CHAPTER FOUR

RESEARCH METHODOLOGY

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4.1 INTRODUCTION

This chapter discusses the methodology used in the present study. It starts by elaborating the theoretical framework on the stock market-growth nexus. The discussions in the chapter then explain the data, variables and methods employed in the study. A detailed clarification on the data analysis as well as on the process of study is also explained. Besides, it introduces and presents the model and hypothesis of each variable. In the last section, there is a short conclusion about this chapter.

4.2 THEORETICAL FRAMEWORK

4.2.1 The Role of Stock Markets in Economic Growth

In economics, a chronologically continued debate among the academics has already taken place about the relationship between the financial intermediaries and economic growth. Financial intermediaries encompass two types of institutions – bank based and market based. There are some theoretical schools with their diverse explanations and interpretations about the correlation between financial institutions and economic growth.

According to classical, traditional growth theorists, there is no significant relationship and nexus between the stock market and economic growth. According to their views, that is because of the existence of two things rate effect and level effect. From the neo-classical growth theorists, there are three different interpretations about the interconnection between stock markets and economic growth. First and foremost, capital accumulation in stock markets enhances the productive capacity. This enhanced production capacity induces economic growth in any country. Secondly, expected capital savings and net investment are increased through strong and efficient stock markets. These savings and investments, through capital markets, thus result in economic growth in any economy. Thirdly, after establishing a strong capital market, it is observed that, both postponing unnecessary consumption and a high level of savings take place in any country. Ultimately, these two lead to an increased allocation of capital for secondary investments. Thus, economic growth is related to stock markets. Here economic growth is the effect where strong and efficient financial sector is the cause.

A strong, efficient stock market has a great role in enhancing economic growth of any economy. It expands and induces investment ventures through allocating funds for potential and productive ideas of entrepreneurs. This in turn enlarges economic arena, organizes idle savings, provides finance, assists to modify risks, accelerates the exchange of services and products and mobilizes modes of production (Caporale et al., 2004) and (Mishkin, 2002). Stock market enhances the liquidity of financial capitals. It is a good determinant for the future economic activities and growth. It explains the real causal relationship between stock prices and economic growth (Shahbaz, 2008). Not only that, it produces wider investment fields and decisions, promotes new investment ideas, new entrepreneurs, motivates corporate sectors to solve their problems and assists in national and global risk diversifications.

Another school believes that there is no relationship between these two fields – stock markets and economic growth. In the view of Joseph Schumpeter, a famous economist of the present world, the long-term economic growth and development is, in fact, an inexorable outcome of technological innovations. And at the same time, financial institutions come out as a bi-product of these technological innovations and economic growth.

In the study of Spears (1992) on stock markets in Sub-Saharan Africa, the result of the observation is quite similar. After analysing these economies, he stated that, in the initial stage of development, there is a specific positive relationship between stock markets and economic growth. In this stage, stock markets along with other financial institutions accelerate economic growth in these economies.

Moreover, Camposs et al., (1999) found out another fact that government control, as a catalyst, has a strong impact on the relationship between the stock market and economic growth. In the lower level of financial freedom, in which more effective stock market and other financial institutions such as banks are under government control, stock markets have a lower role in economic growth. This fact was obtained in at least two third of the countries they studied.

There are some special advantages of stock markets in attaining economic growth in comparison with other institutions, particularly with banking sectors. Some thinkers argued that financial markets are more effective in attaining economic growth in comparison with the role of bank based institutions. Levine and Zervos, on the basis of their cross country observation, obtained that stock market has a more effective positive relationship with economic growth (Lane et al., 2003). Schumpeter is another economist who believed that the stock market, not banking sector, has a great contribution to economic growth (Ang, 2008). Although, banking sectors have an important role in economic growth, but this role is important in the initial level of financial liberalization (Bossone, 1999). For collecting private savings and intermediate those funds to enterprises in the initial level, banking has a necessary role to play. But after that phase, stock markets have a more effective role as these markets required sophisticated institutional settings and frameworks (Lane et al., 2003). The texts presented that stock markets are, in opening level, assisted by banking sector. After developing stock markets, it starts to compete with the banking sector in economic growth (Yartey, 2008).

In some cases, both stock markets and other financial intermediaries have similar roles. In the management of liquidity risks and diversification of investment risks, both stock market and banking sectors have similar roles. The return on productive activities and implementation of monitoring mechanisms, both have similar effectiveness. But in some cases, stock markets have a great contribution to accelerating economic growth. For instance, the monitoring of productive resource management, which is performed by stock markets through acquisitions and mergers. Another advantage of stock markets is its effectiveness in the area of performance, appreciation that acts like a guide for allotting resources and capitals for investment. Banks can do this as well, but to a lesser extent (Hermes & Lensink, 2013).

4.2.2 Stock Market-Growth Nexus: Relationship and Effect between Stock Market Development and Economic Growth

Linking both historical evidence and empirical studies to the role of the stock market for economic growth requires a theoretical framework (Van et al., (2006). However, the theoretical abstraction on which the discourse of economic growth has been linked with stock market development and increasing market capitalization is not susceptible outright. Attempts have been made to exhibit the causal relationship between stock market development and economic growth; that the former accelerates the latter. Thus, the general argument is that, the economic growth of countries is more or less causally connected with the development in the stock market.

Principally, a well-developed stock market should theoretically allocate capital for productive investments in an efficient manner. Simultaneously, it should increase saving by enhancing the set of financial instruments available to the savers to diversify their portfolios that eventually leads to a rise in the economic growth rate. According to Seetanah et al., (2008) and Greenwood & Smith (1997) stock market provides a significant source of investment capital at comparatively low costs offering liquidity, which is an element for economic growth. In addition, Adjasi & Biekpe (2006) believed that the presence of stock markets, promotes an efficient resource allocation and growth by mitigating the principal agent problem and reducing information asymmetry.

However, the theoretical literature has offered conflicting predictions on the role of stock development and economic growth. On one hand, Goldstein & khan (1976),Gurley & Show (1955), McKinnon (1973) and Show (1973) argued that liberalization of the financial sector by deregulating interest rate, removing selective credit control and encouraging free competition in the banking sector augment rapid economic development in these countries (Ndako, 2010). On the other hand, Lucas Jr (1998) disputed that the role of stock development in the growth process has been over exaggerated, and hence, financial development does not contribute to the long-term economic growth. Similarly, some analysts claimed that stock market has little positive impact on economic growth as they considered developing countries as "casinos" (Seetanah et al., 2008). In parallel to the above arguments, it can be concluded that the debate in the theoretical framework has three primary strands; the first opinion/view/group believed that stock markets promote long-run growth, while the second one doubts the contribution of stock markets to long-run growth. The last opinion argued financial development together with income distribution and technology have a significant effect on economic growth. Some studies have been conducted which support the first view. For instance, Obstfeld (1994) showed that the international risk sharing through internationally integrated stock markets improved resource allocation and accelerated growth. In addition, Bencivenga et al., (1996) and Levine (1991) has argued that stock market liquidity, and the ability to trade equity easily, play a key role in economic growth. Besides, Greenwood & Smith (1997) disclosed that stock markets lower the cost of mobilizing savings by facilitating investments in the most productive technologies.

In contrast, the proponents of the second view suspect the contribution of stock markets to long-run growth. For instance, Stiglitz (1985) argued that stock markets revealed information through price changes rapidly, creating a free-rider problem that decreased investors' motivations to manner costly search. The contribution of liquidity to long-term growth has been interrogated. The effort made by the traditional growth literature to explore theoretical, the relationship between financial intermediation and economic growth was not suitable. That is because it focused on a steady-state level of capital stock per worker or productivity, instead of concentrating on the rate of growth (Agarwal, 2001).

Moreover, economic growth is a complex process influenced by many factors other than the capital market development. The interdependencies between these factors make it very difficult to establish and isolate the causal relation between the capital market development and the economic growth (Brasoveanu et al., 2008). However, a recent reinforcement of interest in the nexus between stock market development and growth has been accelerated by the argument of endogenous growth models, in which growth is considered as self-sustaining (Agarwal, 2001).

For the third view - which is contradictory with the traditional growth theory which is referred to as the endogenous growth models demonstrated that the financial development, along with income distribution and technology, greatly affect economic growth performance (Caporale et al., 2004). To analyse this relationship, Greenwood & Jovanovic (1990) inserted the financial factors role in models of endogenous growth to formalize the interactions between financial markets and economic growth. However, focus on the stock markets as an instrument of economic growth is a new opening in the financial literature. In the past, its benefits had been largely ignored. However, the positive effect brought about by the stock markets got a larger consensus in the present, for instance, Pagano (1993), Sarazervos (1998) and King & Levine (1993a) all of whom overwhelmingly considered that well-operative financial intermediaries have played a significant role in economic growth (Matadeen et al., ND).

First suggestion regarding stock markets is that it can boost economic growth through efficient resource allocation. This view has been argued by King & Levine (1993a) who proposed a model in which innovative activities served as the engine of growth. The higher growth rate of productivity results from a higher rate of successful innovations. An individual might invest in projects that can be quickly, promptly liquidated in the absence of financial markets, instead of investing in assets that are more productive but financially liquid. So, stock markets can provide individuals with less risk and liquid productive investments (King & Levine, 1993).

Secondly, financial markets can influence economic growth through the information channelled. For instance, Holmström and Tirole (1993) considered that because the stock price includes performance information that cannot be extracted from the firm's current or future data, stock markets functioned as a monitor of managerial performance. It may become a target for a takeover, if there is a poorly performing management. Thus, economic growth in aggregate is the result of the firm's productivity coming from information; that is reflected in the firm's share price and the managerial incentives to build up higher productivity.

In the debate over the effect of stock market development and economic growth, there are four possibilities, as stated by Graff (1999b) regarding to the causal linkage between financial development and economic growth.

4.2.2.1 Financial Development and Economic Growth are not Causally Related

In this case, real factors cause the economic growth, while development of financial institutions induces the financial development. The modern economic development in Europe in the 17th Century could be an example of this type of relation.

4.2.2.2 Financial Development Follows Economic Growth

Economic growth causes financial institutions to develop and change; financial as well as credit markets to grow. So, financial development is demand-driven. As the growing scale of economic activities requires more and more capital (liquid and fixed), institutional increasing and pooling of funds for industry substitute for individual wealth to start up enterprises, and for retained profits for economic expansion. The current diversity of financial systems comes from the fact that different institutional arrangements can equally well play the two basic functions of any financial system: bringing together investors and savers, and selecting the most appropriate uses of investible funds. Moreover, the reasons for the choice of bank-based vs. capital market-based financial systems are outside the scope of economics (e.g. historical, socio-psychological, and administrative).

This view is explicitly addressed by some modern institutionalizes (and other believers in the famous COASE-theorem), and implicitly by many other economists (Graff, 1999).

4.2.2.3 Financial Development is A cause of Economic Growth

For the third point, there are two possibilities as Thornton (1995) stated that financial development is a precondition for economic growth and its actively encourages economic growth. Matured financial systems can cause high and sustained rates of economic growth, provided that there are no real impediments to economic growth (Rousseau & Sylla, 2003).

4.2.2.4 Financial Development is an Impediment to Economic Growth

The last view considers the financial system as inherently unstable. In this case, rather than emphasising on the efficient function of the financial system, the main focus lies on possibly destabilizing effects of financial overtrading and crises. This is done through pointing out similar logic to the previous possibility of having a causality that runs from financial development to real development (Stiglitz, 2002). However, Demirguc-Kunt & Levine (1996) offered a completely different view on the stock market and economic growth, observing some channels through which liquidity can rather deter growth.

The theoretical nexus between stock market development and economic growth is based on the perceived benefits of financial market, particularly, to get the liquidity to finance investment projects of the specific mechanisms. Liquidity provides many opportunities for investors to differentiate and choose between alternatives in the short and long term, which stimulates investment and reduces the cost of capital, and ultimately contributes in supporting economic growth. Caporale et al., (2004) considered economic growth and financial development as functions of stock market development. As an example, they offer at least a plausible hypothesis that stock markets cause both economic growth and financial development. They denoted x and y as financial development and economic growth respectively. In addition, they assumed that previous bivariate tests indicate some causal relationship between the two variables. A proposed third variable, (say GDP for the moment) is omitted from the model which was used as the basis for the previous tests, but could be causally related to x and y in a number of ways. They concluded that if w does not cause either x or y, then there is no problem incurred and the previously drawn inferences are valid.

Also, in similar studies conducted by Atje & Jovanovic (1993); Saeazervos (1998); Rousseau & Wachtel (2000) and Beck & Levine (2004), it was found that stock market development is significantly correlated with real GDP per capita growth rate. More importantly, the study found that stock market liquidity and banking development could predict the future the economy's growth rate when they both enter the growth regression. They concluded, "stock markets provide different services from those provided by banks". These studies are also consistent with the argument made by Demirguc-Kunt (1996) that mentioned that "stock markets can give a big boost to economic development."

Besides the above mentioned studies/findings, there are also other theoretical postulations suggesting the difference in the magnitude of the effect of stock market development on economic growth varies according to the economic development; country's level with a larger effect in less developed economies (Filer et al., 2000). In addition, stock markets can affect economic growth when they are internationally combined. This enables greater economic risk sharing. Since high return projects also tend to be relatively risky, stock markets that facilitate risk diversification encourages a shift to higher-return projects (Obstfeld, 1994).

The resulting impact is a boost in the economy that will lead to growth via the shifting of society's savings to higher-return investments. However, there is no attempt to differentiate the roles played by various financial markets, such as, bond markets, banks, insurance companies, and stock markets in the linkage between financial markets and economic growth. In the previous studies, insurance companies and banks would usually be regarded as intermediaries rather than markets. Also, the stock market's role in economic growth and the channel identification via which stock markets affect growth have been ignored.

4.2.3 Economic Growth

Before embarking on the relationship between economic growth and financial intermediaries, it should have to explore the very notion 'Economic Growth.' It is a hard task to come forward with a specific definition of the term economic growth. It is an 'All-touch' concept. Because of its comprehensive range, theorists have been facing problems in defining it clearly. It considers as one of the most thorough and most important phenomena of modern welfare states. In his study Habermas (1981) considers economic growth as the lubricant of the modern welfare state. Economists have come forward with their enormous interest about this notion since 1950 (de Bruyn, 2000).

In his study Kuznets (1973) defined economic growth as "long term rise in its capacity based on advancing technology and the institutional and ideological adjustment that it demands". Theorists defined economic development from different points of views. However, a common ingredient is the increase in overall production. Principally, economic growth denotes the increase of overall productivity of the economy, or nation, the rise of its national per capita income and living standard. So the notion means an increase in income level (Jean & Arche, 2008). Economic growth means the upturn of market values of any services or produced goods in any economy. The rise of its GDP in any given time can measure any growth of anytime, in general, in annual basis (IMF, 2012). The notion of economic growth, refers a long-term increase in production, which takes place for structural mechanisms like factor accumulation and technological innovations.

4.2.3.1 Importance of Economic Growth

Economic growth is an important precondition for development. Without economic growth, it is quite difficult to reduce poverty, both relative and absolute. Particularly in developing countries, economic growth is a must for combating poverty in mass level. Overseas Development Institute (ODI) conducted an empirical study on the impact of economic growth on reducing poverty. The study reported that economic growth has a strong positive link and role in reducing poverty. Of the 24 cases explored, in 18 cases poverty was combated by economic growth (Melamed et al., 2011). For the rapid growth, in developing countries, people have their required purchasing power, and then their life-standard is increasing day by day. They can afford their necessary calories and their basic needs. From both PPP approach and basic needs approach, economic growth is creating such an environment where poverty is decreasing.

Economic growth has a great importance in living standards of the country. In any country, where the economy is growing day by day, public living standards increased. In this economy, citizens have more money to afford more product and services and thus to develop their lifestyle. Without economic growth, the people do not get enough money to take necessary products and services. They have to choose something cheaper than those of their necessity. So in developing living standards with standard and affluent products and services, economic growth is important.

Economic growth is, in fact, quite important in generating employment. Economic growth determines the employment capacity of the economy. If any economy rises properly, in a planned way, business sector of that economy needs more personnel to cope up with the rising production and service sectors. To meet the increased number of goods and services, industries and business organizations need more and more people. For factories, to meet with market demand and to ensure high production rate, more workers are necessary. Retailers face such a condition where they need more people to run their business; as more people will engage themselves in shopping, because they are richer than their previous condition. All these things happened as an outcome of economic growth.

Without having economic development and economic growth, high and severe employment crisis may take place. In that situation, every business enterprise and companies, to cope up with low profit of the business and low demand of products, have to minimize expenditure and overcome losses. In this situation, just for overcoming losses and ensuring highest possible profit, enterprises terminate their unnecessary labours, so that they can save money from salaries and wages of these people. As a result, more people are asked to leave their offices. Consequently, unemployment takes place. In any low level economy, without having any growth, when consumers cannot afford to earn money to buy necessary products, then market demand for both services and goods will fall down. As a result of this fall down on market demand, a businessman and industrialist will be bound to decrease their number of productions of any goods or even will be bound to stop any product. As a result, some industries will be compelled to stop their production completely. For this reason, the engaged employees in these industries will lose their jobs, and the severe unemployment crisis will take place.

On the contrary, when a country can achieve economic growth, when its economy grows positively, it can draw attention from more investors and then massive entrepreneurship may take place. As an inexorable outcome of this more investment, more industries and business ventures, and hence more employment generation will take place, that is because these business institutions need more people and, therefore, create new job vacancies.

So these are the relationship between economic growth and unemployment. It can be mentioned that economic growth is a determinant of employment generation. When an economy rises and is managed carefully in an appropriate manner, economic growth ensures and allocates enough funds and resources for the necessary public supports as health and sanitation, education, infrastructural development and social safety-nets. Through this whole process, living standards of citizens increase. At the end of the day, for economic growth, an increase of social spending takes place with no extra charges, VATs or taxes to the government from the citizen's pocket.

Economic growth drives a society in a continuous process of productive mechanisms. It has a very common motivation that 'the more we grow, the better our society becomes.' For this motivational philosophy, society is run in a continuous production process. As a result, new advanced technological innovations take place, and new large-scale industrialization drives the society to a great future where sophistication takes place. It will continue with the time without having any pause.

Finally, economic growth is important, as it generates a strong basement for the upcoming generation of society. It generates a high degree of advancement and development in all aspects of social life for the future generations. It generates numerous beneficial impacts and provides solutions for a lot of economic challenges (Melamed et al., 2011).

Economic growth creates greater wealth for the nation. It has a strong relation with the prosperity of a nation. When the economic growth takes place in the country, then that country becomes a rich country. In any country, in its economy, when it can produce more goods and services for its citizens, income of the citizen rises. As a result, people having more money can afford more goods and services. This increased demand for goods and services induces the businessmen to produce more and this high level of production results in the greater wealth for that nation. However, in the opposite, a country becomes poorer, without having positive economic growth. It reduces its services and production for its citizens, as a result, that economy can generate less income for its citizen. It becomes poorer and poorer.

Economic growth increases the efficiency of any country in utilizing its scarce resources as well. It helps to develop effective management of its limited resources so that it can come out with the highest possible profit by prudent utilization.

4.2.3.2 Negative Economic Growth and Its Role

Economic growth has a dark side also. There are some notable negative outcomes in the development of living standards. Firstly, since economic growth relies on the allocation and sharing of greater profits, it has a common propensity to skirt round the poorest citizen.

Secondly, economic growth has some common preconditions, which have a strong conflicting situation with environmental issues such as global warming. Economic growth causes pollution in many ways like massive industrialization and dusts from these sectors pollutes. The economic growth is subject to such a system where it increases the standard of life up to a specific level of development. After reaching the development specific point, economic growth takes an anti-climax turn. At that stage, it makes obstacles for sustainable living standard (Beddoe et al., 2009).

Thirdly, regarding the environment, critics like environmentalists and economists come forward with their arguments and convincing facts that, there are events and agendas of economic growth implementations where it caused a severe collapse of natural and biological resources and diversities (Meadows et al., 2004).

Besides these, economic growth has a negative impact on global warming. The economic growth has a strong positive connection with carbon emission; particularly in more developed countries this rate is very high where in less developed countries, this level is quite low. However, the overall situation is quite concerning for the overall condition of global warming. A report, revealed by the Stern Review, stated that 'under the business as usual, global emissions will be sufficient to propel greenhouse gas concentrations to over 550ppm CO2e by 2050 and over 650–700ppm by the end of this century, which is too robust to cause a wide range of changes in model assumptions'. Additionally, modern environmentalists and scientists have a common consensus that it is required to stabilize CO2e at 450-550 ppm if we want to maintain a planetary ecosystem without inducing any inevitable risks for the whole planet (Stern, 2007).

To ensure this requirement, economists, particularly environmental economists proposed a strategy to impose government interventions in changing energy production systems, preferring solar, wind, nuclear and hydroelectric (Jaccard, 2006). Ensuring equitable growth is another notable challenge in economic growth. In many cases, economic growth presents many obstacles and difficulties for the poorer portion of any economy. An overseas Development Institute (ODI) research obtained that in Uganda, during some fiscal years from 2000 to 2003, when the growth rate was 2.5percent the total percentage of poor people living under the poverty line increased by 3.8 percent. Based on this reality, ODI put its utmost emphasize to ensure extra concentration for poorer group, and to ensure employment for the disadvantaged part so that they can participate and perceive the outcome of economic growth.

Another important dark side of economic growth is that, economic growth can cause resource depletion in any economy. In many cases, it only happens with the single fixed mode of production – land, that the revolution in the transport sector generated famine for the first time. That famine took place for the lack of arable land; caused by railroads, steamships, chemical fertilizers and some other infrastructural developments, which took up huge areas of land that takes place in the case of minerals and other resources as gas, petroleum, etc. (Wells, 1899).

4.2.3.3 How Economic Growth Occurs

There are some schools with their original ideas and interpretations about the process of economic growth. These theories and interpretations are categorized into some categories on the basis of their timescale and nature of production. There are three schools with their own theories on the economic growth process. These are:

1. Classical growth theory (pre 1700 economic growths)
2. Modern Growth Theory (post 1900 economic growth)

3. Combined growth theory (2002)

These theories explain as follows:

Firstly, classical growth theory explains the economic growth process of pre-1700 economies. Primary theorists of this school are Adam Smith, David Ricardo, Malthus, Karl Marx, Joseph Schumpeter, etc.

From classical growth explanations, the theory of Adam Smith is the most prominent and, in fact, the oldest one. Adam Smith (1723-1790) in his famous book, 'An Inquiry into the Nature and Causes of the Wealth of Nations,' shortly named as 'Wealth of Nations' stated his thoughts on economic growth and its process in traditional society. According to the view of Adam Smith, there are three factors of production through which economic growth can be attained. These are labour, capital and land.

$$Y = f(K, L, N) \tag{4.1}$$

Here, in the view of Adam Smith, Y denotes the total output of any economy, and f denotes the total functioning between K=Capital, L=Labour and N= Land. Here, in Smith's view, production is subject to increasing returns to scale. In his view, the real cost of production will tend to reduce through the passage of a fixed time and as a consequence of external and internal economic development (Adelman, 1961). According to Smith, growth depends on three things - proper division of labour and its dependence on the scale of activity, the extent and nature of the market and finally, the improvement of skills of labour (efficiency). In his view, Smith explains particularly the preindustrial stage of economic growth or the stage of initial industrialization (Zhang, 2005). In the view of Malthus, in traditional society, there was a constant level of per capita. In that phase, there were two problems - growth of population and one single production factor - land. On the basis of this explanation, Malthus stated the nature and relation of population with the economy. He stated that- 'population is a biological one, rather than an economic one (Aghion & Durlauf, 2005).

Malthus' growth theory was described by Cobb-Douglas technology. Malthus' growth theory is explained as follows:

$$Y_{M_t} = A_{M_t} K_{M_t} L_{M_t} N_{M_t} \tag{4.2}$$

Here, Y_{M_t} means the whole output of an economic system, A_{M_t} denotes the total factor productivity (TFP), K_{M_t} means capital, L_{M_t} means land and N_{M_t} means labour. Here M indicates that this theory is brought about by Malthus and t denotes the specifically given time.

Malthus came forward with his own interpretation of economic growth. His basic assumption is that economic growth depends on the total factor productivities related to capital, land and labour in a specific period (Aghion & Durlauf, 2005).

Schumpeter was another influential economist who explained about economic growth. In his view, changes in economic life are not forced upon from outside, rather these changes take place by its own initiatives, from within. He believed that only production side can determine the generation of economic change and growth. There are five cases of Schumpeter's growth process as follows:

1. Starting of new goods or new quality of the old one.
2. Starting off a new method goods production in any zone.
3. Introduction of new marketplace for a product or service.
4. Introduction of the new source of raw materials or half-manufactured articles.
5. Carrying out of new enterprise or organization of the industry like breaking up of a monopoly position.

Schumpeter stated that profits are, in an economy, temporary in nature. The innovation is accruing the emergence of the profit. In an economy, dwindling of profit takes place for two causes - Profit is shared by the increased number of innovators and profit is finished due to rising costs and falling prices. By these processes, in an economy, profit becomes disappeared finally. In this circumstance, in any economy, according to Schumpeter, some newly established organizations with their noble production method are established, and these new methods beat older and inferior methods. According to his explanation, profits are, thus, both victim and beneficiary of economic development.

Schumpeter stated that, this competition between old and new production methods creates cost-price equality. At this stage, because of this huge competition, labour wages and land rents will increase and the price of the consumer goods will decrease. In this flow of competition, some other innovations will disturb existing stack-holders. By competition over profits and innovations, 'creative destruction' will continue in this process. As a result, fear for survival will take place among the old and new innovators and from this fear; efficiency (for the survival) will grow among all. This dynamic competition, in the view of Schumpeter, creates an innovation among the enterprises and destroys all old equilibrium by establishing new combinations. Thus, according to Schumpeter, through this competition and creative destruction, progress in productivity will take place (Zhang, 2005). Secondly, modern growth theory describes the economic growth of post 1900s. In this school, Solow, Rostow and some other theorists explain their views about economic growth.

In the view of Solow, in modern times, after 1900, economic growth depends on aggregate modern production functions. In modern economic growth, there is no fixed factor of production. A comprehensive improvement of technology takes place in this phase. As a result, more output with the same resources ensures economic growth and development in the modern age. Solow's growth theory stated about the position of population growth and the impact of economic growth on population growth. According to Solow, all factorial output of any modern economy overtakes the number of increased population. As a result, living standard rises in the modern economy. Solow studied the economic growth in Europe, particularly the United Kingdom and U.S.A. In his observation, in the economies of U.K and U.S.A, investment and consumption shares of output are constant. Concurrently, income share, which is paid to the capital is constant as well. In addition, capital-to-output ratio is constant and real return to capital is constant. Here real return to capital is an important phenomenon in the modern economic growth described by Solow. In Solow's explanation, according to Cobb-Douglas production function, there are three factors of production. These are

$$Y_{S_t} = A_{S_t} K^{\alpha}{}_{S_t} N^{1-\alpha}{}_{S_t} \tag{4.3}$$

Here, Y_{S_t} denotes the total output of Solow model of economic growth, A_{S_t} means total factor productivity (TFP), $K^{\alpha}{}_{S_t}$ denotes the capital and $N^{1-\alpha}{}_{S_t}$ denotes the labour force. Here, the notable fact is that, Solow's model does not include the fixed factor input, land.

The basic difference between the tradition growth theory of Malthus and modern growth theory of Solow is, in the traditional growth model, population growth has a major role whereas in modern growth, population growth has a minor role. The only case where this matters in modern growth function is the exogenous rate of technological changes.

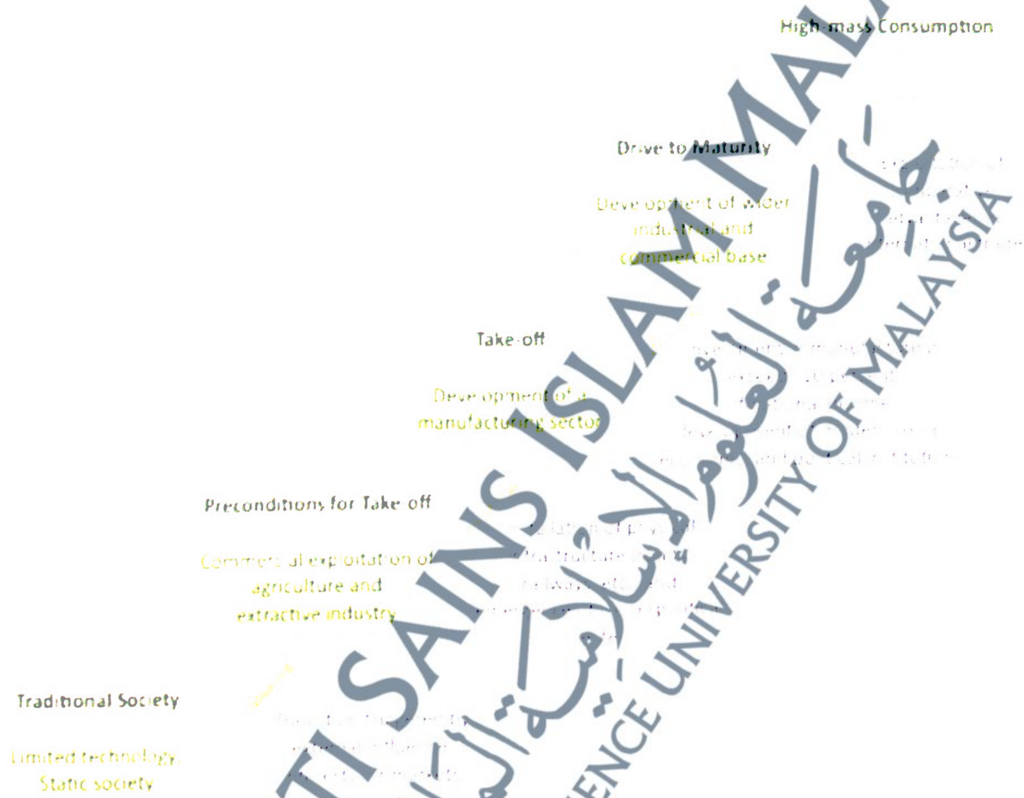
In modern growth theory, in post-World-War –II literatures, there are four major thoughts on economic growth as follows:

1. Linear-stage-of-growth model.
2. Theories and patterns of structural change.
3. The international dependence revolution.
4. The neoclassical, free market counterrevolution.

In linear-stage-of-growth model, there are two models of economic growth. These are Rostow's stages of growth and the Harrod-Domar Growth Model (HDGM). W.W. Rostow described five stages of economic growth in his famous book named 'the

Stages of Economic Growth: A Non-Communist Manifesto.' These five stages are traditional society, pre-conditions to 'take-off,' 'take-off,' drive to maturity and the age of mass consumption. Figure 4.1 illustrates the five stages of economic growth based on the linear stage of the growth model.

Figure 4.1: Five Stages of Economic Growth Based on Linear Stage of Growth Model



Source:http://www.assignmentpoint.com/wp-content/uploads/2013/02/Five-Stages-of-Development.jpg (Rostow, 1990).

Traditional society stage of Rostow is characterized by Agro-based economy, hunting and gathering almost wholly a primary sector economy. There was a limited scale of technology in that society. It was a static and rigid society. Individual economic mobility was absent in that society.

In the second stage, in pre-take-off society of Rostow's growth model, there are trends. This stage has some features. In this stage, the external demand for raw materials introduces economic changes. Producers are not consumed the development of more productive, commercial agriculture and crops rather these are largely exported in this stage of growth. Physical environment needs to change to increase of production to help the investment takes place in this stage. As a result, technological innovation and advancement are initiated, and individual social mobility begins. Social structure started to change where the previous social structure is in a flux now. As a consequence of this whole process, the development of national identity and shared economic interest take place in this stage.

In 'take-off' stage of Rostow, large-scale manufacturing is initiated. By this large-scale manufacturing, a secondary sector is expanded in this stage. In the fourth stage, drive to maturity, diversification in the industrial base occurs. For the expansion of industries, rapid transportation and infrastructural development take place as the demand of time. There is a large-scale investment in social infrastructures beginning at this stage.

In the final stage of Rostow, a widespread and normative consumption of high-value consumer goods begins. By this process, the age of mass consumption starts. Here, a disposable income beyond all basic needs for additional good brings this stage to the highest level of growth and maturity (Fine & Jomo, 2006; Rostow, 1990; Slattery, 2003).

4.2.3.4 Harrod-Domar Growth Model of Saving and Investment:

The Harrod-Domar model was developed independently by Sir Roy Harrod in 1939 and Evsey Domar in 1946. This model is a growth model which states the rate of economic growth in an economy is dependent on the level of saving and the capital output ratio.

If there is a high level of saving in a country, it provides funds for firms to borrow and invest. Investment can increase the capital stock of an economy and generate economic growth through the increase in production of goods and services.

The capital output ratio measures the productivity of the investment that takes place. If the capital output ratio decreases the economy will be more productive, so higher amounts of output is generated from fewer inputs. This again, leads to higher economic growth.

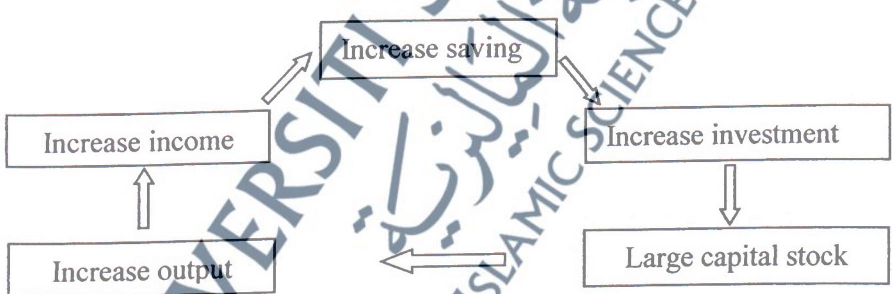
Rate of growth (Y) = Savings (s) / capital output ratio (k) (4.4)

.

This model is mainly used in development economics. It suggests that if developing countries want to achieve economic growth, governments need to encourage saving, and support technological advancements to decrease the economy's capital output ratio. The Harrod-Domar model provides a framework for economic development and has been an important influence to government policies, such as India's Five Year Plan (1951- 1956).

Capital output ratio means Amount of capital needed to produce one unit of output, while capital stock means the total physical capital available in an economy at any given time. Meanwhile, economic growth – This is when a country's production of goods and services increases over time. On the other hand, investment is spending that aims to generate income in the future. E.g. Building factories and buying machinery (Vanessa. C, 2013). The figure below shows the rationale of this model as follows:

Figure 4.2: Harrod – Domar Growth Model: The Rational



Source:https://www.google.com.my/search?newwindow=1&biw=1525&bih=692&tbm=isch&sa=1&q=harrod+domar+growth+theory&oq=harrod+domar+growth+&gs_l=img.1.4.0l3j0i30j0i24l6.10394.13559.0.17128.14.13.0.0.0.5.768.2253.0j6j2j6-1.9.0.msedr...0...1c.1.64.img..10.4.1315.qhb0C4ECtWA#imgdii=_&imgrc=MYVt_RV27STsM%253A%3BuxCfRQpTLU4CSM%3Bhttp%253A%252F%252Fwelkerswikinomics.com%252Fblog%252Fwp-content%252Fuploads%252F2008%252F02%252Fgrowthmodels_1.jpeg%3Bhttp%253A%252F%252Fwelkerswikinomics.com%252Fblog%252F2012%252F01%252F30%252Fmodels-for-economic-growth-ib-economics%252F%3B629%3B419

Theories and patterns of structural change are another thought of economic growth in past World War II literatures. According to this thought, economic growth takes place when underdeveloped countries transform their domestic economic structure from traditional subsistence agriculture to urbanized, more modern, and more industrially diverse manufacturing and utilities economy. In this thought, there are two explanations - Two-sector surplus labour of W Arthur Lewis and patterns of development model of Hollis B. Chenery.

According to Lewis' explanation of growth, there are two sectors of an underdeveloped economy. First is traditional overpopulated rural subsistence sector. In this sector, a huge number of surplus labours exist. The second sector is high productivity, modern urban industrial sector. Here, two important actions are necessary. First of all, surplus labours from the first sector should withdraw from the subsistence sector and secondly, after developing modern sector, it should employ this surplus labourer in that modern sector. Here, the most important element of growth is output expansion, which determines by two things rate of capital accumulation and industrial investment in the modern sector.

In the explanation of Arrow et al., (1961) economic growth is a process through which the economic, institutional and industrial structure of an underdeveloped country is transferred over time to allow two new industries to replace traditional agriculture as the engine of economic growth. The authors said that the most important and necessary element is a set of the interrelated change in the economic structure. This change should touch all economic functions and mechanisms.

There is a small difference between Lewis' thought and leaner-stage growth model and Chenery's model. In Chenery's model, he believes that it should perceive to the increased savings and investment as necessary ingredients, but these savings and investment are not sufficient conditions for economic growth.

The international dependence revolution model explains economic growth as an outcome of international connections among states. There are two types of connections and relationship among states – dominance and dependence. There are some criticisms of this model. Some said that, this model is an indirect outgrowth of Marxist thinking, were described the states as a centre and peripheries that are like neo-classical dependence model of A. G. Frank, Paul Barren, and I Wallenstein. Some argued that the model is a false paradigm model as always, only developed countries can gain growth and underdeveloped are the victims of the exploitation.

The final thought of post-World War II literature is the neo-classical counterrevolution model, it was developed in the 1980s. This model suggests for a free market, public choice and market-friendly approaches for economic growth. This model recommends for moderating the policies of macro-economic supply side. It has said about free market, dismantling of statistical planning, public ownership and government regulation of economic activities. The basic arguments of this school are as follows:

Firstly; underdevelopment results from poor resource allocation because of inappropriate pricing principles and large-scale state interruptions by excessively active developing-nations' governments. This school believes that, state's interruption in the economic mechanism and functions slows the pace of economic growth. According to this school, to attain economic growth, there are three approaches as follows:

1. Free-market approach
2. Public choice (new political economy) approach
3. Market friendly approach.

In their view, neo-classical counterrevolutionaries argued that, markets alone are efficient. So, governments should leave them free so that they can continue with their own rules and, as a result, both market efficiency and economic growth will be stimulated.

In public choice approach, it is argued that, governments can do nothing right. So, minimal government is the best government. In a market-friendly approach, it is argued that government should intervene in some non-selective sectors such as in infrastructural development sides.

Based on Sims (1972), Granger Causality test (1969) is used to examine the relationship between stock market development and economic growth in Libya. According to Sharma & Mathur (1989) Granger Causality is a good method to examine if the stock market development has causal effects on economic growth, or vice versa.

This chapter will be divided into three parts, the first one illustrates the data collected to investigate the role and causality linkage between LSM and economic growth. The second part will address the variables used in the study, which are LSM variables, including market capitalization ratio (MCR), turnover ratio (TR), and Index (IDX), and real gross domestic product (RGDP) as an economic growth variable. Meanwhile, the third part explains the research methodology used in this study based on two methods the interview as a qualitative method and survey questionnaire; VECM as well as Granger Causality test and Co-integration test as a quantitative methods.

To determine the differences among the quantitative and qualitative research Rust (1993) has explained that the difference between the techniques is according to the purpose of the analysis rather than the method of data gathering. While quantitative research answers the question of how things often happen. However, qualitative methods comprise interpretive techniques which describe, decode, translate and explain the meaning, not the frequency, of the phenomena in the social world (Maanen, 1983). Researchers are not binding by any especial methodology, but they can use diverse tools and methods according to the requirement of problem resolution (Denzin & Lincoln, 2009). Qualitative research is most suitable when the research requires a *'rich'* information about a small number of subjects, when a flexible or informal approach is desirable, or when members of the sample population involved are better researched by encouraging description and analysis of situations in their own words (Ticehurst & Veal, 2000).

This study used qualitative and quantitative method. The first method, qualitative technique is implemented by conducting interviews with the experts and well-known people in this area. They are; Dr. Mohammad Karroud (Head of LSM), Mr. Fathi Almoghrabi (Head of Studies and Training and Media Department), Mr. Mohammad Alhooni (Director of Indicators and Reports), and Mr. Mohammad Nasouf (a staff in

Management of Depository and Central Registry). This semi-structured interview was conducted by the researcher; during June 7 to 10, June 2012 with the interviewees respectively.

The second method utilized in this study uses the quantitative technique. There are three types of quantitative technique employed in the present study: Questionnaire, VECM as well as Granger Causality test and Co-integration test. For questionnaire distribution, three main parts are specifically highlighted and discussed. The researcher has distributed a questionnaire among the LSM players, representatives of contributing sectors in the market, local and foreign investors and brokerage companies' officers. Through the questionnaire, the study seeks to know the extension of the role of LSM in promoting economic growth and its performance. The other important target of the questionnaire is to identify the measures taken by the market to enhance, improve its contribution to economic growth and to classify what are the problems faced, and the plans to solve these problems. In addition, the interview seeks to know their feel about LSM services so as to attract them to invest in this sector and to look for suggestions to increase their investments in the market.

In addition to that, the researcher used co-integration test to know if there is a relationship among LSM development and economic growth in the long run, and the extension of it. The study also employed VECM to examine the role of LSM variables in boosting RGDP growth in the short run and long run. The third method for quantitative technique is Granger Causality test. This test is normally used to assess the causality relationship between LSM development and economic growth.

4.3.2 Data

Data collection methods are considered as a significant part of research design and depend primarily on the research objectives, approach and strategy (Sekaran, 2006). There are two techniques concerning data collection: The primary data collection and the secondary data collection. These two types have been widely used in social and business research. Both methods of data collection were adopted in this study as suggested by Malhotra & Birks (2007), who strongly recommended using this strategy that was done together with a combination of qualitative and quantitative methods, to provide an opportunity for triangulation where possible. This study will examine primary and secondary data sources in the following subsections.

4.3.2.1 Primary Data

Primary data are collected by the researcher who goes directly to the sources of the evidence and then they gather the information from the primary resource to answer their research problem (Worrall et al., 2000). In addition to that, Primary data can be done in various ways utilizing different (both quantitative and qualitative) key methods.

4.3.2.2 Secondary Data

Secondary data is the information or data that have already been collected by others for other purposes (Cooper et al., 2006). By other words, before taking a research project, secondary data can be referred to all sources of information that are available. Sekaran (2006) mentioned that:

> "[…] Secondary data can be extracted from various sources, including books and periodicals, government publications and information sources, the media, census, stock market reports, and mechanized and electronic information of all kinds such as a barcode, scanner data, and the internet. Secondary data can be culled from the historical records of the organization itself, from the information already available on the internet, or from external sources such as the ones mentioned above, either through the internet or otherwise."

This study used a mixed-method approach to the research design and data collection activities, combining quantitative and qualitative methods within the overall framework of a single case study (Libya) that depends upon the collection of both primary and secondary data. The primary data are obtained from the interview which made by the experts as well as from distribution of the questionnaire to the LSM players, contributing sectors, brokerage companies' officers and investors. The aim of the interview conducted is to check the consistency of the result given by the experts with the result collected from the distributed questionnaire. Meanwhile, the questionnaire is distributed with the objective to identify activities and policies that LSM did to promote Libyan economic growth during the period of the study and what are their plans to gear up the promotion. Besides, this study was interested to know the problems faced by LSM since it is still considered as an infant market. The other importance of the questionnaire's result signifies and demonstrates measures taken by LSM to attract the local and foreign investors.

The questionnaire is distributed and conducted via a face-to-face method with all the LSM members and other people through three stages with specific questions, this procedure was in Tripoli branch. Meanwhile in Benghazi branch the researcher sent the questionnaire via email because of the war circumstances. Before the distributing the questionnaire, the name list of the respondents is given according to the LSM society, starting from the head of the market passing through the heads of departments and the employees. On the other hand, the investors' number and contributing sectors are according to their contribution volume in the market.

Moreover, secondary data have been acquired from recently published research and articles on the relationship between LSM development and economic growth. This type of data contains a review of the literature and the most recent publications related to the economic indicators in general, and the financial sector in particular. Quite specifically, literature relating to this system's application in Libya has been featured. Data covers the 2008M4-2011M2 period, and because of the availability of data collection sources, annual figures for the period 2008 - 2010 are used. Unpublished data, for instance, thesis and other relevant material from the General Statistics department in Libya, the General People's Committee Secretary of Economy and Administration Record Management, Tripoli branch are used. The World Bank and the IMF are proved to be useful sources of statistics and other data relating not only to the Libyan situation, but also to the market and emerging economic indicators besides. Saunders et al., (2011) explained that using secondary data within organisations might additionally have a greater advantage.

Specifically, the secondary data is gathered from various sources, each variable is collected from the Central Bank of Libya CBL. The LSM data are taken from LSM reports, publications and website. The data of RGDP are collected from the CBL and National Centre for Information and Documentation.

The study utilizes monthly data covering the period of 2008:M4 -2011:M2. Not all the data used in this study are real in terms of their values, because monthly data of RGDP are not real, the reason is that the available data for RGDP is just yearly data in the sources and because of the shortage of LSM, since the characteristic of the data is not fulfilling the requirement of conducting Co-integration test and VECM within causality tests. Thus, this study interpolates the annual data to derive monthly data. Meanwhile, the LSM variables (independent variables) are providing the real data for monthly data. However, since the dependent variable (RGDP) uses interpolated data, thus, this study uses a mix of interpolated data for the dependent variable and real data for the independent variables. The index year is 2008 because this year is an active year, and it is also the year the LSM started using electronic trading which promoted LSM to improve its activity.

4.3.3 Variables

This section describes the various measures of LSM development and economic growth variables. LSM is measured by market capitalisation ratio (MCR) (size variable), turnover ratio (TR) and Index (IDX) (liquid it variables). Meanwhile, real gross domestic product RGDP in included under economic growth variable.

4.3.3.1 Economic Growth variable: Real Gross Domestic Product (RGDP)

The use of real GDP as the measure of economic growth is justified on the ground that a significant change in RGDP, whether up or down, usually has a significant impact on the stock market. It is easy to understand why a bad economy usually means lower companies' profits, which in turn means lower stock prices. The investors worry whether the invested countries have negative RGDP growth, as it is one of the main factors that economists use to know if the economy is in stagnation. Besides, economic production and growth, RGDP represent many things and has a large impact on nearly everyone in a particular country. For example, when the economy is strong, typically, the level of unemployment is relatively low, and wage increases as businesses demand more labour to meet the need of the growing economy.

Changes in information about the RGDP future course may choose to change the prices in the stock market. The rationalization for the linkage among the stock market and the growth of the RGDP is that changes in stock prices will lead to reduce the asset positions of the corporation and affect their borrowing cost. When it costs more for firms to borrow money, they borrow and invest less than when firms invest less, real GDP will grow slowly. According to this view indicated to by some as balance-sheet effects and others as the credit channel stock prices will change because of the changes in real economic conditions or some of other factor, but the credit channel may affect the severity and length of recessions (Ray, 2012).

Based on a study of 80 countries during the period 1960 1989and using economic and financialdevelopment measures respectively, King & Levine (1993) found a positive, statistically significant correlation between GDP per head and measures of financial development.

In this study, RGDP used to measure the economic growth in Libya to examine the role of LSM in promoting economic growth and its performance. However, due to the unavailability of RGDP monthly data in all available sources the study used the interpolation method to get monthly from annual data for the period of 2008:M4 to 2011:M2.

4.3.3.2 Stock Market Variables

1. **Size Variable (Market Capitalization Ratio (MCR)**

Market Capitalization is often used as one of stock market size indicators. This index equals the total value of all listed shares. In terms of economic significance, the assumption is that market size and the ability to mobilize capital and diversify risk are positively correlated (Levine & Zervos, 1996 and Augustine et al., 2010).

Otherwise, in their study Van et al., (2006) using annual data for 1830 – 2000 in Belgium, said that market capitalization gives a significant and significant influence on of economic growth rate being the most commonly used measure, it equals the value of listed shares divided by GDP. The assumption behind this proxy is that market size has had a positive correlation with the ability to diversify risk and mobilize capital on a wide- basis of the economy (Levine, 1996).

This research uses MCR real monthly data as a size measurement, for the period for 2008M4 to 2011M2 in order to evaluate its performance, and to examine the role of LSM in promoting economic growth in Libya.

2. Liquidity Variable

In her study about developing countries during the period 1976 – 1993 Levine & Zervos (1996) said that stock markets may have an impact on economic activity through the creation of liquidity. Many profitable investments need a long-term commitment of capital, but investors often don't want to leave the control of their savings for a long time. Liquid share markets make investment more attractive and less risky because they allow the savers to get an asset equity and to sell it cheaply and quickly if they want to change their portfolios or need access to their savings. From the other side, companies enjoy permanent access to increase their capital through equity issues. By facilitating longer-term, liquid markets, more profitable investments, improve the average of their capital and enhance the prospects of economic growth for the long-term. Furthermore, by making the investment less risky and more profitable, this will lead stock market liquidity to attract more investments, which in the end will push the investors to come if they can leave.

i. Turnover Ratio (TR)

This measure equals the value of total shares traded, divided by market capitalization. Even though TR is not a direct theoretical definitions measure of liquidity, low-transaction costs are often indicated by a high - turnover ratio (Aljbiri, 2012). In addition, turnover ratio complements the market capitalization, a big but inactive market will have a large MCR but a small TR. In addition to that, Turnover ratio also complements the total value traded ratio; it means small liquid market will have a small total value traded ratio but a high turnover ratio. On the other hand, the total value traded ratio captures trading relative to the economic size, turnover measures trading relative to the stock market size (Levine & Zervos, 1996); (Augustine et al., 2010). In other words, TR is given as the value of traded shares considered as a percentage of total market capitalization (Matadeen et al., NA).

The present study used turnover ratio is one of liquidity measures to investigate the role and performance of LSM in promoting economic growth in Libya. TR counted from dividing total; value of shares traded by MCR, using real monthly data for the period 2008:M4 to 2011:M2.

3. Index (IDX)

The index is a numerical value that is measured by changes in the stock markets and is expressed as a percentage of change at a particular moment; compared with the value in the base period or the starting point. The IDX measures the up and down of price movements, reflecting the market price and its direction. An indicator for the investor as a standard to measure the level of shares in the market of the investor is very important; since it acts as a standard for measuring the level of the stock market. In addition, it helps the international investors to compare one-stock market anywhere in the world with other markets. The result will be to raise the level of public awareness and increase the foreign investment in the stock market.

It is worth mentioning that in any market the IDX does not include all listed companies, but a select few of them are based on the criteria as a condition for inclusion in the index. Financial markets differ in determining the number of listed companies in the index sample. They also differ in their method of calculating the index up, even if they all perform the same purpose (Investor's guide, 2008). This study uses the IDX real monthly data from 2008M4 to 2011M2, to measure the role of LSM and its performance in promoting economic growth in Libya.

4.3.4 Qualitative and Quantitative Methods

As mentioned in the introductory chapter, the main objective of this research is to investigate the role and causal effect of LSM on economic growth in Libya. Both qualitative and quantitative research methods seek to help answer questions, to address issues and shape thinking for future action or non-action.

The research methodology of this study is divided into two categories the interview as a qualitative method and questionnaire, Granger – Causality test within Vector Error Correction Model (VECM), and Co-integration test as a quantitative methods. For the first part, this study uses critical analysis to evaluate the output of the interview collected from the experts. On the other hand, the second part is run VECM, Granger Causality test and Cointegration test.

4.3.4.1 Qualitative Method: Interview

Qualitative research approach aims at looking deeper into the research questions and is more flexible with limited structure (Bryman & Bell, 2011). In addition, it allows the subjects being studied to give much 'richer' answers to questions, and may give valuable insights that might have been missed by any other method. As Poovey (1995) underlines, "There are limits to what the rationalizing knowledge epitomized by statistics can do. No matter how precise, quantification cannot inspire action, especially in a society whose bonds are forged by sympathy, not mere calculation." Because of this knowledge and the belief in, people's real experience and perceptions, one of the approaches which the researcher chose to conduct the study, is an interview with LSM experts, which leads to bring forth the empiricism through the interpretation of the subjective. The purpose of this study is to explore knowledge related to deeper comprehension in the impact of LSM on economic growth in Libya, The researcher is more appealed to focus on empirical experiences from people's expatriation and interpretation with analysing the lethargy of data to make the results of this study more trust.

1- Validity and Reliability

Using proper techniques ensures that qualitative data are collected in a scientific and consistent manner. Improving data collection techniques will enhance the validity, reliability and the accuracy of research findings (Harrell & Bradley, 2009). Validity is required to ensure that the same results are gained on re-measurement. Reliability is necessary to ensure that the same results or observations are obtained or made by different researchers on separate occasions (Lewis et al., 2007); (Lewis, 2007) and (Sekaran, 2006). In addition, Leedy & Ormrod (2005) reported that a data collection method must be valid, accurate and reliable because both validity and reliability can affect the probability that a researcher gets statistical significance in his data analysis, and to what extent the researcher can draw meaningful conclusions from the data. Since the researcher adopted a multi-method approach using two data collection methods (personally-administered questionnaire and semi-structured interview), before, during and after the data collection, the procedures undertaken to ensure validity and reliability of the study results are described next.

i. Validity

There are two different types of validity; the first one is the predictive validity, which indicates to the ability of the measuring tool to differentiate between individuals with reference to predicting a future criterion variable (Serakan, 2003). The second type of validity is concurrent validity that indicates to the extent to which a measurement scale links to other well-validated proxies of the same subject (Oppenheim, 2000). In order to meet the needs of validity, as suggested by Malhotra & birks (2007) and Saundres et al., (2009) , following procedures were undertaken:

a. An extensive literature review was undertaken to clarify and define the interviews' questions. Some questions used in the interviews were adopted from the related previous studies, although there are few studies done in the same field. However, there are some studies that talked about this field relating to the other subjects, which made it possible to make an indirect comparison among the research findings with those findings of those studies.

b. Although the study used a small sample in the interview, but the interviewees have a good experience and knowledge, which made them ideal sample for the interview. Meanwhile, the sample of the questionnaire was the whole LSM society because as mentioned before this society is already small. For this reason, the researcher preferred to include the whole LSM society in the sample size.

c. To meet the requirements of the content validity, an extensive literature review was undertaken to clarify and define scales and proxies adopted in the study.

d. Prior to using an interview to collect data, the pilot study of the interview was conducted in three stages: academic experts, colleagues and target participants. This test was to ensure the content and face validity of the questionnaire. The authors suggested that the content validity of the interview be established. The same procedure was done with the questionnaire.

The validity of semi-structured and in-depth interviews is established through flexible and responsive interactions possible among interviewer and interviewee that allow the meaning to be probed; the topic to be covered from a variety of sides and questions to be made clear to respondents (Saunders et al., 2011).

ii. Reliability

The reliability of a measure is an important indicator of the consistency and stability and of the instrument (Sekaran, 2006). In this study, the questions were designed to be clear and understandable on their pilot study.

Moreover, the researcher attempted to ensure that respondents who had completed the questionnaire had enough knowledge about the interview and questionnaire questions, by having an informal conversation with them whenever it was possible. There is an argument about the recommended minimum acceptable limit of alpha. Serakan (2003) argued that if the alpha coefficient scores are less than 0.60 they are considered to be poor. In the present study, the Cronbach alpha scores for the questions that were adapted to measure the study variables are presented in the research data analysis chapter.

2- Interview Process

The qualitative research interview is useful to get information on the story behind the participants' experiences. Qualitative interviewing is classified into two types: unstructured and semi-structured interviewing. This study uses the latter as it has provided some questions as a guideline to ask the interviewees.

For the interview method, it has to go through three stages. The first stage is an open interview; it is called an explorative stage. In this part, the researcher asks random questions because the researchers need to understand the real and current situation such as how to enter the market, how it works, and what types of respondents that this study should explore and some other questions. After achieving the first stage, the scope of the study has been determined, which is the effects of the stock market on economic growth for the stock market members and the measures taken to attract the investors, but it merely touches on the questions of the general aspects. In the last stage, a more organized and specific questions have been made, and it has been prepared according to the two previous stage results. This stage is the advanced stages of scientific research.

After the above-mentioned stages, the researcher did a pilot test to check the relevancy of the interviewer questions. Based on the test conducted, some questions have been corrected and adjusted in terms of the structure and words used, but the meaning and the objectives of the questions are still remained. It has been changed as some of the questions are too long and may easily make the interviewees get bored. Some are very direct questions, but might be quite sensitive to some people, for instance, a detailed question related to the political problem; while some questions used jargon words which may lead to confusion for some people. Thus, it has been adjusted accordingly.

The semi-structured interview method was conducted for the following reasons.

i. Semi-structured interview has the highest degree of flexibility of all qualitative methods and it's able to reach specified results more effectively than the questionnaire method (Leedy & Ormrod, 2005).

ii. Usage of an interviewer-administered questionnaires need the researcher to interview respondents and, due to this research use semi-structured interviews, as well as a questionnaire approach, it is not necessary to interview respondents two times.

iii. Interview technique allows the researcher to ask follow-up questions and more complex questions. This advantage is not available in the questionnaire. Moreover, it takes into consideration the non-verbal communication such as the behaviour, feeling, attitudes and facial expression of the interviewees. So, this will allow a higher degree of confidence in the respondents' answers than in the questionnaire responses (Collis et al., 2003).

iv. The use of the interviews increases the certainty. Due to the direct contact between the interviewer and interviewee, it gives enough time for the researcher to explain the study purpose more freely, to clarify any doubt and avoid any misunderstanding of the questions or the concepts (Oppenheim, 2000).

The researchers chose the interview because of its flexibility, and it is one of the best ways to capture how thinks about a particular topic and it also allows the interviewee to go into as much depth as they feel for whereas other data collection methods would not allow this kind of freedom. Additionally, the semi-structured interview allows the interviewer to probe deeply and ask more questions that have not been written down (Deng, 2013).

In a semi-structured interview, the interviewer has a list of questions which are called interview guide on specific topics to be covered, but one of the interview advantages is, the interviewee has a leeway big deal of leeway in how to reply. Questions may not follow exactly the way outlined on the schedule, but all the questions will be asked (A. Bryman & Bell, 2011). Conducting an excellent semi-structured interview requires a thoughtful planning, especially for the preparation of interview guideline. In In his study Steinar. C (1996) addressed nine different types of question that can use in an interview situation, these types are: 1) Introducing questions; 2) Follow-up questions; 3) Specifying questions; 4) Probing questions; 5) Direct questions; 6) Structuring questions; 7) Indirect questions; 8) Silence; 9) Interpreting questions. This interview starts with some general, introducing questions, such as questions about the interviewee's working experience, and profession. Then questions of the interviewee's opinions and attitudes about the research topic are followed up, with open-ended direct and specifying questions. In the end, the researcher added a question about whether the interviewee would like to add anything they think is important for the research, in order to give more room for interviewees to provide their thoughts and ideas.

Specifically, the interview process in this study contains seventeen questions divided into three themes. The first theme is about the performance of LSM and its effects in promoting economic growth in Libya. The second one talking about the measures taken by the market to attract the local and foreign investors. Meanwhile, the last team is to know the LSM's plans to make it more stable, strong and sustainable. Also, some questions about the important sides of LSM have been asked. The interview themes are explained as follows:

The first theme contains various questions which have direct linkage with LSM, such as, the establishment date and the reasons of its establishment. Moreover, despite its established in 2006, the reasons behind the delay of LSM trading effectively until April 2008 and some other related questions.

The second theme is about the performance of LSM and its role promoting economic growth, and whether it has a positive effect or otherwise. Meanwhile, the last theme touches on the measures taken by the market to appeal to the local and foreign investors. Each team theme has one question regarding LSM plans to improve its operations to make its role more significant.

a. Pre-testing and Piloting the Interview

To ensure the questions in the interview were valid to achieve the research objectives, it was necessary to pilot them. Thus, the interview questions were pre-tested by some of LSM players. This step was used mainly to determine that the question wording was clear and unambiguous and to recognise what had to be effected to achieve a satisfactory response during the main study.

The interview test was conducted to study the reaction of the managers to particularly sensitive questions and to know the likely duration of interviews in the estimation of time-scale for this research. Here, peculiarities of the behaviour of the majority of Libyan managers take into consideration. Interviewees were chosen from four departments based on the favourable access conditions and were used to assess both proposed data collection procedures and types of data needed to repair the research questions. The following subsection discusses key contents of the interview pilot study.

b. Interview Sample

In their study Laforest et al., (2012) stresses that respondents under study are "people who, because of their position, activities or responsibilities, have a good understanding of the problem to be explored… Moreover, they may represent specific client groups and areas, have administrative responsibilities in a municipality or community organization, be experts in a particular field, and so forth." The above authors also addressed that it is hard to determine the exact interviewing number that have to be done. However, the researcher argues that the number of interviews should be small since the aim of interviews is not to obtain a representative sample of the different information categories, but to gather the information a substantial body from them.

Thus, this study conducted four interviews in the LSM location, and it was in Arabic to avoid the misunderstandings with four experts who are the manager of the market and three of LSM managements heads for four day's starting from 7th June 2012. Interviews took between one and two hours with the interviewee's prior permission. The researcher agrees with Cohen & Ceabtree (2006) that semi- structured interviews often contain open-ended questions and may diverse from the interview guide, so it is the best to record the interview and transcript it later. Besides, it is difficult to focus on conducting interviews while jotting notes. By a recorder using, the interviewer does not need to worry about missing any parts or disrupting the interview process. In addition, during the interviews always attempts to follow with probing questions, such as "anything more?" "Do you want to add anything?" Or silence to allow the respondents to express more their ideas.

The interview individuals who participated in the interviews were also respondents to the questionnaire survey, they were chosen to be respondents in both techniques because the researcher decided to get more benefit from their individual experience and their requisite information about LSM issues. Also, they occupied critical roles in their managements. The semi-structured interview is very beneficial in providing an in-deep analysis of points under investigation. In this research, targeted general managers were interviewed and were asked to fill a questionnaire.

In an organisational setting, the opinions of leaders who are very knowledgeable are included in the sample. Enlightened opinions, views and knowledge constitute a rich data source, because either they are the only ones who possess it or to conform to some criteria set by the researcher, even if their number is small (Sekaran, 2006). In this study, the interview is also among four of the questionnaire respondents because the interview will give them more space to provide their opinions. In addition, there are some questions in the interview, which were not in the questionnaire and vice versa.

Moreover, General Managers are the most knowledgeable people in terms of financial market practise. So, it should benefit from their knowledge in their field and expressed their willingness to cooperate and fully participate in the questionnaire and interview.

4.3.4.2 Quantitative Method

1- Survey Questionnaire

In his study Collis et al., (2003) addressed that the questionnaire is the main method in survey research. It is based on a list of carefully structured questions chosen after testing considerably to achieve a reliable response from a selected sample. For this research, the use of a questionnaire method follows directly from the research objectives.

i. Formatting the Questions

There are four types of scales utilising in the questionnaire: the nominal scale, used to obtain information about respondents and their years of experience; according to questions in the questionnaire, relating to demographic data. The second scale is an ordinal scale, which was employed to analyse some demographic data, such as the level of institutionalisation. Moreover, the third scale is an interval scale, which was used to measure managerial perspectives of sources and information. Meanwhile, the fourth scale is a rating scale, which was used to obtain the data for this research. Rating scales allow respondents some degree of flexibility to reflect the intensity of their views, thinking, feelings and understanding.

A five-point Likert scale to organize the questionnaire in order to clarify the degree of agreement or dis-agreement with each item included in the questionnaire, in which the range was from 1 “strongly disagree” to 5 “strongly agree."

Even though English is one of the important languages of business and commerce in Libya, and widely spoken in business sectors, especially in mixed companies (e.g. Oil and foreign banking). However, since all respondents are Libyan, it was expected that respondents would feel more comfortable using their native language. Hence, the questionnaire, whilst originally in Arabic language was translated into English to render the questions clear and avoid the possibility of misunderstandings. However, some respondents prefer to answer the English version of the questionnaire.

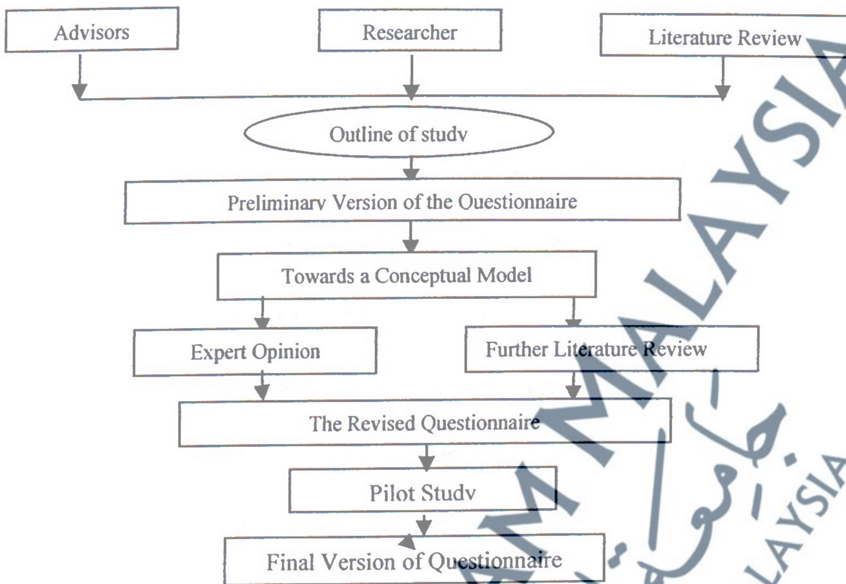
ii. Pilot Testing the Questionnaire

Pre-testing the questionnaire before data collection is a vital step in research, to make sure that the final version contains exact questions that are specific, understandable and capable of obtaining a response from those answering (Oppenheim, 2000) and (Saunders et al., 2011).

In the present study, the researcher presented the survey to a committee of arbitrators who specialize in economics and statistics, to judge the consistency of the questionnaire before its distribution. Arbitrators have expressed their opinions and suggestions regarding the survey, and their comments have been taken into the researcher consideration.

Figure 4.2 shows the research categories and activities required for the pilot studies undertaken, developed according to the information gathered from literature and other documentation.

Figure 4.3: Research Activities and the Pilot Test



Source: Hardaker 1997

Many researchers such as Bryman & Cramer (2011) pointed out that short questionnaires receive higher response rates. This study's questionnaire consists of two parts: the first part is about demographic information about the respondents, whereas the second part is divided into three parts based on the objectives of the study.

iii. Fieldwork

At the first stage, the researcher visited the LSM in order to build trust with respondents and to determine a deadline for complete the questionnaire and interviews. In addition to that, via these visits the researcher was able to determine which managers selected to make the interview with them. This stage started in the beginning of May until first of June 2012. However, in Libya, to achieve the questionnaire objectives and be successful, the interviewer will meet some requirements, due to the special circumstances, and he/she must have some special skills, these skills are as follows:

a. The researcher must be competent in Arabic (the first language of the researcher), and should be aware of cultural influences, choose the suitable and available time for both researcher and respondents and understand all the ethical issues concerned with conducting research in that particular environment.

b. The researcher must have enough knowledge about the importance of human and social relationships (family support, friends, and relatives) and know how to benefit from these; for social networking because it is very important and helpful.

c. The researcher must be able to encourage the participants' full co-operation and, then ensure that they completely understand both purpose and nature of the research.

d. The researcher must be able and ready to learn from the experiences gained in the process and to accept that these may change the research's intended plans as it progresses.

The second stage was distributing the survey questionnaires. It took three weeks starting from 20th June 2012. The adjusted questionnaire is distributed to four types of respondents: LSM players, the representatives in contributing sectors, brokerage officers and the local and foreign investors. Firstly, the researcher has interviewed the LSM players to identify the measures taken by it to improve its contribution to economic growth and to identify the problems faced and possible solution to overcome these problems. Secondly, the interview is conducted with the representatives of the contributing sectors in the market. Lastly, some investors are also interviewed to know their views on LSM services so that this study could come out with any possible policies to attract them to invest in the market. It should be mentioned that all the interview questions are inserted in the main body of the questionnaire.

It should be said that the survey questionnaire distributed in the two LSM branches, Tripoli branch and Benghazi branch. In Tripoli branch the questionnaire distributed by the researcher, but in Benghazi branch the questionnaire sent by the email because of the special circumstances in Libya due to the war.

2- Empirical Analysis

The objective of empirical study is to examine the causal relationship between LSM and economic growth in Libya. The dynamic causal relations among variables are assessed via Granger-causality test and a Vector Error Correction Model (VECM), and cointegration test. Theoretically, stock market and economic growth may have a bidirectional causal effect. The cointegration test employed to set the relationship among LSM and economic growth in the long run. Then Granger-causality test is used to determine which directions of causality exist in Libya economy. On the other hand, the VECM is used to analyse behaviour of variables involved. The researcher used the VECM approach because it was able to analysis relationship between short-run and long-run behaviours.

In the analysis, this study firstly evaluates stationary of data. This evaluation is needed due to Granger causality test and VECM modelling require that all data series involved being stationary. The study uses Augmented Dickey-Fuller (ADF) unit root test to determine whether the variables are in stationary property or integration order. If a variable is not stationary, it needs to be differentiated to attain stationarity. A variable is said to be integrated of order d if it requires differencing d times to attain stationarity.

If the variables are found non-stationary, it is necessary to test for co-integration properties before adopting the VECM method. The differencing process causes the variables loss their trend which means that they lost their long term behaviour. Therefore, co-integration test is an important step to determine the long-term relationship among variables involved. The study employs the VECM based on the approach of Johansen and Juselius (1990) for co-integration test. This test has more power than alternative tests of co-integration including the two-step Engle-Granger (1987) co-integration tests (Cheung & Lai, 1993) and (Gonzalo, 1994). Moreover, the test is capable of identifying the number of co-integrating vectors which governing the long-run relationships among the variables.

i. Unit Root Test

Following the studies of Athanasios & Antonios (2012) and Adenuga (2010) this study first employs the Augmented Dickey–Fuller (ADF) unit root tests to check the variables' stationarity. The ADF test involves the estimation one of these following equations respectively.

$$\Delta X_t = \delta X_{t-1} + \sum_{j=1}^{\rho} \delta j \Delta X_{t-j} + \varepsilon t \qquad (4.5)$$

$$\Delta X_t = \propto 0 + \delta X_{t-1} + \sum_{j=1}^{\rho} \delta j \Delta X_{t-j} + \varepsilon t \qquad (4.6)$$

$$\Delta X_t = \propto 0 + \propto 1 \; t + \delta X_{t-1} + \sum_{j=1}^{\rho} \delta j \Delta X_{t-j} + \varepsilon t \qquad (4.7)$$

There are some additionally lagged terms included to ensure that the errors are uncorrelated. The maximum lag length begins with 3 lags and progresses down to the appropriate lag by examining the AIC and SC information criteria. The null hypothesis is that the variable Xt is a non-stationary series (H0: β=0) and is rejected when β is significantly negative (Ha: β<0). If the calculated ADF statistic is higher than McKinnon's critical values, then the null hypothesis (H0) is not rejected, and the series is non-stationary or not integral of order zero I (0). Instead of that, rejection of the null hypothesis will lead to stationarity. Failure to reject the null hypothesis will lead to conducting the test on the difference in the series, so further differencing is conducted until the null hypothesis is rejected and the stationary is reached (Dickey & Fuller, 1979).

In order to find the appropriate structure of the ADF equations, in terms of the insert in the equations of an intercept (α0) and a trend (t) and in terms of how many extra enhanced lagged terms to include in the ADF equations and to avoid possible autocorrelation in the turbulence, the minimum values of Akaike's (1973) information criterion (AIC) and Schwarz's (1978) criterion (SC) based on the usual Lagrange multiplier LM (1) test were employed.

ii. Co-integration Test

Cointegration test is fairly common and is well documented elsewhere (Engle & Granger, 1987); (Johansen, 1988) and (Johansen & Juselius, 1990). It made a significant contribution towards testing causality. Two or more variables can be cointegrated if they share a common trend. As long as the related variables have a common trend, Granger causality must occur in at least one direction (Clive WJ Granger, 1988). However, although cointegration indicates the presence or the absence of Granger causality, it does not indicate the direction of causality between the variables that can be detected by using Vector Error Correction Model (VECM), which is derived from the vectors of cointegration (Abu-Bader & Abu-Qarn, 2006).

Moreover, Co-integration analysis is used to determine whether the long-term relationship exists among involved variables. If the variables being co-integrated, then there is a stable long-run linear relationship among them. In addition, Clive W Granger (1986) argued that the test for co-integration can thus be thought of as a pre-test stage to avoid "spurious regression" situations.

Since it has been determined integration between the variables under investigation of order 1, then the co-integration test is performed. The Johansen & Juselius (1990) approach for co-integrating test has two-statistic tests to identify the number of co-integrating vectors (or the rank of Π). These are the maximal eigenvalue and the trace. The null hypothesis examined by the trace statistic, which is, there are at most r co-integrating vectors contrary to the substitution of more than r co-integrating vectors. This statistic is calculated by:

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^{n} ln\left(1 - \hat{\lambda}_{r+1}\right) \tag{4.8}$$

Where the λ is the largest estimated value of ith characteristic root (eigenvalue) obtained from the estimated Π matrix, r = 0, 1, 2,....p-1, and T is the number of applicable observations. The λ_{trace} statistic tests the null hypothesis that the number of distinct characteristic roots is less than or equal to r, (where r is 0, 1, or 2,) against the general alternative. In this statistic λ_{trace} will be smaller when the characteristic roots' value is nearer to zero (and its value will be large related to the characteristic roots' value which are further from zero).

On the other hand, the maximal eigenvalue test consists of ordering the largest eigenvalues in descending order and considering whether they are significantly different from zero. To test how many of the numbers of the eigenvalues are significantly different from zero this test uses the following statistic:

$$\lambda_{max}(r, r+1) = -T\, ln\left(1 - \acute{\lambda}_{r+1}\right) \quad (4.9)$$

The λ max statistic tests the null hypothesis that the number of r co-integrated vectors is r against the alternative of (r+1) co-integrated vectors. Thus, the null hypothesis r=0 is tested against the alternative that r=1, r=1 against the alternative r=2, and so forth. If the estimated value of the characteristic root is close to zero, then the λ_{max} will be small.

It is well known that Johansen's co-integration tests are very sensitive to the lag length choice. Firstly, a VECM model is fitted to the time series data in order to find an appropriate lag structure. The Schwarz Criterion (SC) and the likelihood ratio (LR) test are used to select the logs required number in the co-integration test

iii. Granger Causality Test

Causality is a kind of statistical tool, which using in the building of forecasting models widely (Ray, 2012 and Granger, 1969). Causality approach is used to test the relationship between stock market development and economic growth. In accordance with Sharma & Mathur (1989) causality in the Granger sense Granger, (1969) and Granger & Joyeux (1980) is an appropriate method for investigating whether stock market development causes economic growth or vice versa.

Following the studies of Tachiwou (2009); Adamopoulos (2010) and Ake & Ognaligui (2010a) the Granger causality test use the following equations:

$$y_t = \beta_0 + \sum_{k=1}^{M} \beta_k\, y_{t-k} + \sum_{l=1}^{N} \alpha_l\, x_{t-l} + u_t \quad (4.10)$$

$$x_t = \gamma_0 + \sum_{k=1}^{M} \delta_k \, x_{t-k} + \sum_{l=1}^{N} \gamma_l \, x_{t-l} + v_t \qquad (4.11)$$

Where y_t and x_t are the two variables, u_t and v_t are mutually uncorrelated error terms, *t* denotes the time period and '*k*' and '*l*' are the number of lags. The null hypothesis is $\alpha_l = 0$ for all *l*'s and $\delta_k = 0$ for all k's versus the alternative hypothesis that $\alpha \neq 0$ l and $\delta_k \neq 0$ for at least some l's and k's. If the coefficient α_l 's are statistically significant, but δ_k 's are not, then x causes y. In the reverse case, y causes x. But if both α_l and δ_k are significant, then causality runs both ways.

In the present study, the causal relationship between the variables is shown using a simple equation as follows:

$$Y = X \qquad (4.12)$$

Where (X) refers to Libyan stock market (LSM) development and (Y) is economic growth. It also assumes that LSM development has a positive causal effect on the economic growth in Libya. The null hypothesis in the Granger causality test in this study suppose that; variable (X) does not Granger causes variable (Y), and that can be tested by running an OLS regression, and vice versa. By calculating the sum of squared residuals and the sum of squared residuals of a univariate autoregression, then calculating the F - statistic and comparing it with the critical F-value. If the F-statistic is greater than the critical value, the null hypothesis will be unexpectedly rejected, that (X) does not Granger cause and does not have positive effects on (Y), and conclude that (X) does Granger cause and has positive effects on (Y).

Moreover, there should be no distinction between endogenous and exogenous variables. So, after abandoning this distinction, all variables are treated as endogenous that means that in general reduced from each equation has the same set of regresses, which leads to the development of the VECM models.

Furthermore, it should be said that this study applied the causality test to investigate the relationship between LSM and economic growth because the researcher found that this method is the suitable analysis with the available data, and there are some studies which examine this relationship at the same time with the rarity of the data such as: (Ake, 2009) study about Cameroonian Stock Market.

iv. Vector Error Correction Model (VECM)

Vector Error Correction Models (VECMs) are a group of multiple time series models that estimate the speed at which a dependent variable -Y - returns to equilibrium the situation after a change in the independent variable - X directly. These models using for estimating both short and long run impact between time series. In addition to that, VECMs are useful models when dealing with integrated data, but it can also use with stationary data (Best). Following Best 2008, the basic structure of a VECM is as follow

$$\Delta Yt = \alpha + \beta \Delta Xt - 1 - \beta ECt - 1 + \varepsilon \tag{4.13}$$

Where EC is the model error correction component and proxies the speed at which prior deviations from equilibrium are corrected. Error correction models can use to estimate the following quantities of all X variables interest.

a. Short- term effects of X on Y
b. Long term effects of X on Y (long run multiplier)
c. The speed at which Y returns to equilibrium after a deviation has occurred.

The versatility of VECMs gives them a number of desirable properties.

- Estimates of short and long term effects.
- Easy interpretation of short and long term effects.
- Applications to time series data integrated and stationary.
- Can be estimated by OLS
- Model theoretical relationships

VECMs can be appropriate whenever time series data are available and are used in both short and long term links between multiple time series data (Best, (NA). Thus, the VECM describes how the examined model is adjusting in each period, time, term towards its long-run equilibrium state (Adamopoulos, 2010).

Besides, the aim of Vector Error-Correction Models is to know whether co-integration exists between two variables. Thus, to be true, there should be Granger causality in at least one direction. However, the most valuable aspect is that the co-integration does not reflect the direction of the causality between the variables (Ageli, 2013).

Moreover, since the variables are supposed to be co- integrated, and then in the short run, deviations from this long-run equilibrium will make the reaction to the dependent variable changes in order to impose their movements to the long-term equilibrium state. Thus, the vectors of co-integrated from which the error correction terms are derived each referring to an independent direction where a stable, meaningful long-run equilibrium state exists. The VEC specification obliges the long-run situation of the endogenous variables to converge to their co-integrated links while accommodates short-run dynamics. The model dynamic specification allows to omit the unimportant variables. Meanwhile, the error correction term is kept. The error correction term size indicates the speed of adjustment of any disequilibrium to a long-term equilibrium state (Vazakidis & Adamopoulos, 2009).

4.3.4.3 Empirical Data

The variables in the analysis are measure of economic growth and stock market development in Libya. The real gross domestic product (RGDP) is used as a measure of the level of economic development. In order to construct the level of stock market development, this study considers two aspects, namely size and liquidity. Market capitalization as a ratio of GDP (MCR) is used as a proxy of market size, while turnover ratio (TR) is used as proxy of market liquidity. Meanwhile, stock market index (IDX). The study data are monthly spanning the period 2008:M4 to 2011:M2. It does not extend the sample beyond 2011:M2 due to war in Libya. Following Ihsan et al., (2007); Ake & Ognaligui (2010) and Tang et al., (2007) the researcher interpolated RGDP data from annually to monthly data cubic spline interpolation method, due to the data of RGDP is available in yearly basis.

4.4 THE MODEL, PROPOSITIONS AND HYPOTHESES

4.4.1 The Specific Model

This study adopted the Vector Error Correction Model (VECM), Granger Causality test and Cointegration test methods, to estimate the role of LSM development on economic growth through the effect of LSM variables on real gross domestic product. RGDP. The use of this methodology expects the cumulative impact is taking into consideration the dynamic response between RGDP and the other examined variables, in order to investigate the causal relationships among them. The following multivariate model is estimated as follows:

$$Y_t = \beta_0 + \beta_1 MCR_t + \beta_2 TR_t + \beta_3 IDX_t + \mu_t \quad (4.14)$$

Where:

Y = Real Gross domestic Product RGDP

MCR = Market Capitalization Ratio

IDX = Libyan Stock Market Index

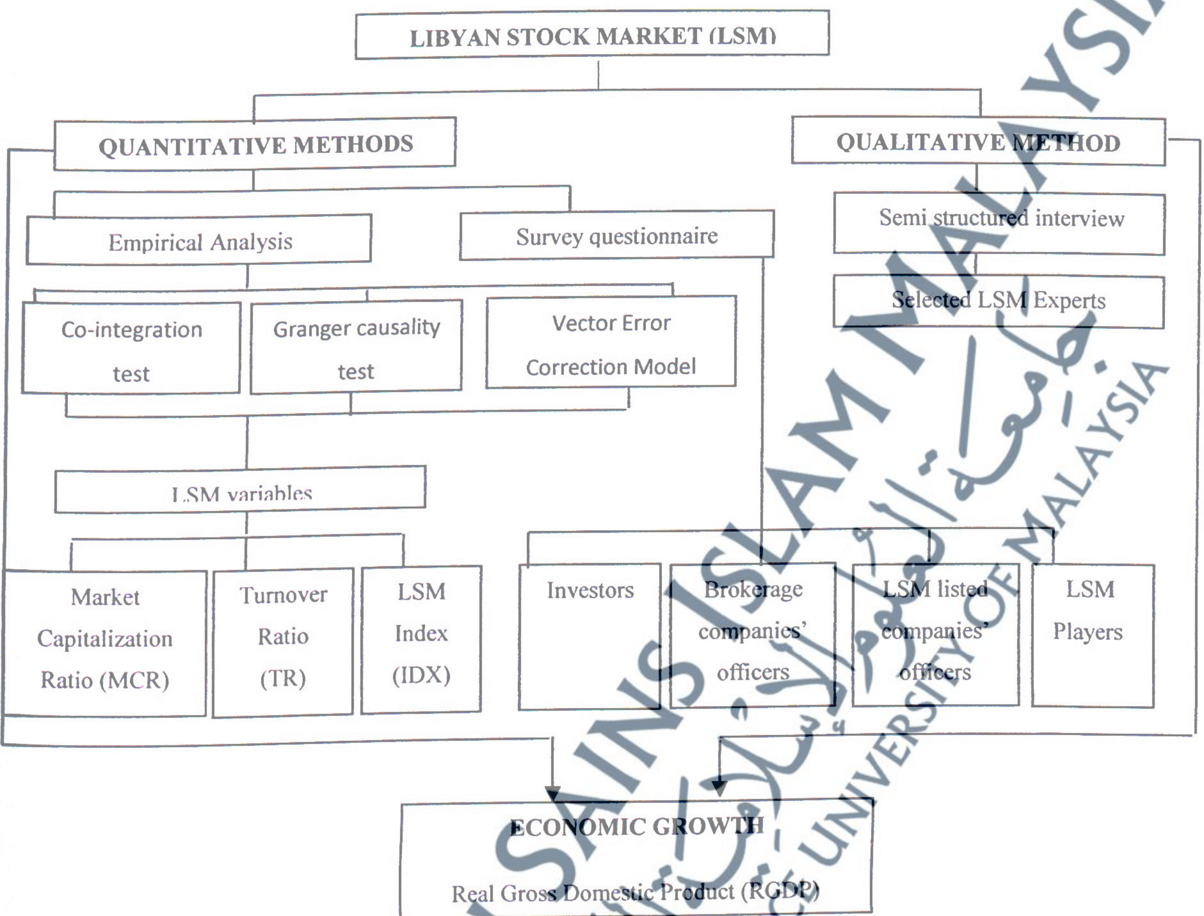
TR = Turnover Ratio

μt = The error term

The data that used in this analysis are monthly covering the period 2008:M4 to 2011:M2 for Libya, regarding. All-time series data are expressed in their first difference and E-views econometric computer software is used for the estimation of the model. Figure 4.3 illustrates the model of study through the explanation of the relationship between the study's variables.

4.4.2 The Study Model

Figure 4.4: The Study Model



4.4.3 Study Propositions and Hypotheses

This research contains qualitative and quantitative methods. Thus, it has propositions and hypothesis as follows:

4.4.3.1 Study Propositions

Researchers use propositions to express their expectations of the study findings in qualitative research. In addition, propositions are not tested statistically, but are inferred qualitatively whereas hypotheses require data and measurements to enable the researcher to test them statistically. Besides, propositions may be used to guide the formulation of hypotheses. Hypotheses may in turn be used to support or refute the researcher's propositions (Cooper & Schindler, 2003). The propositions of this study are as follows:

1. First Proposition

The Libyan Stock market has a role in economic growth in Libya.

2. Second Proposition

Libyan Stock Market performance is good comparing with its establishment date.

3. Third Proposition

Libyan Stock Market made good measures to attract local and foreign investors.

4.4.3.2 Study Hypotheses

A hypothesis is an initial statement about the relationship between two or more variables. Also, the hypothesis is a specific, testable prediction about what the researcher expects to happen in the study. In this research, the study divided into four themes based on the quantitative analysis as follows:

1. Survey Questionnaire Hypotheses

i. First Hypothesis

H0: LSM does not have a role in economic growth.

H1: LSM has a positive role in economic growth.

ii. Second Hypothesis

H0: The performance of LSM is still weak.

H1: The performance of LSM is good comparing with its establishment date;

iii. **Third Hypothesis**

H0: LSM does not make serious measures to attract local and foreign investor

H1: LSM made serious measures to attract local and foreign investors.

2. Co-integration Test Hypothesis

H0: LSM development (MCR, IDX, TR) doesn't have a relationship with economic growth (RGDP).

H1: LSM development (MCR, IDX, TR) has a relationship with economic growth (RGDP).

3. Granger-Causality Test Hypothesis

H0: LSM development (MCR, IDX, TR) doesn't Granger cause economic growth (RGDP)

H1: LSM development (MCR, IDX, TR) does Granger cause economic growth (RGDP).

4. Vector Error Correction Model (VECM) Hypotheses

i. First Hypothesis

H0 = Market Capitalization Ratio (MCR) has no impact on RGDP growth rate.

H1 = Market Capitalization Ratio (MCR) has a significant impact on RGDP growth rate.

ii. Second Hypothesis

H0 = Turnover Ratio (TR) has no impact on RGDP growth rate.

H1 = Turnover Ratio (TR) has a significant impact on RGDP growth rate.

iii. Third Hypothesis

H0 = Index (IDX) has no impact on RGDP growth rate.

H1 = Index (IDX) has a significant impact on RGDP growth.

4.5 CONCLUSION

This chapter discusses the research hypothesis based on the research method Vector Error Correction Model, Granger causality test, co-integration test and the questionnaire conducted with the LSM players, contribution companies' officers, brokerage companies and investors. Also, the interview conducted with different patterns in the Libyan stock market.

An in-depth analysis of this study is elaborated in the next chapter are, to examine the role, causal effect and performance of LSM development in promoting economic growth in Libya using monthly time series data. In addition to that, to investigate the measures taken by the LSM in order to attract the local and foreign investors to invest in the market that will lead to improve the whole economy.