt divided by total assets. This ratio indicates that how much the assets are financed by LTD financing. Figure 11 shows the mean value of long-term debt (LTD) ratio based on the financial period and status of the company.

It explained that SCC have lower LTD ratio compared to NSCC regardless the financial period. Before financial crisis period there have gap in mean value between SCC and NSCC. The mean value of LTD ratio is 8.10 percent for SCC and 10.83 percent for NSCC respectively.

During financial crisis period, mean value of LTD ratio increase to 8.66 percent for SCC while it decreases to 9.43 percent for NSCC. It shows that SCC

raises their LTD financing during financial crisis whereas NSCC reduce their LTD financing usage during this period. It happened because SCC has high collateral level due to the high tangibility ratio. Therefore, SCC can easily increase the debt financing during this time.

It more remarkable after financial crisis period, when SCC's mean value continues increase to 9.01 percent while NSCC's mean value increase to 10.38 percent. Both of the firms enhance their LTD usage after financial crisis in order to keep their firms operation by finance their assets or project through LTD financing.

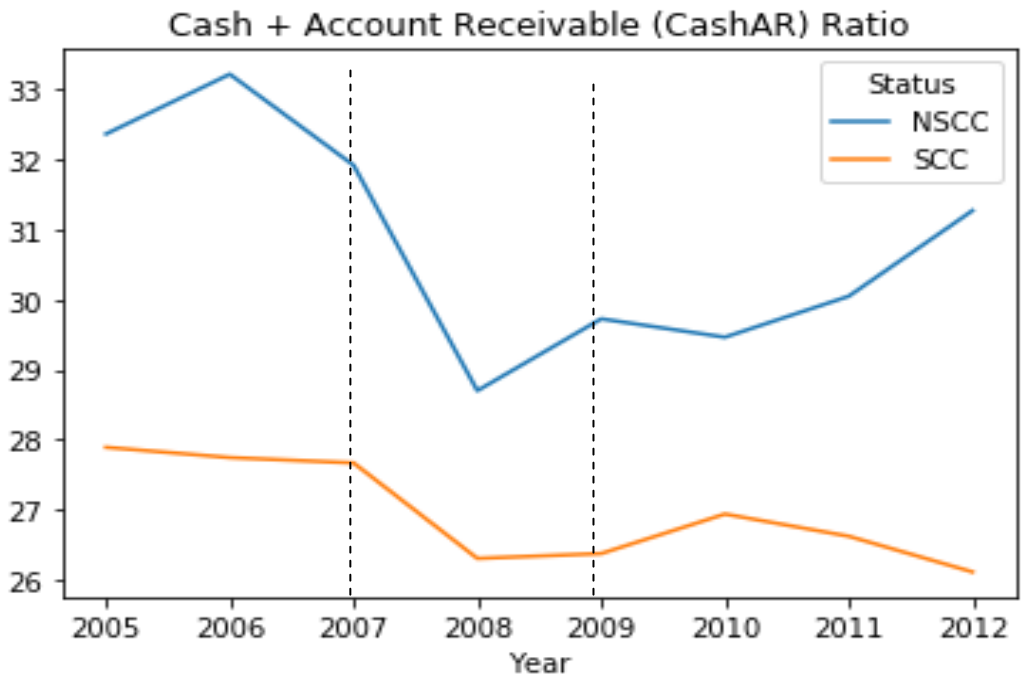
The null hypothesis $\mathbf{H_{BFC}}$, $\mathbf{H_{0,LTD}}$, $\mathbf{H_{DFC}}$, $\mathbf{H_{0,LTD}}$ and $\mathbf{H_{AFC}}$, $\mathbf{H_{0,LTD}}$ stated that there is no significant differences among SCC and NSCC for LTD ratio before, during and after financial crisis period. Therefore, this null hypothesis is rejected because the result shows there have significant differences in long-term debt (LTD) ratio on SCC and NSCC throught out the financial crisis period. The results show that LTD ratio for SCC is lower than NSCC before, during and after financial crisis period.

Based on figure 11, we can identify the financial pattern of SCC and NSCC. As a general, SCC has increase their LTD financing through out financial period. Whereas NSCC has decrease their LTD financing during financial crisis period and then increase it back after financial crisis period. These results match those observed in earlier studies by Iqbal and Kume (2011) that found PLC in France and German have similar financing pattern on LTD with SCC that is the used of LTD become more enhancing and broader period by period. On the other hand, firms in UK have similar financing pattern on LTD with NSCC, which is during financial crisis period the used of LTD become lessen before it raise back after financial crisis period. In addition, other study by L. Hassan and Samour (2016) study on PLC in US on consumer services, healthcare, and industrial found that LTD financing increased during financial crisis period and it have parallel with SCC financing pattern.

According to the trade of theory (TOT) that are stated the firm should have their target debt in order to maximise the benefit from tax deduction on interest. Nevertheless, this theory contradicts with the Shariah guideline that is prohibited interest in any transaction in SCC. Even though SCC can issue their debt-financing (such as Islamic loan, sukuk) limit to 33 percent of total assets, however it required

to use tangible assets as collateral for raise the debt financing. One of the justification, STD ratio and LTD ratio for SCC lower than NSCC over the period due to the financial benchmark set by the index provider.

4.2.1.7 Plot Chart of Mean Value for Cash plus Account Receivables (CashAR) Ratio



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Mean	27.77	32.50	26.34	29.21	26.56	30.26

Figure 12: Mean Value of Cashar Ratio Based on Financial Period and Status of the Company

Next independent variables in this study is cash plus account receivable (CashAR) ratio. This ratio is measure by total cash plus account receivables divided by total assets. Figure 12 shows the mean value of CashAR based on financial period and status of the company.

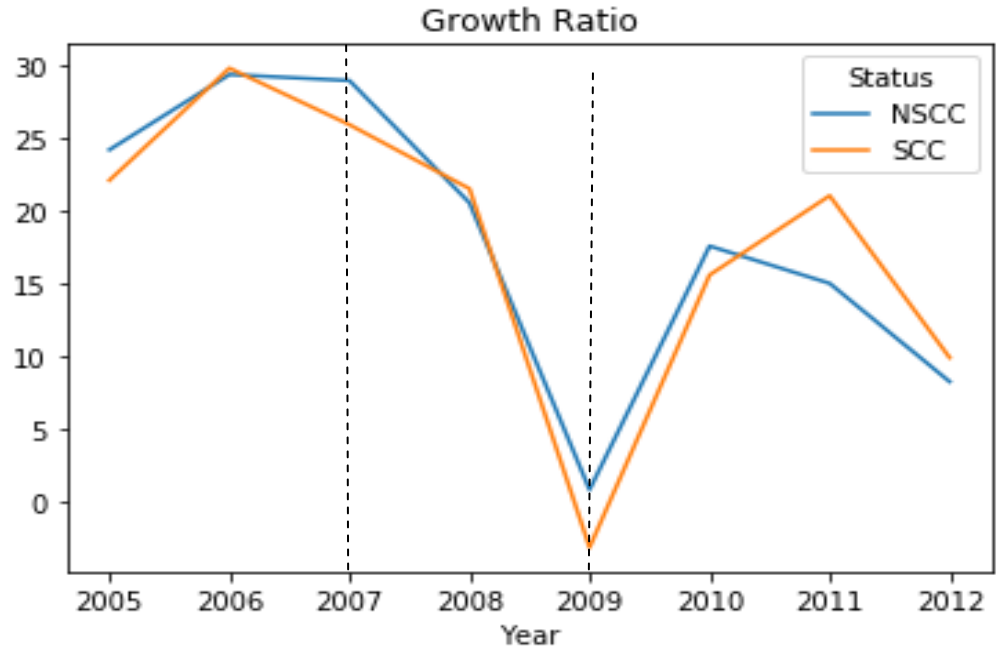
This ratio indicates that high cash and account receivables allow the company to be more effective compared to the company that have low cash and account receivables. However some study such as Grossman and Hart (1982) argued that high ratio in cash and account receivables will expose to the high risk of non-payment by client and agency cost. Under Shariah guidelines, it has restriction on CashAR ratio should not be more than 50 percent of the total assets.

According to the Figure 12, it shows that throughout the period before, during and after financial crisis, SCC have lower CashAR ratio compared to NSCC. The mean value before financial crisis period is 27.77 percent for SCC and 32.50 percent for NSCC. During the financial crisis period, the mean value for SCC slightly lower to 26.34 percent while mean value for NSCC decrease to 29.21 percent compared to prior financial crisis period. However, after financial crisis period, mean value for SCC slightly higher to 26.56 percent and NSCC is 30.26 percent.

The result shows in figure 12 proved that CashAR ratio for SCC and NSCC throughtout the period have significant differences. Therefore the null hypothesis $\mathbf{H_{BFC}}$, $\mathbf{H_{0,CASHAR}}$, $\mathbf{H_{DFC}}$, $\mathbf{H_{0,CASHAR}}$ and $\mathbf{H_{AFC}}$, $\mathbf{H_{0,CASHAR}}$ that are stated CashAR ratio do not have any significant differences through out the financial period are rejected.

These findings further support the idea of G.Rajan and Zingales (1994) that stated that usually the firms going to bankruptcy because of the liquidity problem and it can increase the agency conflict when the firms hold too much cash in hand. However, this results contradict with Farooq and Alahkam (2016) argue that SCC are underperforming because of their characteristics itself such as low account receivables and low cash. SCC should grab large investment opportunity if they hold high amount of cash and account receivables. In addition to that, other study by Luo and Chen (1997), Mikkelson and Partch (2003), and Margaritis and Psillaki (2010) also supported that the higher account receivables and cash affected positively to the firm performance. On the other hand, this result proved that the financial benchmark that are set by index provider for SCC prevent the company having the financial distress esspecially during financial crisis period.

4.2.1.8 Plot Chart of Mean Value for Growth (GRW) Ratio



	BFC		DFC		AFC	
	SCC	**NSCC**	**SCC**	**NSCC**	**SCC**	**NSCC**
Mean	25.96	27.53	9.21	10.71	15.54	13.64

Figure 13: Mean Value of Growth Ratio Based on Financial Period and Status of the Company.

The last independent variable in this study is growth ratio. It measured by current year sales minus prior year sales and divided by prior year sales. Figure 13 shows the mean value for growth ratio based on financial period and status of the company.

As shown in Figure 13, throughout the period both types of company have similar growth ratio. Before financial crisis period, the mean value of growth ratio is 25.96 percent for SCC and 27.53 percent for NSCC. During financial crisis period, SCC and NSCC have very huge diminish in the growth ratio. The mean value greatly drop to 9.21 percent for SCC and 10.71 percent for NSCC. Interesting the finding in

this study that SCC's growth better after financial crisis period with the mean value increased to 15.54 percent while NSCC increased to 13.64 percent.

The null hypothesis $\mathbf{H_{BFC,}}$ $\mathbf{H_{0,GROWTH,}}$ $\mathbf{H_{DFC,}}$ $\mathbf{H_{0,GROWTH}}$ and $\mathbf{H_{AFC,}}$ $\mathbf{H_{0,GROWTH}}$ are rejected because it predict that growth ratio do not have any significant differences between SCC and NSCC throught out the financial crisis period. Based on figure 8, it verifies that there have significant differences for SCC and NSCC throught out the financial crisis period. It proves that there has enormous increase in growth ratio for SCC compared to NSCC due to the awareness and attention from the investors that realised SCC more resilient during financial crisis period. Due to that reason, it shows that SCC can recover and improve faster than NSCC after financial crisis.

4.3 CORRELATION ANALYSIS

Correlation analysis has been performed to examine the existence of relationship between each dependent variables, independent variables and control variables. The purpose of correlation coefficient is to seek whether such relationship between the two variables is in linear fashion (Coakes et al., 2008). This analysis helps to examine whether one variable is related to another variable. In addition, this analysis is used to explain the strength and direction of the linear relationship among the variable.

Pearson Correlation test has been conducted in this study to examine whether there is any multicollinearity problems occur among the variables. Based on table 7, correlation coefficient before financial crisis period the test reveals that corporate performance that using pre-tax ROA as a proxy has a significant correlation with CashAR ratio and growth ratio for SCC. However, for NSCC there has significant correlation with all the variables except debt to equity ratio only. Next corporate performance proxy is ROE that shows there have significant correlation with debt to equity ratio, tangibility ratio, CashAR ratio and growth ratio for SCC. ROE have significant correlation with all variables except debt to equity ratio and STD ratio for NSCC.

Other than that, for SCC the LTD ratio has significant correlation with CashAR, TANG ratio have significant correlation with CashAR and growth ratio while CashAR ratio have significant correlation with growth ratio and size ratio. However, for NSCC, debt to equity ratio have significant correlation with STD ratio and LTD ratio, STD ratio has significant correlation with LTD ratio, LTD ratio have significant correlation with TANG ratio, CashAR ratio, growth ratio and size ratio, TANG ratio have significant correlation with CashAR ratio and growth ratio. Lastly, CashAR ratios have significant correlation with growth ratio and size ratio. The values of correlation coefficient for all variables in ranged between -0.341 and 0.580 for SCC and in ranged between -0.310 and 0.780 for NSCC respectively.

Next table 8 is correlation coefficient during financial crisis period. The values of correlation coefficient for all variables ranged between 0.283 and 0.768 for SCC -0.449, while 0.785 for NSCC. The test exposes that corporate performance that using pre-tax ROA as a proxy has a significant correlation with tangibility, CashAR

ratio and growth ratio for SCC. Next corporate performance proxy is ROE that shows there have significant correlation with tangibility ratio and CashAR ratio for SCC. However, for NSCC both proxies show there has significant correlation with all the variables except long-term debt ratio only.

Other variables that have significant correlations for SCC based on table 8 are debt to equity ratio have significant with STD ratio, LTD ratio, CashAR ratio, growth ratio and size ratio, while LTD ratio has significant correlation with CashAR, TANG ratio have significant correlation with CashAR ratio and growth ratio. Lastly, CashAR has significant correlation with size ratio. However, for NSCC, debt to equity ratio has significant correlation with STD ratio and LTD ratio, STD ratio has significant correlation with LTD ratio, STD ratio have significant correlations with TANG ratio, CashAR ratio, growth ratio and size ratio. While TANG ratio has significant correlation with CashAR ratio and growth ratio and CashAR ratio have significant correlation with growth ratio and size ratio.

Next is table 9, correlation coefficient after financial crisis period. It shows the values of correlation coefficient for all variables in ranged between -0.176 and 0.436 for SCC. The test shows that corporate performance that using pre-tax ROA as a proxy has a significant correlation with LTD ratio, tangibility, growth ratio and size ratio for SCC. However, for NSCC there has significant correlation with all the variables except long-term debt ratio and CashaAR only. Next corporate performance proxy is ROE that shows there have significant correlation with debt to equity ratio, tangibility ratio, CashAR ratio and growth ratio for SCC. ROE have significant correlation with all variables except long-term debt ratio only for NSCC. The values for NSCC correlation coefficient for all variables in ranged between -0.361 and 0.581.

Other variables that have significant correlation based on table 9 for SCC are debt to equity ratio has significant correlation with LTD ratio and CashAR ratio, STD ratio has significant correlation with growth ratio, LTD ratio has significant correlation with CashAR, and TANG ratio has significant correlation with CashAR ratio and growth ratio. While CashAR ratio have significant correlation with growth ratio and size ratio. However, for NSCC, debt to equity ratio have significant correlation with STD ratio, LTD ratio has significant correlation with TANG ratio and size ratio, TANG ratio has significant impact to CashAR ratio, growth ratio, and

size ratio. While CashAR has significant correlation with size ratio, and growth ratio have significant correlation with size ratio as well.

According to Pallant (2010), the strength of such relationship between the two independent variables is in a perfect positive correlation if it shown between the values of -1.00 to 1.00. This value indicates that, the value of one variable can be determined exactly by knowing the value of the other variable. If the correlation between the variables is more than 0.7, then one of the variables should be omitted or a composite variable should be structured from the value of the highly correlated variables. Gujarati (1995) sets the rule of thumb for detecting multicollinearity problems when bivariate correlation is greater than 0.8. His rule of thumb was later supported by Field (2009) who stated that correlation between 0.8-0.9 is considered very strong. Based on the entire table above (see table 7 until table 9), the p-value of the correlation coefficients it indicate there is no problem for multicollinearity.

Table 7: Correlation Coefficient before Financial Crisis Period

	Pretax ROA	ROE	Debt/Equity	STD	LTD	TANG	CashAR	Growth	Size
Pretax ROA	1								
ROE	.580**	1							
Debt/Equity	.005	.175**	1						
STD	.007	.000	.047	1					
LTD	-.014	.050	.036	-.043	1				
TANG	-.077	-.085*	.037	-.041	-.023	1			
CashAR	.191**	.147**	.054	.019	-.096*	-.341**	1		
Growth	.175**	.287**	.046	-.011	.024	-.122**	.093*	1	
Size	.074	.014	-.031	-.017	.022	-.022	-.162**	.000	1

Shariah Compliant Companies (SCC)

	Pretax ROA	ROE	Debt/Equity	STD	LTD	TANG	CashAR	Growth	Size
Pretax ROA	1								
ROE	.780**	1							
Debt/Equity	-.034	.017	1						
STD	-.126**	-.037	.075*	1					
LTD	-.122**	-.310**	-.087*	-.081	1				
TANG	-.177**	-.270**	-.017	-.051	.078*	1			
CashAR	.135**	.094**	-.004	-.040	-.175**	-.306**	1		
Growth	.275**	.270**	-.019	.023	-.074*	-.174**	.148**	1	
Size	.084*	.090**	.036	-.045	.170**	.024	-.088*	.032	1

Non-Shariah Compliant Companies (NSCC)

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 8: Correlation Coefficient during Financial Crisis Period

	Pretax ROA	ROE	Debt/Equity	STD	LTD	TANG	CashAR	Growth	Size
Pretax ROA	1								
ROE	.768**	1							
Debt/Equity	-.050	-.088	1						
STD	-.063	-.082	.218**	1					
LTD	-.041	.017	.418**	-.070	1				
TANG	-.222**	-.107*	-.041	-.049	.010	1			
CashAR	.162**	.183**	-.149**	.008	-.218**	-.283**	1		
Growth	.172**	.097	.323**	.085	.050	-.194**	.045	1	
Size	.050	-.036	.174**	-.006	.120*	-.003	-.191**	.060	1

Shariah Compliant Companies (SCC)

	Pretax ROA	ROE	Debt/Equity	STD	LTD	TANG	CashAR	Growth	Size
Pretax ROA	1								
ROE	.785**	1							
Debt/Equity	-.148**	-.449**	1						
STD	-.178**	-.201**	.123**	1					
LTD	-.026	.030	.017	-.082	1				
TANG	-.131**	-.116**	.001	.086*	.217**	1			
CashAR	.143**	.087*	-.012	-.076	-.199**	-.402**	1		
Growth	.216**	.178**	-.042	-.065	.050	-.122**	.009	1	
Size	.122**	.120**	.029	-.004	.149**	.035	-.070	.105*	1

Non-Shariah Compliant Companies (NSCC)

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 9: Correlation Coefficient after Financial Crisis Period

	Pretax ROA	ROE	Debt/Equity	STD	LTD	TANG	CashAR	Growth	Size
Pretax ROA	1								
ROE	.436**	1							
Debt/Equity	-.074	-.140**	1						
STD	.008	.006	.080	1					
LTD	-.103*	.048	.301**	-.077	1				
TANG	-.176**	-.095*	-.035	-.028	.009	1			
CashAR	.082	.129**	-.161**	.017	-.180**	-.159**	1		
Growth	.176**	.166**	-.015	.110**	-.077	-.125**	.167**	1	
Size	.181**	.062	.081	.056	.055	-.043	-.191**	.035	1

Shariah Compliant Companies (SCC)

	Pretax ROA	ROE	Debt/Equity	STD	LTD	TANG	CashAR	Growth	Size
Pretax ROA	1								
ROE	.581**	1							
Debt/Equity	-.100**	-.102**	1						
STD	-.106**	-.100**	.089*	1					
LTD	.024	.020	-.027	-.050	1				
TANG	-.149**	-.144**	-.035	.063	.076*	1			
CashAR	.065	.070*	.030	-.027	-.066	-.361**	1		
Growth	.238**	.149**	-.006	-.064	.002	-.095**	.029	1	
Size	.109**	.105**	.034	-.064	.084*	-.093**	-.110**	.088*	1

Non-Shariah Compliant Companies (NSCC)

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.4 MULTICOLLINEARITY ANALYSIS

Table 10: Multicollinearity analysis for Shariah Compliant Companies (SCC) and Non-Shariah Compliant Companies (NSCC**)**

VARIABLE	SCC		NSCC	
	Tolerance	**VIF**	**Tolerance**	**VIF**
Debt/Equity	.980	1.020	.988	1.013
TANG	.943	1.061	.864	1.157
STD	.989	1.011	.983	1.018
LTD	.959	1.043	.957	1.045
CashAR	.894	1.118	.858	1.165
Growth	.968	1.033	.976	1.025
Size	.960	1.041	.967	1.035

Table 10 above shows that multicollinearity analysis for all independent and control variables for shariah compliant companies (SCC) and non-shariah compliant companies (NSCC). Based on table above, the results demonstrate that none of the tolerances value is less than 0.2 and none of the variance inflation factor (VIF) is 10 or greater than 10. Such results indicate that there is no problem of multicollinearity analysis for debt to equity ratio (D/E), short-term debt ratio (STD), long-term debt ratio (LTD), tangibility ratio (TANG), cash plus account receivable ratio (CashAR), growth ratio (GRW) and size ratio (SIZE).

As highlighted by Pallant (2010), the cut-off point determining the presence of multicollinearity if the value of VIF is 10 and greater than that. The result shows in the table above, the range of VIF value of independent and control variables between 1.011 and 1.165 for both categories of companies. Therefore, the multicollinearity assumption was not violated. This analysis is important to run at the beginning of the study because if the VIF value is 10 or greater than that it likely that regression coefficient are poorly estimated and significant tests on those coefficients may be misleading. Therefore, this results show that the regression analysis can be

run and the the results from the regresion coefficeient results that are show in subsection 4.5 are reliable and significant.

4.5 MULTIPLE LINEAR REGRESSION ANALYSIS

Multiple regression analysis is one of the parametric techniques that are applicable when the data assumed to be normally distributed. However, the regression analysis is robust for validity against non-normality. With sample size of more than 30, the violation of the normality assumption should not cause any major problems (Pallant, 2010). Based on this argument, a multiple regression analysis as an extension of the correlation analyses has been conducted. The main difference between correlation and regression is that, in bivariate correlation, the relationship is only tested between the two variables (one independent and one dependent variable) whereas in multiple regression analysis, more than two independent variables will be tested for their explanatory power against one dependent variable. The regression models for this study are as follow:

1. $Y\ (\text{Pretax ROA}) = \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 SIZE_{it} + \beta_8 (X) + \varepsilon$

2. $Y\ (\text{ROE}) = \beta 0 + \beta_1 D/E_{it} + \beta_2 Tang_{it} + \beta_3 STD_{it} + \beta_4 LTD_{it} + \beta_5 CASH/AR_{it} + \beta_6 GRW_{it} + \beta_7 SIZE_{it} + \beta_8 (X) + \varepsilon$

Whereby:

Pre-tax ROA = Return on asset before tax ratio
ROE = Return on equity ratio
D/E = Debt to Equity Ratio
STD = Short term debt ratio
LTD = Long term debt ratio
TANG = Tangibility assets ratio
CASHAR = Cash + Account receivable ratio
SIZE = Size ratio
GRW = Growth ratio
X = Dummy Variable,0 = Shariah Compliant Companies (SCC)
1=Non-Shariah Compliant Companies (NSCC)

Table 11: Regression Analysis before Financial Crisis Period

1.OLS REGRESSION RESULTS (BEFORE FINANCIAL CRISIS)

Dep. Variable:	Pretax ROA	R-squared:	0.086
Model:	OLS	Adj. R-squared:	0.080
Method:	Least Squares	F-statistic:	16.15
Date:	Tue, 30 Jul 2019	Prob (F-statistic):	5.48e-23
Time:	07:30:03	Log-Likelihood:	-5611.2
No. Observations:	1386	AIC:	1.124e+04
Df Residuals:	1377	BIC:	1.129e+04
Df Model:	8		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
constant	0.3128	1.899	0.165	0.869	-3.413	4.038
Debt/Equity	-0.0608	0.071	-0.855	0.393	-0.200	0.079
TANG	-2.0098	0.851	-2.361	0.018	-3.680	-0.340
STD	-0.0565	0.023	-2.447	0.015	-0.102	-0.011
LTD	-0.0463	0.019	-2.431	0.015	-0.084	-0.009
CashAR	0.0870	0.022	3.909	0.000	0.043	0.131
Growth	0.0487	0.007	7.456	0.000	0.036	0.062
Size	0.5093	0.143	3.568	0.000	0.229	0.789
Status-SCC	-0.4969	0.784	-0.634	0.526	-2.034	1.040

Omnibus:	1375.046	Durbin-Watson:	1.862
Prob(Omnibus):	0.000	Jarque-Bera (JB):	304743.515
Skew:	-4.109	Prob(JB):	0.00
Kurtosis:	75.176	Cond. No.	351.

1.OLS REGRESSION RESULTS (BEFORE FINANCIAL CRISIS)

Dep. Variable:	ROE	R-squared:	0.136
Model:	OLS	Adj. R-squared:	0.131
Method:	Least Squares	F-statistic:	27.01
Date:	Tue, 30 Jul 2019	Prob (F-statistic):	3.65e-39
Time:	07:37:05	Log-Likelihood:	-6625.3
No. Observations:	1386	AIC:	1.327e+04
Df Residuals:	1377	BIC:	1.332e+04
Df Model:	8		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
constant	9.2364	3.948	2.340	0.019	1.493	16.980
Debt/Equity	0.2226	0.148	1.506	0.132	-0.067	0.513
TANG	-9.5366	1.770	-5.389	0.000	-13.008	-6.065
STD	-0.0779	0.048	-1.622	0.105	-0.172	0.016
LTD	-0.2618	0.040	-6.605	0.000	-0.340	-0.184
CashAR	0.0298	0.046	0.644	0.520	-0.061	0.121
Growth	0.1292	0.014	9.518	0.000	0.103	0.156
Size	0.7749	0.297	2.612	0.009	0.193	1.357
Status-SCC	-2.9264	1.629	-1.797	0.073	-6.122	0.269

Omnibus:	729.661	Durbin-Watson:	1.819
Prob(Omnibus):	0.000	Jarque-Bera (JB):	79466.948
Skew:	-1.477	Prob(JB):	0.00
Kurtosis:	39.977	Cond. No.	351.

=== Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

4.5.1 Regression Analysis Before Financial Crisis

1) The impact of capital structure on pre-tax ROA

$$Y(\text{Pre-tax ROA}) = 0.3128 - 0.0608D/E - 2.0098TANG - 0.0565STD - 0.0463LTD + 0.0870CashAR + 0.0487Grw + 0.5093size - 0.4969SCC$$

The multiple regression models indicate that debt to equity ratio, tangibility ratio, short-term debt ratio, long-term debt ratio, cash plus account receivable ratio, growth ratio and size ratio explain the variation in pre-tax return on assets (ROA). From the table 11 it shows the regression analysis based on pre-tax return on assets before financial crisis period.

It found that the F-statistic is 16.15 with the significant p-value hence it suggest that the model is appropriate for further analysis. The R-square is low indicates that about 8.6 percent of the variance in the pre-tax return on assets was explained by the six independent variables and one control variables for the period before financial crisis. Such findings indicate that many other factors that can influence the impact of capital structure on corporate performance. The Durbin Watson statistics was 1.862 that was close to two, indicating that the correlation of the residual did not appear to be a problem.

The coefficient of tangibility ratio, short-term debt (STD) ratio and long-term debt (LTD) ratio are negatively statistical significant impact to pre-tax return on assets (pre-tax ROA). This result consistent with study by Shambor (2017) on 346 oil and gas firms and Deesomsak et al., (2004) study on PLC in Malaysia and Thailand that found leverage ratio (STD and LTD) have negatively significant with profitability before financial crisis period.

However, cash plus account receivables ratio and growth ratio coefficient is positive statistically significant impact to pre-tax ROA. In addition, the influential control variables, size ratio have positively impact to the pre-tax ROA.

The most importantly it shows that SCC does not have any significant impact on pre-tax ROA before financial crisis period. Therefore the result do not reject Ho,

the null hypothesis, $\mathbf{H_{BFC,}}$ $\mathbf{H_{0,ROA}}$ that stated SCC do not have any significant impact on Pre-tax ROA before financial crisis period.

2) The impact of capital structure on ROE

$$Y(ROE) = 9.2364 + 0.2226D/E - 9.5366TANG - 0.0779STD - 0.2618LTD + 0.0298CashAR + 0.1292Grw + 0.7749size - 2.9264SCC$$

The multiple regression models indicate that debt to equity (D/E) ratio, tangibility (TANG) ratio, short-term debt (STD) ratio, long-term debt (LTD) ratio, cash plus account receivable (CashAR) ratio, growth (GRW) ratio and size (SIZE) ratio explain the variation in return on equity (ROE). From table 11, it shows the regression analysis based on return on equity (ROE) before financial crisis period.

It found that the F-statistic is 27.01 with the significant p-value hence it suggest that the model is appropriate for further analysis. The R-square is indicates that about 13.6 percent of the variance in the return on equity was explained by the six independent variables and one control variables for the period before financial crisis. Such findings indicate that many other factors that can influence the impact of capital structure on corporate performance. R-square based on ROE as dependent variable is higher than another corporate performance proxy, pre-tax ROA. The Durbin Watson statistics was 1.819 that was close to two, indicating that the correlation of the residual did not appear to be a problem.

The coefficient of tangibility ratio, short-term debt ratio and long-term debt ratio are negatively statistical significant impact to return on equity (ROE). However, growth ratio coefficient is positive statistically significant impact to ROE. The influential control variables, size ratio shows positively affect to ROE.

The most important the result shows that NSCC's corporate performance by ROE is higher than SCC. In addition, this result rejects the null hypothesis $\mathbf{H_{BFC,}}$ $\mathbf{H_{0,ROE}}$ that stated there is no impact on ROE before financial crisis period for SCC. It shows that SCC has impact negatively significant on ROE before financial crisis period. It shows that SCC's corporate performance, which ROE is lower than NSCC by -2.9264 times.

Table 12: Regression Analysis during Financial Crisis Period

2.OLS REGRESSION RESULTS (DURING FINANCIAL CRISIS)

Dep. Variable:	Pretax ROA	R-squared:	0.099
Model:	OLS	Adj. R-squared:	0.091
Method:	Least Squares	F-statistic:	12.61
Date:	Tue, 30 Jul 2019	Prob (F-statistic):	2.82e-17
Time:	07:38:46	Log-Likelihood:	-3600.5
No. Observations:	924	AIC:	7219.
Df Residuals:	915	BIC:	7262.
Df Model:	8	Covariance Type:	nonrobust

	coef	std err	t	P>|t|	[0.025	0.975]
constant	0.5463	2.006	0.272	0.785	-3.390	4.483
Debt/Equity	-0.3259	0.107	-3.039	0.002	-0.536	-0.115
TANG	-3.0717	0.989	-3.107	0.002	-5.012	-1.132
STD	-0.0624	0.019	-3.242	0.001	-0.100	-0.025
LTD	-0.0176	0.031	-0.567	0.571	-0.079	0.043
CashAR	0.0810	0.026	3.166	0.002	0.031	0.131
Growth	0.0389	0.007	5.299	0.000	0.025	0.053
Size	0.4247	0.149	2.852	0.004	0.132	0.717
Status-SCC	1.0650	0.813	1.310	0.190	-0.530	2.660

Omnibus:	375.327	Durbin-Watson:	1.977
Prob(Omnibus):	0.000	Jarque-Bera (JB):	8627.206
Skew:	-1.304	Prob(JB):	0.00
Kurtosis:	17.740	Cond. No.	295.

2.OLS REGRESSION RESULTS (DURING FINANCIAL CRISIS)

Dep. Variable:	ROE	R-squared:	0.207
Model:	OLS	Adj. R-squared:	0.200
Method:	Least Squares	F-statistic:	29.92
Date:	Tue, 30 Jul 2019	Prob (F-statistic):	9.84e-42
Time:	07:39:25	Log-Likelihood:	-4194.4
No. Observations:	924	AIC:	8407.
Df Residuals:	915	BIC:	8450.
Df Model:	8		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
constant	-0.0174	3.815	-0.005	0.996	-7.504	7.469
Debt/Equity	-2.6215	0.204	-12.852	0.000	-3.022	-2.221
TANG	-3.8140	1.880	-2.029	0.043	-7.504	-0.124
STD	-0.1231	0.037	-3.365	0.001	-0.195	-0.051
LTD	0.0933	0.059	1.579	0.115	-0.023	0.209
CashAR	0.1433	0.049	2.946	0.003	0.048	0.239
Growth	0.0600	0.014	4.292	0.000	0.033	0.087
Size	0.6290	0.283	2.221	0.027	0.073	1.185
Status-SCC	1.2643	1.546	0.818	0.414	-1.770	4.298

Omnibus:	611.880	Durbin-Watson:	1.844
Prob(Omnibus):	0.000	Jarque-Bera (JB):	15655.903
Skew:	-2.607	Prob(JB):	0.00
Kurtosis:	22.480	Cond. No.	295.

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

4.5.2 Regression Analysis During Financial Crisis Period

1) The impact of capital structure on pre-tax ROA

Y(Pre-tax ROA) =0.5463 - 0.3259D/E - 3.0717TANG - 0.0624STD - 0.0176LTD + 0.0810CashAR + 0.0389Grw + 0.4247size + 1.0650SCC

The multiple regression models indicate that debt to equity (D/E) ratio, tangibility (TANG) ratio, short-term debt (STD) ratio, long-term debt (LTD) ratio, cash plus account receivable (CashAR) ratio, growth (GRW) ratio and size (SIZE) ratio explain the variation in pre-tax return on assets. From the table 12 it shows the regression analysis based on pre-tax return on assets during financial crisis period.

It found that F-statistic is 12.61 with the significant p-value hence it suggest that the model is appropriate for further analysis. The R-square is indicates that about 9.9 percent of the variance in the pre-tax return on assets was explained by the six independent variables and one control variable for the period before financial crisis. Since R-squared describes the unique variance explained by each variable, even the small uniqueness of the data is worth to study. Such findings indicate that many other factors that can influence the impact of capital structure on corporate performance. The Durbin Watson statistics was 1.977 that was close to two, indicating that the correlation of the residual did not appear to be a problem.

The coefficient of debt to equity ratio, tangibility ratio, and short-term debt ratio are negatively statistical significant impact to pre-tax return on assets (pre-tax ROA). This finding is in agreement with Shambor (2017) and Deesomsak et al., (2004) which showed STD ratio and LTD ratio have negatively significant with profitability during financial crisis period. The same results also found by Schulz (2017) that are study on Dutch unlisted Small Medium Enterprise (SME).

However, cash plus account receivables ratio and growth ratio coefficient is positive statistically significant impact to pre-tax ROA. In addition, the influential control variables, size ratio have positively impact to the pre-tax ROA.

The null hypothesis stated $\mathbf{H_{DFC}}$, $\mathbf{H_{0,\ ROA}}$: There is no impact on corporate performance, ROA during financial crisis period for SCC . Therefore, based on table 12 the result does not reject Ho, the null hypothesis.

2) The impact of capital structure on ROE

$$Y(ROE) = -0.0174 - 2.6215D/E - 3.8140TANG - 0.1231STD + 0.0933LTD + 0.1433CashAR + 0.0600Grw + 0.6290size + 1.2643SCC$$

The multiple regression models indicate that debt to equity (D/E) ratio, tangibility (TANG) ratio, short-term debt (STD) ratio, long-term debt (LTD) ratio, cash plus account receivables (CashAR) ratio, growth (GRW) ratio and size (SIZE) ratio explain the variation in return on equity (ROE) ratio. Table 12 shows the regression analysis based on return on equity during financial crisis period.

It found that the F-statistic is 29.92 with the significant p-value hence it suggest that the model is appropriate for further analysis. The R-square is indicates that about 20.7 percent of the variance in the return on equity was explained by the six independent variables and one control variable for the period during financial crisis. Such findings indicate that many other factors that can influence the impact of capital structure on corporate performance. R-square for ROE is higher than another corporate performance proxy that is pre-tax ROA. The Durbin Watson statistics was 1.844 that was close to two, indicating that the correlation of the residual did not appear to be a problem.

The coefficient of debt to equity ratio, tangibility ratio, and short-term debt ratio are negatively statistical significant impact to return on equity (ROE) during financial crisis period. However, cash plus account receivables ratio and growth ratio coefficient is positive statistically significant impact to ROE during financial crisis period. The influential control variable, size ratio has positively impact to the ROE.

Therefore, based on table 12 the result does not reject the null hypothesis, $\mathbf{H_{DFC}}$, $\mathbf{H_{0, ROE}}$ that stated SCC does not have any significant impact on corporate performance, ROE during financial crisis period.

Table 13: Regression Analysis after Financial Crisis Period

1. OLS REGRESSION RESULTS (AFTER FINANCIAL CRISIS)

Dep. Variable:	Pretax ROA	R-squared:	0.090
Model:	OLS	Adj. R-squared:	0.085
Method:	Least Squares	F-statistic:	17.10
Date:	Tue, 30 Jul 2019	Prob (F-statistic):	2.02e-24
Time:	07:39:29	Log-Likelihood:	-5478.1
No. Observations:	1386	AIC:	1.097e+04
Df Residuals:	1377	BIC:	1.102e+04
Df Model:	8		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
constant	-2.3709	1.670	-1.420	0.156	-5.647	0.905
Debt/Equity	-0.1856	0.067	-2.768	0.006	-0.317	-0.054
TANG	-2.3289	0.486	-4.795	0.000	-3.282	-1.376
STD	-0.0260	0.017	-1.558	0.120	-0.059	0.007
LTD	-0.0181	0.021	-0.876	0.381	-0.059	0.022
CashAR	0.0345	0.020	1.714	0.087	-0.005	0.074
Growth	0.0478	0.007	6.777	0.000	0.034	0.062
Size	0.6752	0.126	5.357	0.000	0.428	0.922
Status-SCC	1.6617	0.702	2.368	0.018	0.285	3.038

Omnibus:	1209.969	Durbin-Watson:	1.965
Prob(Omnibus):	0.000	Jarque-Bera (JB):	188692.693
Skew:	-3.376	Prob(JB):	0.00
Kurtosis:	59.761	Cond. No.	265.

3.OLS REGRESSION RESULTS (AFTER FINANCIAL CRISIS)

Dep. Variable:	ROE	R-squared:	0.056
Model:	OLS	Adj. R-squared:	0.051
Method:	Least Squares	F-statistic:	10.30
Date:	Tue, 30 Jul 2019	Prob (F-statistic):	4.50e-14
Time:	07:39:30	Log-Likelihood:	-6820.3
No. Observations:	1386	AIC:	1.366e+04
Df Residuals:	1377	BIC:	1.371e+04
Df Model:	8		
Covariance Type:	nonrobust		

	coef	std err	t	P>|t|	[0.025	0.975]
constant	-10.8529	4.399	-2.467	0.014	-19.482	-2.224
Debt/Equity	-0.6379	0.177	-3.612	0.000	-0.984	-0.291
TANG	-3.2638	1.279	-2.551	0.011	-5.773	-0.754
STD	-0.0852	0.044	-1.938	0.053	-0.171	0.001
LTD	0.0589	0.055	1.080	0.280	-0.048	0.166
CashAR	0.1465	0.053	2.765	0.006	0.043	0.251
Growth	0.0931	0.019	5.014	0.000	0.057	0.130
Size	1.0568	0.332	3.183	0.001	0.406	1.708
Status	4.3171	1.848	2.336	0.020	0.691	7.943

Omnibus:	1483.907	Durbin-Watson:	1.944
Prob(Omnibus):	0.000	Jarque-Bera (JB):	147880.341
Skew:	-5.065	Prob(JB):	0.00
Kurtosis:	52.579	Cond. No.	265.

Warnings:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

4.5.3 Regression Analysis After Financial Crisis Period

1) **The impact of capital structure on pre-tax ROA**

Y(Pre-tax ROA) = -2.3709 – 0.1856D/E– 2.3289TANG - 0.0260STD - 0.0181LTD + 0.0345CashAR + 0.0478Grw + 0.6752size + 1.6617SCC

The multiple regression models indicate that debt to equity (D/E) ratio, tangibility (TANG) ratio, short-term debt (STD) ratio, long-term debt (LTD) ratio, cash plus account receivable (CashAR) ratio, growth (GRW) ratio and size (SIZE) ratio that explain the variation in pre-tax return on assets. Table 13 shows the regression analysis based on pre-tax return on assets after financial crisis period.

The first regression analysis is for the period after financial crisis. It found that the F-statistic is 17.10 with the significant p-value hence it suggest that the model is appropriate for further analysis. The R-square is low indicates that about 9.0 percent of the variance in the pre-tax return on assets was explained by the six independent variables and one control variable for the period before financial crisis. Such findings indicate that many other factors that can influence the impact of capital structure on corporate performance. The Durbin Watson statistics was 1.965 that was close to two, indicating that the correlation of the residual did not appear to be a problem.

The coefficient of debt to equity ratio and tangibility ratio, are negatively statistical significant impact to pre-tax return on assets (pre-tax ROA) after financial crisis period. Nevertheless, STD ratio and LTD ratio shows negatively insignificant with corporate performance, pre-tax ROA. This result contradict with Schulz (2017) and Shambor (2017) that found negatively significant result with corporate performance in their studies.

In addition, cash plus account receivables ratio and growth ratio coefficient is positive statistically significant impact to pre-tax ROA after financial crisis period. In addition, the influential control variable, size ratio has positively impact to the pre-tax ROA.

The most important the result show in table 13 that the null hypothesis, $\mathbf{H_{AFC}}$, $\mathbf{H_{0,\ ROA}}$: There is no impact on ROA after financial crisis period for SCC is rejected.

It shows that SCC has impact positively significant on pre-tax ROA after financial crisis period. It demonstrates that SCC's corporate performance, pre-tax ROA is higher than NSCC by 1.6617 times.

2) The impact of capital structure on ROE

Y(ROE) = -10.8529 – 0.6379debt/equity - 3.2638TANG - 0.0852STD + 0.0589LTD + 0.1465CashAR + 0.0931Grw + 1.0568size + 4.3171SCC

The multiple regression models indicate that debt to equity (D/E) ratio, tangibility (TANG) ratio, short-term debt (STD) ratio, long-term debt (LTD) ratio, cash plus account receivable (CashAR) ratio, growth (GRW) ratio and size (SIZE) ratio explain the variation in return on equity (ROE). Table 13 shows the regression analysis based on return on equity after financial crisis period.

It found that the F-statistic is 10.30 with the significant p-value hence it suggest that the model is appropriate for further analysis. The R-square is indicates that about 5.60 percent of the variance in the return on equity was explained by the six independent variables and one control variable for the period after financial crisis. Such findings indicate that many other factors that can influence the impact of capital structure on corporate performance. ROE's R-square is higher than another corporate performance proxy, pre-tax ROA. The Durbin Watson statistics was 1.944 that was close to two, indicating that the correlation of the residual did not appear to be a problem.

The coefficient of debt to equity ratio, tangibility ratio, and short-term debt ratio are negatively statistical significant impact to return on equity (ROE) after financial crisis period. This result consistant with Schulz (2017) and Shambor (2017) that found STD negatively significant result with corporate performance in their studies.

However, cash plus account receivables ratio and growth ratio coefficient is positive statistically significant impact to pre-tax ROE after financial crisis period. The influential control variable, size ratio has positively impact to the ROE.

The most important results show that SCC corporate performance by ROE is higher than NSCC. This result rejects the null hypothesis, $\mathbf{H_{AFC}}$, $\mathbf{H_{0,\ ROE}}$ that stated there is no impact on ROE after financial crisis period for SCC. SCC has impact positively significant on ROE after financial crisis period. It shows that SCC's corporate performance, ROE is higher than NSCC by 4.3171 times. Table 14 shows the summaries of multiple regression analysis result for all the financial crisis period.

Table 14: Summary of Regression Analysis Based on Financial Period

Dependent variable	**Pre-tax ROA**			**ROE**		
	BFC	**DFC**	**AFC**	**BFC**	**DFC**	**AFC**
R-Squared	8.6%	9.9%	9%	13.6%	20.7%	5.6%
Prob(F-Statistic)	5.48e-23	2.82e-17	2.02e-24	3.65e-39	9.84e-42	4.50e-14
Dummy (SCC) - coef	-0.4969 (not significant)	1.0650 (not significant)	1.6617 (Significant)	-2.9264 (Significant)	1.2643 (not significant)	4.3171 (Significant)
Debt/Equity	Not significant	Significant (-)	Significant (-)	Not Significant	Significant (-)	Significant (-)
Tangibility (TANG)	Significant (-)	Significant (-)	Significant (-)	Significant (-)	Significant (-)	Significant (-)
Short Term Debt (STD)	Significant (-)	Significant (-)	Not Significant	Significant (-)	Significant (-)	Significant (-)
Long Term Debt (LTD)	Significant (-)	Not Significant	Not significant	Significant (-)	Not Significant	Not significant
Cash + Acc. Receivable (CashAR)	Significant (+)	Significant (+)	Significant (+)	Not significant	Significant (+)	Significant (+)
Growth	Significant (+)	Significant (+)	Significant (+)	Significant (+)	Significant (+)	Significant (+)
Size	Significant (+)	Significant (+)	Significant (+)	Significant (+)	Significant (+)	Significant (+)

CONCLUSIONS AND RECOMMENDATIONS

The discussions have been made based on the previous analyzed data and findings that are provided in Chapter 4. Therefore, this chapter presents the overall view of the study and the conclusion drawn from the analyses. This study investigates the impact of capital structure on corporate performance particularly during financial crisis. This chapter will give the summary of the key findings in this study, and then follow by discussion the implication of the study, limitation of study and finally recommendations for the future study.

According to Thomson Reuter's 2018 Islamic Finance Development Report that in year 2017, Shariah compliant assets have been reached a total value of $2.44 trillion. This value expected to growth not less than $3.8 trillion by 2022 with the expected compound annual growth rate of 9.5%. The main objective of this study is to investigate the impact of capital structure on corporate performance during financial crisis. It is important to study until what extends to the capital structure of shariah compliant companies can be different from non-shariah compliant companies.

The descriptive statistics analysis in this study found that that corporate performance of Shariah compliant companies (SCC) is higher than non-shariah compliant companies (NSCC) during financial crisis and after financial crisis for both proxies, which are pre-tax return on assets (Pre-tax ROA) and return on equity (ROE).

Debt to equity (D/E) ratio, short-term debt (STD) ratio and long-term debt (LTD) ratio shows that SCC have lower ratio through out the financial period, which are before, during and after financial crisis. These results are expected due to the benchmarks that are set by index provider during quantitative or second screening process. SCC need to follow all the time the benchmark that are set by the index provider in order to be listed in Shariah index and getting the shariah status. Due to this reason we can observed that SCC always have lower ratio compare to NSCC. In addition, lower ratio means the company are doing better because high leverage ratio or debt financing ratio contribute to the high risk of solvency and instability of the company.

Tangibility ratio for SCC is higher than NSCC before, during and after financial crisis. This ratio becomes more important after financial crisis period. It is because it use as measurement for bank viability and indicate the company's collateral level. As a result, SCC with the higher tangibility ratio can issue more debt financing. It become more secure in case of bankruptcy, company can sales their tangibility assets in order to pay the debt. Added to that, SCC is required to have tangible assets as collateral in order to raise their debt financing. This is one of the reasons why SCC are having higher tangibility ratio than NSCC before, during and after financial crisis.

Cash plus account receivable ratio is lower than NSCC before, during and after financial crisis. Even though high liquidity can attract more lender and manager are easily to make investment however there have high risk of bankruptcy and high risk of non-payment. In addition, lower liquidity can contribute to the lower agency problem. During the normal period, lower CashAR ratio can give disadvantage to the company because they can lost their chance to make the investment, however during financial crisis period lower CashAR ratio are giving advantage because lower risk of non collectable from receivables and lower financial distress.

Growth ratio shows before and during financial crisis period NSCC have higher ratio than SCC. However, after financial crisis period, SCC shows higher ratio than NSCC. It indicates that SCC growth better after financial crisis period.

The second major finding from multiple regression analysis based on pre-tax ROA as a first proxy for corporate performance found that all the independent variables are significant except for debt to equity (D/E) ratio before financial crisis period. However, during financial crisis period, only long-term debt (LTD) ratios not have any significant and after financial crisis period both short-term debt and long-term debt do not have any significant. Shariah compliant companies show the significant level only after financial crisis period. The impact of capital structure of SCC on pre-tax ROA is 1.6617 times higher than NSCC after financial crisis period.

Second proxy of corporate performance is return on equity (ROE). All the independent variables are significant with the ROE except for debt to equity (D/E) ratio and cash plus account receivables (CashAR) ratio before financial crisis period, while long-term debt (LTD) ratio during and after financial crisis period. SCC significantly with ROE before financial crisis and it shows that the impact on capital structure of SCC on ROE is 2.9264 times lower than NSCC. Besides, after financial

crisis period, the impact of capital structure for SCC on ROE is 4.3171 times higher than NSCC.

It can conclude that SCC's corporate performance either pre-tax ROA or ROE giving the impact positively significant with capital structure after financial crisis. It shows that corporate performance of SCC better than NSCC after financial crisis period.

The major contribution of this study is that it provides an insight on the impact of financial crisis on capital structure decisions particularly for SCC and NSCC. In addition, this study discovers the financing patterns that are used by the firms either SCC or NSCC particularly during financial crisis.

Secondly, the results from this study contribute to the better understanding about impact of capital structure to corporate performance particularly during financial crisis. In addition, the finding of this study offers knowledge to the regulatory bodies and related government agencies to come out with the guidelines and framework regarding shariah compliant status. Therefore, in order to set up with the new regulatory and guidelines, these agencies need to understand the needed of investors and the characteristics of shariah compliant company itself in order to develop new guidelines to attract more investors. Such cases in Malaysia, the government give incentive to the new shariah compliant companies with five years tax exemption. Other, in UK and France they have amended their tax structure for Islamic finance industry including shariah compliant companies. In addition, some other international financial centres also added Islamic component to accommodate Islamic finance.

Other implication of this study includes the provider of information to the management to provide an insight on the impact on financial crisis of 2008-2009 on capital structure of the companies particularly on Shariah compliant companies. In addition, this study help the management to identify the financing alternatives (short-term debt, long term debt or equity) that are used by companies in operating during financial crisis period. Therefore, the management can evaluate and observe the different trend and significant change on the ratio before, during and after financial crisis for Shariah compliant companies and non-shariah compliant companies.

Besides that, one of the most important characteristic of Shariah compliant companies is different tax system. In Islam, the tax system known as 'zakat' and the

rate of zakat is fixed at 2.5 percent regardless how much the profit that companies gain. Therefore, for further research may include the study on country that are using zakat system and making comparison with the country that using tax system. Therefore, it would be interesting to assess the effects and significant differences using zakat and tax system.

Every country might have different period of financial crisis. Even though all these countries under Southeast Asia, however each of the country slightly have different impact period of financial crisis. Such as in Vietnam, Trinh and Phuong (2016) concluded the period of financial crisis was from year 2009 until year 2010. Therefore, it is recommended that future research be undertaken this in this issue.

It would be more beneficial to include country factors, Gross Domestic Product (GDP) and inflation rate for future research. It is because these kinds of factor can impact the company in deciding their capital structure financing decision. In addition, during financial crisis these factors will affect to the country and indirectly to the companies also. Therefore, it will be great if future research can include and examine these factors closely.

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