

## CHAPTER I :INTRODUCTION

### 1.1 Overview

The purpose of this chapter is to give an introduction to the research topic and key fundamental frameworks that lay the foundation of the study. This chapter also covers the problem statement, research questions, research objectives, the scope of the research as well as the structure of the thesis.

### 1.2 Background of Study

The concept of risk is an important area of discourse in many aspects of our lives. The categorization of risk into systematic and unsystematic risks allows better autonomy into modelling financial risks. Beta (systematic risk), which is the focus of this research, allows for unified parameters that fairly and accurately outline the level of risk businesses in Malaysia are exposed to. Essentially, due to the risk averse nature of investors, a great awareness on the beta will allow for clearer information on the risks associated with investments, as well as beta and return relationships as stipulated by Kumar, Aleemi & Ali (2015). This is due to the fact that beta accounts for only risk that spreads across all businesses and is therefore used to estimate beta (Nizam, Afif & Faizal, 2020). While beta was commonly understood and studied in several educational disciplines, it was not integrated into finance up until Markowitz (1952) made a ground breaking publication which gained significant attention. This became the start of a mathematical construct that breaches the informative gap between returns of an asset against the beta, and captioned as the Capital Asset Pricing Model (CAPM).The variance theory of Markowitz (1952) combines both upside and downside returns and

was termed as the Mean-Variance Model. In the same year, Roy (1952) came up with the mean Semi Variance which clearly differentiates between upsides and downsides. This model was referred to as the Mean semi-variance Model. This approach became known as the safety first rule as demonstrated by Tahir, Abbas, Sargana, Ayub & Saeed (2013), and was first introduced in asset pricing by Hogan & Warren (1974). The CAPM became a crucial financial tool which was later developed by Sharpe (1964) and Lintner (1965). The CAPM formula is given by:

$$R_i = R_f + \beta(R_M - R_f) \quad (1.1)$$

Where

$R_i$ : Expected return on  $i^{th}$  Asset,

$R_f$  : Risk free rate,

$\beta$  : Systematic Risk,

$R_M$  : Return on the market,

$(R_M - R_f)$  : Market risk premium.

The CAPM allows for the comparison of beta given the returns of assets. This simple fact gives leverage to the research for exploring downside beta and performance in Shariah-compliant stock returns as well as their conventional counterparts.

Collectively, traits of both portfolios can be found in almost all financial sectors. A good example is the money market. The money market tries as much as possible to adopt a risk based capital allocation structure for liquidity management. Therefore, players are constantly making innovations to ensure liquidity risks are minimized through multiple interventions. This includes the use of asset backed commercial papers, which offers short term investment opportunities and minimizing potential market beta. Furthermore, there are also other financial instruments that tackles the

issue of liquidity risks. These includes the Repurchase Agreements, were securities can be repurchased with interest by a principal, from a target company/institution that urgently needed funds to finance an operation. Other means include certificates of deposits, banker's acceptance and the effectiveness of the central bank in its active and diligent strategies in buying or selling securities in order to regulate the interest rates. With all the moving parts that compose the money market, there is a fine line that separates the operations of Shariah-compliant investments in contrast to their conventional counterparts. Shariah-compliant businesses fundamentally differ from their conventional counterparts on certain business principles. Focusing on Islamic money markets as an example, there has to be adherence to Shariah-compliant contracts such as Mudarabah, Murabahah and Wakalah. While conventional money markets only work along the principles of debt and interest generating contracts. It is also important to note that Islamic money markets use different financial instruments that safeguard its fundamental principles of trading securities, such as avoidance of interest, gambling and the abstinence from toxic or pornographic investments. As reported by Orzano & Welling (2019), "Islamic indices are subsets of conventional benchmarks that include only companies that pass rules-based screens for Shariah-compliance". Ultimately, a good additional take away is that Islamic markets have a wider pool of potential consumers while with conventional markets, Muslim investors are reluctant to participate due to its construct. However, conventional stocks in general are considered to be more diversified by virtue of its tradable which are prohibited in a Shariah-compliant framework as portrayed by Charles, Darné & Pop (2015) and Saiti & Noordin (2018).

A significant focus of this research involves computing downside beta for 50 Shariah-compliant stocks and 50 conventional stocks in Malaysia. This was done

through calculating downside beta for the individual companies as two separate portfolios consisting of Shariah-compliant portfolio and a conventional portfolio. The explored methods were Historical Volatility (HV), the Exponentially Weighted Moving Average (EWMA) and the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) methods. The EWMA is a less lenient method for measuring downside beta as opposed to the HV, which assigns equal weight to all past returns. The EWMA overcomes this leniency by designating higher weights to more recent returns. However, the GARCH method builds on the EWMA by nudging the beta towards the long run variance. According to Bhowmik & Wang (2020), GARCH Models is one of the many models used in the computation of downside beta, however, other methods like the VECM, Johansen models, VECM are widely adopted too. The framework of this research explores both market beta as well as beta for Shariah-compliant stocks and their conventional counterparts. The research further explores the performance of these two portfolios, building on earlier publications such as those of Trabelsi, Bahloul & Mathlouthi (2020), Aarif, Rafiq & Wahid (2020), Bayram & Abdullah Othman (2019), Rizvi & Arshad (2018), Rashid & Mehmood (2018) and Dewandaru, Bacha, Masih & Masih R. (2015). The performance is achieved from the GARCH (1,1) downside beta scores. The robustness of the findings for beta and performance was explored through downside market beta and Sortino ratio (using EWMA downside beta scores) respectively.

### **1.3 Problem Statement**

There is great merit in paying careful attention to past historical events for making future judgments. Any evolutionary process with high accuracy in utilizing historical data can make outstanding future predictions with reasonable uncertainties.

The field of finance is no exception. Economists argue that a good grasp of financial historical data should avert any major economic meltdowns because surveyed predictions will surface ahead of time and hence the aversion of a looming financial crises before it strikes. Surprisingly, or perhaps not, records have, and still continue to register devastating financial crisis, with the Corona Virus Disease-19 (COVID-19) pandemic been the most recent. This is just a decade after the major financial depression of 2008. Therefore, it is evident that the various financial frameworks devised, adopted and practiced are susceptible to financial shocks. As a result, there is massive appetite in investors to get more robust shock strategies in preserving short to long term investments. And consequently, measures of beta as well as performance of existing financial models is hugely desired. Not to mention, there is limited literature on downside beta for businesses globally, more so for Malaysia.

Furthermore, with a Muslim population of about 1.9 billion people worldwide (World Population Review, 2019), there is a reasonably large and fast growing market share for Shariah-compliant companies. While the population does not directly translate to the market share of Shariah-compliant businesses, Islamic or Shariah-compliant investors are usually reluctant to partake in investing on contemporary/conventional businesses by virtue of a potential conflict of interest with their religion. However, Shariah-compliant market is open to any investor, regardless of their underlying religious beliefs. Moreover, in situations where Shariah-compliant business show better resilience and higher reward as opposed to their conventional counterparts, investors in both separate camps are likely to pool together as a single unit, under the Shariah-compliant umbrella. This is possible in principle. However, practically there needs to be screening from an oversight Shariah-compliant body mandated to handle such issues.

Regardless, the vast majority of financial models are centered on Shariah-compliant

framework and the conventional framework. However, there is still no consensus in establishing which framework offers a better alternative to investors as alluded to by Trabelsi et al. (2020).

Additionally, given the period under observation for this research, it is illustrious to keenly study the characteristics of both portfolios after been subjected to financial turmoil. Consequently, investors are guided on preferable financial models with respect to beta and performance. Essentially, it serves as a measure to the best post recovery business model hindsight financial crises.

#### **1.4 Research Aim and Objectives**

The objectives of the study are:

1. To model Malaysia's market behavior with respect to downside beta from 2015 to 2020.
2. To compare the downside beta between Shariah-compliant stocks and conventional stocks.
3. To compare the downside beta to return performance between Shariah-compliant stocks and conventional stocks.

#### **1.5 Importance of the Study**

The study is expected to be a complete guide for startups, established businesses, individual investors and institutional investors who are indecisive of investing in either Shariah-compliant stocks or conventional stocks, or perhaps both. As institutional investors are expected to safeguard the wealth of their clients, this research acts as a leverage on educating about firms' beta expectations with respect to the two distinct portfolios. This is not only limited to institutional investors but so is it also important for trust fund managers, hedge fund managers and other similar positions that cares

about protection of wealth. The research further serves as a guide for investors in Malaysia to have a good exposure on the nature of downside beta and return of their investments.

While the research dwells on the volatile nature of Malaysia's emerging market, Sharia compliant business have become a major player in the market place. According to Hassan (2017), the relative dominance of Shariah-compliant stocks is still prevalent to date. The study investigated whether downside beta plays a role in the growing Shariah-compliant market in Malaysia and whether or not it could be endorsed over a conventional firm.

## **1.6 Scope of the Study**

The study is focused at computing downside beta for Shariah-compliant and conventional firms in Malaysia. The study is restricted to only downside beta and the two specified asset classes. Furthermore, the duration of the study only covers from 1<sup>st</sup> of January 2015 to the 1<sup>st</sup> of January 2020. This was a relatively a stable period due to the fact that there were no major economic events. It was essential to model during this period because it allows for easier downside beta and performance comparisons across multiple regions given the fact that occurrences of crisis are relatively rare.

## **1.7 Thesis Outline**

The research is split into 5 chapters.

**Chapter 1:** Highlights the overview of the research, the problem statement and the research objectives. It further specified the limitations of the study and clearly demonstrates the scope of the research.

**Chapter 2:** Extensively reviewed previous findings and methodologies that apply to this research. Additionally, this chapter covers the implications of previous works and illustrates their significance in the models used for this research.

**Chapter 3:** This chapter outlines the methodology of the research. Moreover, it outlines the approach used in responding the objectives of the research.

**Chapter 4:** Covers the findings of the research. This chapter charts the results of the research, allowing for objective conclusions to be drawn.

**Chapter 5:** This chapter details the discussions of the research findings, the recommendations as well as the conclusions drawn from the research.