

**AN EVENT STUDY ON THE IMPORTANCE OF FOREIGN
PORTFOLIO INVESTMENT, INSTITUTIONAL INVESTMENT
AND ITS IMPACT ON DUBAI FINANCIAL MARKET**

دراسة حول أهمية الاستثمار الاجنبي و المؤسساتي و تأثيرهم على سوق دبي
المالي

By

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ABSTRACT

The purpose of this study is to measure the effect of foreign and institutional investments on Dubai Financial Market. 519 trading sessions between June 2010 and June 2012 have been analysed using three measurement instruments. Logic tests, correlation matrix and regression analysis has been used to conduct the analysis. The study suggests that both foreign and institutional investments affect the overall market value and liquidity and there is strong positive relationship between the overall market value and foreign and institutional value. The study indicates that foreign and institutional investments has no impact on the general index of the market and the relation between them is independent

تهدف هذه الدراسة الى قياس تأثير الاستثمار الاجنبي و المؤسساتاتي على سوق دبي المالي. حلت بيانات 519 جلسة تداول بشكل يومي من شهر يونيو 2010 الى يونيو 2012. تم استخدام ثلاث وسائل لتحليل البيانات و مقارنة النتائج. الوسيلة الاولى هي اختبار منطقي لتمائل حركة البيانات و الوسلة الثانية هي اختبار مصفوفات الارتباط و الثالثة كانت تحليل الانحدار. تشير الدراسة الى ان قيم التداول للمستثمرين الاجانب و المؤسساتاتيين مرتبطة بشكل وثيق مع قيم تداول السوق بشكل عام و سيولة السوق تعكس سيولة هؤلاء المستثمرين. لم تجد الدراسة اي علاقة بين حركة المؤشر العام للسوق و بين الاستثمار الاجنبي و المؤسساتاتي و ان العلاقة بينهم مستقلة.

Keywords: Foreign Direct Investment, Foreign Portfolio Investment, Institutional Investment, Value, Dubai Financial Market, Liberalization, Market performance.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

In Dubai Strategic Plan 2015, Dubai Government states that it has successfully “developed its status as a major city, enhancing the well-being of its people and creating an environment that attracts businesses and individual”. Many initiatives have been taken in that front in different sectors.

In the financial services sector, Dubai started two main projects that helped in positioning itself as a major financial hub or city. The first one is Dubai Financial Market which has been established in the year 2000. DFM is secondary market for public companies stocks, government and corporate fixed income instruments and mutual funds. In 2005 DFM has become a public company and its shares have been offered to the public to trade in Dubai Financial Market.

The second main financial initiative is establishing Dubai International Financial Centre, DIFC. “DIFC is an onshore financial centre strategically located between the east and the west, which provides a secure and efficient platform for business and financial institutions to reach into and out of the emerging markets of the region”. When established, Dubai Government wanted DIFC to fill the time-zone gap between the major financial powerhouses in west like London and New York and its eastern competitors like Hong Kong, Singapore and Tokyo. Both DFM and DIFC thrive to attract local and foreign capital investment in different financial area like equity, fixed income, insurance and real estate.

Both DFM and DIFC have successfully attracted foreign investments in its both main forms. DIFC attracted Foreign Direct Investments (FDI) which is defined by the World Bank as the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. While DFM has attracted more of Foreign Portfolio Investment (FPI) which Levich (2001) described as vehicle of international investment. Foreigners access DFM by

two ways that Levich (2001) described. First is direct purchase of shares listed in DFM or indirectly through mutual funds.

Dubai Financial Market has been trying to upgrade its status from frontier market to an emerging market with Morgan Stanley Capital International (MSCI). According to THE REPORT DUBAI 2013 published by Oxford Business Group, An upgrade to emerging market status would raise DFM global profile, making it more attractive to international investors, some of whom would begin allocating part of their emerging markets funds automatically. DFM is still eager on this upgrade and made many steps towards the compliance of MSCI requirements. DFM implemented the sophisticated trading system of NASDAQ OMX X-Stream which is used by major exchanges in Canada, Switzerland and Russia. DFM changed its settlement system to Delivery versus Payment (DvP) and in 2013 it is expected that DFM will make changes to the custody and clearing procedures and hopes remain high that the upgrade will come soon.

1.2 Statement of the Problem

Jacob Thomsen, CEO of Saxo Bank told Oxford Business Group that an improved grade (from frontiers to emerging market) would “*likely*” boost investment flow into the country. But can we prove that this boost is important to DFM. Can we assess the importance of foreign investors to Dubai Financial Market empirically? Can we address who are more important, foreign investors, institutional investors or the local investors? Does foreign capital affect the movement of DFM index? When foreign investor’s net flow is positive or negative in particular trading day or week, does that mean the general market trend will follow their direction or view? What happens to market liquidity in relationship with the capital inflow and out flow of the foreign investors? We will try in this study to address those questions and explore how foreign portfolio investments affect Dubai Financial Market.

1.3 Background and Need

Literature, economic performance indicators, and previous research on foreign direct Investment and foreign portfolio investment suggest that nations should have liberal policies toward international investments. Statistics from the United Nations Conference on Trade and Development (UNCTAD) estimated the world FDI flows at 1.5 trillion in 2011 where the developed nations has contributed to more than 50% of that. The total world FDI in 1995 was 350 million only. Another report from UNCTAD finds that total global capital flows have been more than global trade in goods and services. However, this flow is cyclical and fickle the report warned. Papaioannou (2008) thinks FDI has skyrocketed in the last years since many countries lack the necessary capital to finance domestic investment and required additional international flow to fill the gap.

Another area which has been well argued in the literature is the effect of adding international stock to a particular portfolio. Levich (2007) thinks that international investment has many incentives like expected value gains, and diversifications gains. Grubel (1968) shows that investors could have enjoyed more favorable risk-return opportunity if they have diversified internationally in the 1960's.

These papers and reports provide empirical evidence on the benefits of adding foreign investment to a portfolio and address FDI and FPI importance to the whole economy but they do not assess the importance of foreign flow to a particular stock market in term of trading values (measure of market liquidity) and index movement.

Study of foreign investment flow in a particular market can help in answering the questions of our problem. Moreover it can assists decision makers of other financial markets in the region who have not yet *“liberalized”* their markets and have not opened the door for foreigners to invest in their domestic market. The results of the study might help fund managers or traders to create trading strategy based on the net flow of the different types

of investor on DFM. The findings can be of great interest to many people associated with DFM. Those include but not limited to DFM employees, traders in brokerage houses affiliated with DFM, and research departments of financial institutions who invest in DFM.

1.4 Purpose of the Study and its Significance to the Field

The purpose of this study is to empirically assess the importance of foreign portfolio investment and impact on Dubai Financial Market. It is logical for foreign investors to avoid emotional attachment with the place and the markets they trade in. When market conditions are positive, capital will flow and when it deteriorate this capital will chase other opportunities that add value in other markets. This sudden liquidity crunch results could be disastrous. This situation was witnessed during era of growth and contraction. DFM was in growth phase between 2004 and the beginning of 2006 where DFM General Index jumped 8 folds from 1000 to 8000 level. However, the bubble has been busted in mid-2006 where the market lost more than 50% of its capitalization. At the time of the global economic crisis in 2008, DFMGI declined by 78%. Therefore this research is important to find out the real impact foreign portfolio investment on Dubai Financial Market General Index and the overall market liquidity. Figure1. shows DFM general Index in the last 10 years.



Many studies have been done in the area of FDI and FPI. Most of them assess the relationship between these variables and the overall economy of the host nations in the long run. However, and to my knowledge, no study tried to assess the implications of FPI flow and the stock market hosting this flow in the short term. Moreover, since these flows could be in short terms like single trading session or week, it is beneficial to study how cyclical and volatile investment flow by non-attached investors like the foreign investors affect small market in the size of DFM. This study aims to make a contribution to literature in this field by providing new assessment variable, logic and techniques.

1.5 Research Aim & Questions

The aim of this study is to examine the different investor's categories in DFM and their importance to the market with meticulous attention to the foreign investors. The study will suggest which investor category has more effect on trading values and index movement. It will analyse the impact of foreign capital flow on the performance of DFM General Index over different time horizons and uncover their dynamic relationship. As part of this, the following research questions were investigated:

- How important are foreign investors and what is the impact of their trading in Dubai Financial Market in terms of index movement and liquidity.
- How important are institutional investors and what is the impact of their trading in Dubai Financial Market in terms of index movement and liquidity.

1.6 Limitations of the Study

This study focuses on the impact of foreign and institutional investment on the Dubai Financial Market General Index and overall market liquidity. This study will not assess other indicators such as the relationship of FPI and economy of Dubai, market volatility and market integration due to the limited supply of public data. Our findings may not be applicable even to the other UAE markets such as ADX where some of the listed companies do not allow foreign ownership like Etisalat nor it can be used in the context of Nasdaq Dubai where most of the securities listed are international. Due to time constraints, a larger sample could not be consolidated. DFM has started providing the public with foreign and institutional flow on daily basis on June 2012. Previous information about their daily flow was not available. The availability of long term data could have provided greater insights into the impact of international portfolio capital. If such info was available we would have tested the in-flow and the out-flow during the global financial crisis in 2008.

1.7 Dissertation Outline

Chapter 1 Introduction: This chapter provides a background on the subject and why we want to analyze it. It also presents how this study will add to the knowledge and the field.

Chapter 2 Literature Review: Critical review on the literature in the field of international investment. Review of the impact of international investment on some countries pre and post liberalization.

Chapter 3 Research Methodology: Discusses the setting, Definitions of keywords, variables, measurement instrument and the data collection procedures of the study.

Chapter 4 Results & Discussion: The results obtained will be presented with objective discussion of our findings.

Chapter 5 Conclusion: conclude the study and provide recommendation to different users and suggest further studies.

CHAPTER TWO

LITRERATURE

REVIEW

2.1 Introduction

Morgan Stanley Capital International (MSCI) examines many countries key economic indicators such as economic growth, financial market size, liquidity and accessibility. After examination, the countries will be classified as *developed, emerging or frontier markets*. Countries can be upgraded and downgraded between these classifications after MSCI conducts its systematic review to the markets included (or under consideration for inclusion). Their review is based on their own criteria and “extensive discussions with the investment community”. At the time of writing this study, 24 markets are considered developed and they include but not limited to USA, UK and Germany. The only country considered developed market in the Middle East is Israel. The (MSCI) Emerging Markets Index includes 2700 securities in 21 countries like all of the BRIC and from the Middle East, Egypt and Morocco. The Frontier Markets set across 31 countries including for example Argentina, Ghana and all of the GCC markets. DFM is trying to upgrade its status from frontier markets to emerging markets which according to many analysts and decision makers will attract more liquidity especially from the foreigners. But if DFM succeeded in this objective and attracted more foreign portfolio investments, will that achievement affects the market positively or negatively.

The literature review will address three areas related to international investment. The first section will address research related to the first form of international investment, foreign direct investment. We will review its importance, impact and how it is distinguished and related to foreign portfolio Investment. The second section will focus on research studies about foreign portfolio investment and how foreigners and market liberalization affect stock markets and host countries. Finally, the third section will conclude our review results and how our study can build up on previous research.

2.2 Foreign Direct Investment

2.2.1 FDI Background

With the globalization, market freedom and ease of communication, investing offshore or cross border can happen by visiting and relocating to a new country or continent in some cases and in other cases it takes only few clicks. Some last for long time and others might be as short as single trading session. This advancement has created many investment opportunities around the world for businesses and is redefining the way business is conducted, processes engineered and strategies implemented. To tap the global opportunities, businesses have actively engaged in Foreign Direct Investment (FDI). As a result, there has been a tremendous increase in the growth of global capital flows. The growth in global capital flows went hand in hand with rapid growth in global trade and GDP. However, Begg, Fischer and Dornbush (2005) argue that capital flow and FDI were present since 1870. They used Obstfeld (1999) figure which shows the percentage of capital flows during the last millennium for 12 OECD Economies. Obstfeld shows that capital flow was representing 3.5% of GDP Between 1870-1914 and the numbers got reduced due to the great depression to fluctuate between 0 and 1%. The figures started to climb after the end of world war two till date.

The International Monetary Fund (IMF) defines foreign direct investment as international investment made by a resident entity in one economy (direct investor) with the objective of establishing a lasting interest in an enterprise resident in an economy other than that of the investor (direct investment enterprise). "*Lasting interest*" implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the direct investor on the management of the direct investment enterprise. The enterprise in the definition referred to an incorporated enterprise in which a foreign investor owns 10 percent or more of the ordinary shares or voting power for an incorporated enterprise or an unincorporated enterprise in which a foreign investor has equivalent ownership (IMF, 1993).

FDI is an important component of the balance of payments and the financial account of any economy where a record of transactions related to international movements of ownership of financial assets is kept (Lipsey & Chrystal, 2004). They divided foreign direct investment into two categories. First is *Greenfield Investments* where a foreign firm builds a factory in a market other than its domestic market. That happens a lot in the automotive industry. BMW is a well-known automaker based in Munich, Germany has a manufacturing facility called BMW Manufacturing Company based in Spartanburg, South Carolina, USA to manufacture its X-Series line. There could be many reasons for such investment including but not limited to cost cutting, availability of skilled manpower and improved logistics.

The second category is *Brownfield Investments* where foreign investor takes over a controlling stake in a firm previously controlled by resident or local investors. If we use the automotive industry, that happened when TATA Group, an Indian business conglomerate acquired Jaguar Land Rover which is still based and has its manufacturing facilities in the UK.

Those transactions create two types of transactions depends on the economy position. For the USA BMW investment is *Capital Inflow* since the money entered the US economy while Germany lost this investment and it is recorded as *Capital Outflow*.

Lipsey and Crystal (2005) claim that FDI is higher in industries that produce customized products like consumer goods. While industries that mass produce or produce undifferentiated products like steel, tends to be in home countries. They argued that Multi-National Corporations (MNC) play a major role in driving FD and explained that no country can develop into an integrated part of the world economy without presence of MNC's. They explained that although Japan and Taiwan as an example grew without major infusion of FDI, they did so before the globalization of the world economy. They doubted any country could achieve sustained growth without substantial amount of MNC FDI. Agrawal & Khan (2011) confirms this claim where they prove that FDI has contributed to the growth of India and China. Dubai has

also grown with infusion of domestic and foreign investments. In a mega project like the Palm Jumeirah, the master developer was Nakheel which is a government related entity. Its role was to develop the infrastructure and parts of the projects on the palm. Lands and properties were sold by Nakheel to local and foreign investors to develop their own projects. Kerzner International, a South African hospitality business, developed Atlantis the Palm and The One & Only the Palm. Those projects considered prime tourist destinations in Dubai today.

2.2.2 FDI Benefits and Advantages

Whether a country is classified as developed or emerging, to sustain economic growth or stimulate growth, capital and liquidity is needed. Many countries have aggressive growth plans but financing these plans could limit their ambition. To overcome this, different strategies have been adopted by different countries. Some tapped the international debts markets but have faced issues refinancing international debts during the recent economic crisis. Others freed and relaxed economic policies and reduced hostility against the attraction of foreign direct investment. Many reasons were behind such liberalisation.

Lipsey and Chrystal, (2005) think there are five major advantages of accepting FDI. First one is higher paying jobs to the local human capital. Second, the new projects do not have to be financed by the local savings. Third, it could link the local economy to the global economy by ways and methods that have not been used by the local expertise. Fourth export global knowledge, methods and know-how of Multi-National Corporations (MNC). Fifth, it provides advanced technologies that are adapted by the global developed companies and nations.

Chatterjee, (2005) thinks FDI is less volatile than private flow and provides a stable source of financing. He agrees with Lipsey and Chrystal (2005) on the facilitation of international transfer of technology. However, he thinks the

technology transferred comes as package with capital, skills and managerial knowhow to use this technology efficiently.

Hymer (1960), thinks firms could get different advantages depends on the industry they operate in and region they cover. For example if two companies operate in same industry but with different production capacity, the firm with extra capacity has advantage that it can sell in foreign market which might increase sales and profitability. The other reason which is associated with the first one is having international operation can be more profitable because it remove local competition barrier. If we add those two reasons we could say investing in foreign market could create diversification which could reduce several risks. Another interesting idea has been presented by Hymer. If local company enters new international market, it could merge with another company in that market and they could create synergies and might create new international player. Other advantages that could be exploited are acquiring factors of productions at lower cost.

Blomstrom & Kokko (2003) acknowledges that FDI import new technologies and skills to the host nations but emphasised that the local companies should absorb those advantages. They encouraged countries to support and invest in this process to help the local companies to compete with the international counterparties.

2.2.3 FDI Risks & Implications

As we know whenever we discuss anything, we have to bring the pros and cons of the subject and then decide on the next action. Literature has shown us many advantages to the nations and the companies that involve them self in FDI. However there is cost and implications, sometimes unfavourable to that decision.

Hymer (1960) stated that when firms enter into new market, they expose themselves to new economy, laws, governments and competitor. Adapting to those changes comes with material financial cost. Although many countries

encourage FDI because they suffer from high unemployment according to Blomstrom & Kokko (2003), Hymer argues that many local will disagree to work with international companies. We can see the point in Hymer argument here in DIFC, the base of many international banks. As DIFC is free zone, Emiritization is not mandatory for them as well as national pension scheme. A national will think twice before joining such banks as in the local banks he is more protected.

To the contrary, when Etisalat entered the Saudi Market to form Mobily, Saudi Arabia asked for minimum Saudi Staff to be 30% in order to grant the license for the first international telecom operator. Today, more than 80% of Mobily are Saudi nationals.

Chatterjee (2005) thinks FDI creates short term unemployment due to restructuring of the company. He added to that increase market concentration. He also pointed to incomplete utilization of the FDI in nurturing local human capital to be as good as its international counterparts due to incoherent policies and unfavourable regulatory conditions.

Aitken and Harrison (1999) agree with Chatterjee (2005), and Lipsey and Chrystal, (2005) that FDI can help in technology transfer. However, they found that FDI increase productivity only in small firms with less than 50 employees in Venezuela. They also found that there is negative relationship between productivity in domestic plants and FDI. Hence, when FDI increases, productivity decreases in domestic factories. They interpreted this situation as market stealing effect. Moosa (2002) believes that MNC's who usually conduct FDI are beyond the control of their nations and the FDI host nations. Their main objective is to maximize bottom line not the growth and prosperity on the host nations. They will buy resources and materials where the prices are low and they will sell where the return is high.

Another implication multinational corporations have to deal with is translation risk. As we know corporation report their figures yearly based on the currency of their home country. Looking at BMW example at the beginning of the

chapter, BMW have to translate its USA subsidiary figures from US dollar to the Euro. This translation is subject to market risk. Big Corporations can hedge this risk using different hedging instruments like currency forwards and options but the hedging cannot eliminate this risk.

2.2.4 FDI, The China and India Case

Emerging markets have exploited the unprecedented opportunities Capital flows and integration of markets has for to achieve faster economic growth. The best example of the emerging markets is China and India. Agrawal & Khan (2011) attempted to investigate the effect of FDI on economic growth of India and China. They have studied different economic indicators like GDP, Human Resources and FDI between the years 1993 and 2009.

Agrwal & Khan (2011) believe that the recent financial crisis reshaped the economic powers of the world and they think the Asian economies are dominant now, with China and India being the fastest growing economies in the world due to the adoption of liberal economic policies in the nineties. However, they believe China has outperformed India in different economic term including FDI. They elaborated that China has even outperformed USA in attracting FDI according to UNCTAD Survey conducted between in 2010 although India used to attract more FDI in the 1980's.

With these growth figures, Agrwal and Khan (2011) wanted to test the impact of FDI on economic growth of China and India. They have used multiple regression model to analyze their collected data where GDP was dependent variable while Human capital, FDI labor force and capital formation were independent variable. Their study confirmed that FDI promote economic growth, where 1% increase in FDI result 0.07% and 0.02% increase in GDP in China and India respectively. They concluded by China superiority was due to the bigger market size, accessibility to export market, government incentives and developed infrastructure. On India, they think they success is due to talented management system, good regulatory environment and transparent work systems.

2.2.5 FDI in Dubai

As we stated in the introduction, Dubai Government has positioned itself as a major hub that links the west and east. To attract FDI from west and east, Dubai has established Dubai FDI office under its Department of Economic Development. The main objective of this organization according to their official website is “to support, stimulate and sustain foreign investment in Dubai and ensure all ventures are consistently managed with commitment and dedication”.

To support this objective Dubai has created more than 20 free zones that do not require foreign investors to have local sponsor to establish a business. Those zones cater to many sectors including but not limited to financial services, aviation and technology. In financial services, Dubai International Financial Centre operates its unique regulatory framework that cater international firms. Companies operating there can choose to use the common law instead of UAE law in their litigation. Another example is Dubai Healthcare City which attracts business to make Dubai a destination of Medical tourism (FDI Dubai 2013).

The latest statistical report on FDI in Dubai has been issued by Dubai Statistics Centre in 2012 to representing FDI figures of the years 2010 and 2011. The report shows increase of 11% year on year from AED111 billion in 2010 to 123 billion in 2011. Major investments went to the financial & insurance, wholesale & retail trade and real estate activities sectors with percentages of 37%, 26% and 20% respectively. The growing sectors of FDI were Human health and social works, information technology, logistics sectors with growth of 816%, 40% and 30% respectively. The top three countries that invest in Dubai are UK which invest mainly in the mining and quarrying, Japan in the manufacturing and France in the construction.

2.3 Foreign Portfolio Investment

2.3.1 FPI Background

Globalization and financial integration dismantled the controls on international capital flow (Begg, Fischer & Dornbush, 2005). Technological and telecommunication advancement made it easy for American investors being institutional or retail to invest in emerging markets through different platforms like Reuters Dealing, E-Trade or Mubasher Financial Services here in our region. According to them, current financial markets have two crucial features. First, restrictions on capital flow has been eliminated, where funds can move freely to chase the highest return. Second, “trillions of pounds are internationally footloose, capable of being switched between countries and currencies when assets in one currency seen to offer a higher rate of return than assets elsewhere”.

Foreign Portfolio Investment (FPI) is the second major form of international investment after Foreign Direct investment. FPI is going to be the axis of this study. Lipsey & Chrystal (2004) define portfolio investment as investment in bonds or a minority holding of shares that does not involve legal control. Hymer (1960) believes the control of the enterprise is the distinguish factor the separate FDI from FPI. If the investor control the enterprise, then it is FDI, if he is not then it is FPI. He used the United States Department of Commerce measure to define control where 25% of equity or more is owned by American to be considered as American-controlled foreign enterprise. IMF used the threshold of 10% ownership to define control. In the UAE, Foreigners are not allowed to control more than 49% onshore, while they can wholly own their businesses in the free zones. Dubai Financial Market publicly publishes the ownership of publically traded companies if they exceed 5% regardless of nationality.

2.3.2 FPI Motivators

Hymer (1960) agrees with Begg, Fischer and Dornbush (2005) that investors will maximize their profit by investing where the return is higher and gave example on interest rate. He stated that capital will move from countries where interest rate is low to countries with high interest rate if there are no barriers to movement, uncertainties or risk. But he elaborated that if we use these conditions, then no movement will happen. But looking at the investors risk appetite, movement can happen or for the sake of diversification.

Arnold (1998) gave example where risk and return can give benefits to both foreigners and locals. As we know foreign investment exposes investors to exchange risk. This risk can be used to create an investment opportunity. For example if the dollar depreciated against the EURO, Germans might be interested to buy American assets. The German increased demand might give the American opportunity to sell at higher prices.

Papaioannou (2008) looked at international bank capital flow from different angle. He thinks “weak protection of property rights, legal inefficiency and high risk of expropriation are major impediments to foreign bank capital”. On the other hand he suggested “political liberalization, privatization, and other structural policies enable the economy to attract substantially more foreign bank capital”.

FPI can happen in different form. For example can be part of international lending, purchase of cross border government bonds or acquiring equity or shares in a public or private company. As our study is based on the effect of FPI on DFM which is a leading stock exchange in UAE and Middle East, it is important to review similar studies that have been done on our subject but in different markets.

2.3.3 Liberalization

Henry (2000) defines liberalization as a decision by country's government to allow foreigners to purchase share in their stock market. Zervos & Levine (1998) found that "stock markets tend to become larger, more liquid, more volatile and more integrated following liberalization". We can use Zervos & Levine (1998) who studied different indicator to reach their results. They studied market size by looking at market capitalization as a ratio to GDP, market liquidity, by looking at the value traded ratio to GDP, volatility by studying 12 month rolling standard deviation and they have used ICAPM and IAPM to compute market integration. They also found "countries with firms that widely disseminate comprehensive information have larger, more liquid and more internationally integrated stock markets". They have done their study on 16 nations that has opened it market for foreign investment in the 1980s and 1990's. 13 out of 16 markets have seen significant development following liberalization.

Henry (2000) Studied 11 developing countries that liberalized it market for three years he found that 9 out of 11 experienced growth in year one, 10 out of 11 in year two but only 8 out of 10 experienced growth in year three. His analysis go hand on hand with previous research which presumes sustained growth. However, he thinks that such growth is volatile and can be short term.

Bekaert and Harvey (2000) assessed the different entry method (American Depositary Receipts, country funds, and direct participation) in stock markets of emerging countries and its impact on returns volatility, beta and correlation. They agree with Henry (2000) that capital market integration reduces cost of capital but not to the extent they expected. They also agreed on the growth generated after liberalization. They found growth between 66 and 75 basis points in the investment to GDP ratio. They also reported small increase in volatility following the access to foreigners. What distinguishes their result from the other studies is the study of correlation. As many economists put diversification as major reason for international investment, Bekaert and Harvey (2000) found small increase in correlation between emerging market

studied and world markets. They found that increase magnitude is minimal on the international investment decision.

2.3.4 International Investment for Risk Management

Levich (2001) thinks diversification is the central motive for international investment he empirically proved that portfolios have smaller total risk when they are constructed from a universe of international firms instead of single country. He showed that risk level of at about 27% if we construct a portfolio of US stocks compared to single US stock. When international stocks are introduced, risk decline more quickly and level of at 11.7%. He thinks the other risks are systematic and non-diversifiable. He even proves that diversification internationally is more powerful than diversification by industry domestically. He proved that after studying portfolio of stocks in seven industries from a single country versus a portfolio of stocks of 12 European countries.

2.4 Conclusion

The study of international investment has been widely argued in the literature, especially in its two main forms, Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI)

Studies on FDI recommends liberalization to foreigners as opening the markets to them can lead to sustained economic growth. FDI has many advantages different parties involved. For the host nation it could sustain or stimulate growth, create jobs and integrate it with the global economy. To the companies, it facilitates transfer of technology, know-how and international managerial skills. Moreover, it gives opportunity for companies with high production capacity to sell it good and products to other markets will eventually can create more value and diversify competition risk. Although there are many advantages to the FDI, there are cons too. FDI has high setup cost, expose companies to translation risk and expose it to new regulation and markets practices and policies.

Studies attribute to technological and communication advancement in facilitating foreign portfolio investment especially in stock markets. Many studies have been conducted on the effect of economic liberalization and its effect on stocks exchange. Empirical studies proved that such liberalization stimulate growth, liquidity and increase volatility in participated emerging markets. Further studies proved that adding international stocks to a portfolio reduce it risk. They went further and proved that international diversification is better than industry diversification when it comes to risk management.

Most of the studies conducted have been done in context of the impact of FPI on the economy over years. Moreover, all of the studies have been done on large emerging markets like India and China which are now considered economic superpowers. To My Knowledge No studies has been done on markets with size and age of Dubai Financial Market. Moreover, the relationship between daily movement of foreign investment and the impact on particular market has not been the focus of any previous analysis. We will try in this study to address this gap and we will compare our end results with what those great economists have found.

Chapter 3

Methodology

3.1 Introduction

The following research questions were addressed in this study:

- How important are foreign investors and what is the impact of their trading in Dubai Financial Market in terms of index movement and liquidity?
- How important are institutional investors and what is the impact of their trading in Dubai Financial Market in terms of index movement and liquidity?

To assess the impact of foreign investors, we constructed measures of stock market performance and liquidity, net trading of foreign investors, net trading of institutional investors and then examined the empirical relationship between these stock market indicators to determine our findings. We test weather indicators of market return and liquidity change following capital inflow and outflow by foreigners and institutional investors in DFM. To do this, we first identify the event dates of the involved portfolio flows. We then use the technique of (1) logic Tests (2) correlation (3) regression analysis to analyze the relationship. This event study methodology does not control for other factors affecting stock market performance.

This chapter is organized as follow; Section 2 describes the setting of the study. Section 3 gives definition of the term used. Section 4 describes the study variables. Section 5 describes our study measurement instrument. Section 6 is on Data collection and procedures. The last section is on data analysis.

3.2 Setting

In the United Arab Emirates, there are 3 major financial markets. Dubai Financial Market (DFM), which lists securities issued mainly by Dubai based companies. Abu Dhabi Stock Exchange (ADX) which lists securities issued by Abu Dhabi and emirates other than Dubai. Nasdaq Dubai which lists international securities. Our study will be on the impact of foreigners who invest in DFM only. DFM started publishing foreign investment flow data on

daily basis in mid-2010. In this study, we will analyze data for two years starting from June 2010 to June 2012. It is worth to note that the recent financial years were extraordinary as we have experienced financial crisis that have affected the entire globe. The years 2010-2012 were the years were we started recovering from the global financial meltdown and economies and market started to post green figures.

3.3 Definitions and Relevance

Foreign Investors: As we aim to analyze the impact of foreign investment in DFM we first have to define and classify the different investor's categories that DFM use. DFM reports trading figures value by nationality and by form. In term of nationality, investors are classified as (1) UAE National, (2) Arab National, (3) Gulf Cooperation Countries (GCC) National or (4) other nationality. Any investor with nationality other than UAE is considered "*foreign Investor*". When classified by Nationality, we disregard the form of the investors being retail or institutional.

Institutional Investors: DFM recognize (1) Banks, (2) Companies and (3) Institutions as institutional investors. Retail investors are the obverse of this category. DFM disregard the nationality of the institutions in their report. Although our analysis would have been more precise if they have reported the nationality of the institutions, we will use those figures to report our findings and compare it with the foreigners. Any study has to adapt to its limitations and we hope DFM will address this one day.

Index: Dubai Financial Market General Index (DFMGI). It is the official index of DFM and the one recognized by the UAE market regulator, Emirates Securities and Commodities Authority (ESCA). We will use the closing figures of each trading session to conduct our analysis.

Index Movement: Percentage of change between the current closing and previous closing. DFM use this method to announce if the market is green or

red for any particular trading session. Moreover, it is globally used measure to quantify movement of stocks and indices.

Foreign Buy: Value of stocks bought by foreign investors in Arab Emirates Dirhams (AED).

Foreign Sell: Value of stocks sold by foreign investors in AED.

Net Foreign Investment: The difference between the values of foreigners buy and sell in AED. This value can be positive or negative. We can get negative value if the total value sold is more than total value bought “*capital outflow*” while a positive number represent “capital inflow”. The same explanation goes for the net institutional investment.

Institutional Buy: Value of stocks bought by institutional investors in AED.

Institutional Sell: Value of stocks sold by institutional investors in AED.

Net Institutional Investment: The difference between the values of institutional buy and sell in AED. This value can be positive or negative.

Volume: Total number of stocks exchanged in trading session. It is noteworthy to explain that although there are two legs of any trade, bid and offer, if transaction is matched the volume is not double counted. For example if A bought 100 Emaar shares from B, the market will calculate the volume of this transaction as 100.

Value: The value of shares exchanged in single trading session. Value is good measure of market liquidity as it shows monetary value of the shares traded.

3.4 Majors Assessment Variables

To assess what happens to DFM post foreign and institutional investor's flows, we have identified dependent variables that affect other independent variables. The first dependent variable is Index movement. We calculate that by dividing the index point's difference of two consecutive trading sessions by the closing value of previous date. This method is widely accepted in business to assess performance. It is also used to calculate the returns on many investment instruments. The second dependent variable is the trading session value. The value indicates market liquidity and we can measure the effect of capital flow on that absolute figure. The third dependent variable is derived for the value which is the value movement in percentage term. We will calculate the value movement using the same method used to calculate the index movement to measure if the liquidity has increased or decreased in the market. Although that we collected volume data of the entire period tested, I decided that we are not going to use this indicator. The reason is volume cannot assess neither performance nor liquidity for this study. For example, in trading session A, if 100 Emaar shares have been exchanged and Emaar share price is AED 1.00 the value will show AED 100 and the volume will show 100. In trading session B, if 100 Emaar shares have been exchanged and Emaar share price is AED 5.00 the value will show AED 500 and the volume will still show 100. The increase in the price will affect the index and the value but not the volume.

As we are studying the impact of foreign investors on DFM, it is vital to include the following independent variables. The net flows of foreign investors, the total value of foreign investors on both buy and sell side and their daily movement. We have also identified net flow of institutional investors and their values and movements as independent variable. Since DFM is reporting separate data for institutional investors. It would be of an interest to compare the impact of this category on DFM and compare how the flow of those two major categories affects the market. As I stated before, having the nationality of the institutional investor would have been more accurate indicator, however, this is one of the limitation have been faced in collecting the data.

3.5 Measurement Instruments

Three measurement instruments have been identified to evaluate the relationship between the dependent and the independent variables. We have seen consistency in our results when the results have been compared between the different instruments. We used logical test, correlation matrix and simple linear regression to analyze our data. Microsoft Excel 2010 built in Data analysis tools have been used to conduct the analysis.

3.5.1 Logic Test

The first instrument is logical conditional statements. It is a feature of programming language which perform different actions depending on whether a condition is met or no. "IF" logical test has been constructed to determine IF action has been done by foreign investor or institutional investor (Increased their liquidity for example) is meeting certain parameters (Could be increase in the index or market value), then a condition is met (positive impact) which mean our assumption is correct. If the condition is not met, then our assumption is false. The general syntax of the IF logical test is:

IF (logical test, [value if true], [value if false])

We have used nested functions since we had multiple conditions and parameters to be met. The syntax we used:

IF (OR(AND [logical 1],[logical2])AND([logical3][logical4]),[value if true],[value if false])

Detailed description of the logical tests is on the **subheading 4.7.1.**

3.5.2 The Coefficient of Correlation

The relative strength of a linear relationship or the association between two variables is typically measured by coefficient of correlation (Levine, Stephan, Krehbiel & Berenson, 2005). Denoted by the Greek letter (ρ), the coefficient of correlation has the following characteristics:

- Always between +1 and -1
- If the coefficient of correlation is +1, then the returns on the two variables are linearly related with positive slope. This is perfect positive correlation.
- If the coefficient of correlation is -1, then the returns on the two variables are linearly related with negative slope. This is perfect negative correlation.
- If the return distributions are independent, then the coefficient of correlation will be zero .

Benninga (2008)

The formula used to calculate the coefficient of correlation is

$$\rho_{X,Y} = \frac{\text{cov}(X, Y)}{\sigma_X \sigma_Y} = \frac{E[(X - \mu_X)(Y - \mu_Y)]}{\sigma_X \sigma_Y}$$

Where, the correlation is equal to the covariance of variable divided by the variables standard deviation.

The study of the coefficient of correlation is very important for this study. Since we have many variables where many affect each other, it is logical to study those relationships and interpret the result in order to decide if the foreign investments have a relationship with market movement and liquidity.

3.5.3 Regression Analysis

“Regression analysis has two primary uses. First is prediction. It helps in predicting dependent variables based on the value of independent variable. The second use which is of our interest is to study the relationship between a dependent and independent variable. It can also quantify the effect that changes in the independent variable have on the dependent variable” (Levine, Stephan, Krehbiel & Berenson, 2005).

We stated that the correlation will indicate if there is relationship between the foreigners and the market but to which degree? The regression analysis through its components will answer this question. The Components that we will assess are

- The R^2 of the regression: shows % of variation in the dependent variable is accounted for by variability of the independent variable

$$R^2 \equiv 1 - \frac{SS_{\text{err}}}{SS_{\text{tot}}}.$$

Where

$$SS_{\text{err}} = \sum_i (y_i - f_i)^2$$

The sum of squares of residuals

$$SS_{\text{tot}} = \sum_i (y_i - \bar{y})^2,$$

The total sum of squares

- The slope of the regression: Shows the sensitivity of the dependent variables to the independent variable. In other word, how 1% increase or decrease in the independent variable will affect the dependent variable is percentage term. It is calculated by deviding the covariance of the returns of X and Y by the variance of X.

$$b = \frac{n(\sum xy) - (\sum x)(\sum y)}{n(\sum x^2) - (\sum x)^2}$$

- The intercept: shows that irrespective of changes in the independent variable what happen to the performance of the dependent variable.

$$\text{Intercept} = \frac{\sum y - b(\sum x)}{n}$$

3.6 Data Collection and Procedures

The main source of numerical data was the website of Dubai Financial Market through downloading their daily bulletin. DFM publishes daily, weekly, monthly, quarterly and yearly bulletins. These bulletins give snapshot about the trading sessions. They summarize what happened during trading sessions in terms of index movement, value, volume, sectorial performance and highest shares traded in term of value and volume. Moreover, they give information about foreign and institutional investor's flows for that particular trading session(s). 519 daily bulletins have been collected representing 519 trading session between Sunday 06/06/2010 and Thursday 28/06/2012. DFM conduct 5 trading sessions a week starting on Sunday and ending on Thursday.

Unequally spaced time series (values are not available during non-trading days like holidays (Chan 2002)) has been consolidated for closing index, index return, foreign buy, foreign sell, net foreign flow, institutional buy, institutional sell, net institutional flow, volume, total session value, total foreigners value, total institutional value and daily changes of these value for each category for the 519 sessions. (Refer to 3.3 for definitions).

The bellow Arithmetic Return formula has been used to compute the rate of return on the index. Our objective was not to calculate rate of return literally, but to gauge the index movement. We wanted to compute buy how much percentage the market moved up or down in order to measure its performance.

$$r_{arith} = \frac{V_f - V_i}{V_i}$$

Where

r_{arith} : Rate of movement is our study instead of rate of return

V_f : Final value or closing index T

V_i : Initial value or opening index T-1

I tested the usage of compounded return formula and the results were very similar and do not change the end findings at all.

Similar procedures has been used to consolidate the data but for weekly basis. I wanted to measure the effect on daily basis which is the shortest trading period and weekly basis to check if any changes happen over the trading week and to confirm if our results are consistent when the period changes. Further analysis could be done for monthly, quarterly and yearly figures.

Summary output tables have been created to consolidate the results. Separate output tables have been created for the entire study data, 2010 period, 2011 and 2012 to compare the results. Those tables include the number of the observations, the observation that has passes out logical tests and the observation that failed and success rate of our tests. Separate tables have been created also to consolidate the results of the correlation analysis and the regression analysis.

3.7 Data Analysis

As we mentioned in the measurement instruments, 3 analysis tools have been used in this study to determine our findings. Logical tests to check if particular events do affect our dependent variable. Correlation analysis to discover the relationship between the variables. Regression analysis to get detailed analysis of the relationship between the data. We will compare the finding of the 3 instruments together and will evaluate if the results are consistent

3.7.1 Logic Tests

Two groups of logical test has been created with objective to determine the effect of events. The first group has four tests to determine the effect of foreign and institutional net flow on the index movement. The second group has four tests also to determine the effect of foreigner and institutional investor's liquidity (trading values) to the entire market liquidity.

Test 1: Evaluate the effect of foreign investor's net flow on the index movement of the same trading session (T+0).

Variables: foreign investment net flow as independent and market index movement as dependent.

Success: If the net flow and index movement moves in the same direction, i.e. if the net flow is positive and the index movement is positive or vice versa. We used "YES" to indicate a success as we want to confirm if the if the dependent variable has been affected by the independent variable.

Fail: if the net flow and index movement moves to different directions, i.e. flow is positive and index movement is negative. We used "No" to indicate a fail of the test.

Test 2: Evaluate the effect of foreign investor's net flow of previous day (T-1) on the index movement of the same trading session (T+0). The foreign investors flow data are published and becomes public post the trading session close. Hence we test the effect pre publish in TEST1 and post publish in TEST2.

Variables: foreign investment net flow of T-1 as independent and market index movement as dependent.

Success: If the net flow T-1 and index movement moves in the same direction

Fail: if the net flow T-1 and index movement moves in opposite directions.

Test 3: Evaluate the effect of institutional investor's net flow on the index movement of the same trading session (T+0).

Variables: institutional investment net flow as independent and market index movement as dependent.

Success: If the net flow and index movement moves in the same direction.

Fail: if the net flow and index movement moves in opposite directions.

Test 4: Evaluate the effect of institutional net flow of previous day (T-1) on the index movement of the same trading session (T+0).

Variables: institutional investment net flow of T-1 as independent and market index movement as dependent.

Success: If the net flow T-1 and index movement moves in the same direction

Fail: if the net flow T-1 and index movement moves in opposite directions.

*Tests 1 to 4 as we can see measure the effect of foreign and institutional investments on the general index pre and post the data publication.

Test 5: Evaluate the effect of foreign investor's net flow on the market total value movement of the same trading session T0.

Variables: foreign investment net flow as independent and value movement as dependent.

Success: If the net flow and value movement moves in the same direction, i.e. if the net flow is positive and the value movement is positive (liquidity increased) or vice versa.

Fail: if the net flow and value movement moves to different directions, i.e. flow is positive and value movement is negative.

Test 6: Evaluate the effect of foreign investor's total value movement on the market total value movement of the same trading session T0.

Variables: foreign investment total value movement as independent and market value movement as dependent.

Success: If the foreign investor's total value movement and market value movement moves in the same direction.

Fail: If the foreign investor's total value movement and market value movement moves in opposite direction.

Test 7: Evaluate the effect of institution investor's net flow on the market total value movement of the same trading session T0.

Variables: Institutional investment net flow as independent and total value movement as dependent.

Success: If the net flow and total value movement moves in the same direction.

Fail: if the net flow and value movement moves in opposite directions.

Test 8: Evaluate the effect of institutional investor's total value movement on the market total value movement of the same trading session T0.

Variables: Institutional investment total value movement as independent and market value movement as dependent.

Success: If the institutional investor's total value movement and market value movement moves in same direction.

Fail: If the institutional investor's total value movement and market value movement moves in opposite direction.

*Tests 5 to 8 as we can see measure the effect of foreign and institutional investments on the market value or liquidity.

3.7.2 Correlation Matrix

Two Correlation Matrixes have been constructed to discover the dynamic relationship between our variables. First matrix tests the relationship between the variable with absolute values; (1) index close, (2) net foreign investors flow, (3) net institutional investor flow, (4) foreign investors value, (5) institutional value and (6) market value.

The second matrix tests the relationship between the value with percentage of change; (1) index movement, (2) market value movement, (3) foreign value movement and (4) institutional value movement.

3.7.3 Regression Analysis

We have run regression analysis to analyze in detail the type of relationship between our variable that had either positive relationship or independent relationship when we used the correlation test. We want to further analyze the relationship and measure sensitivity of the variable to changes between them. Moreover and in the case of independent relationship, we analyzed how random are the effect caused by the foreign and institutional investment.

Chapter 4

Results & Discussion

4.1 Introduction

It is good to start this chapter by a quote from Sir Winston Churchill where he said “However beautiful the strategy, you should occasionally look at the results”. This study aim is to find out if foreign investors have an impact on Dubai Financial Market. In this chapter we will demonstrate the results after putting the collected under several tests and analysis. This chapter is organized by the three instruments that we have used to determine our finds. First we will demonstrate the results of the logical test, then the correlation analysis and last the regression analysis.

4.2 Results by Logic Tests

Note; before reading the results I strongly recommend reading the logical tests description in chapter 3 under the number 3.7.1

4.2.1 Results of Tests 1-4, Market Index and Net Flows

Table1. <i>Did the index movement reflect the direction of foreign & institutional flow?</i>				
	Test 1	Test 2	Test 3	Test 4
YES	249	246	299	244
NO	269	272	219	274
Total Count	518	518	518	518
Success Rate	48%	47%	58%	47%

*Test 1: Evaluate the effect of foreign investor's net flow on index movement of the same trading session (T+0).

*Test 2: Evaluate the effect of foreign investor's net flow of previous day (T-1) on index movement of the same trading session (T+0).

*Test3: Evaluate the effect of institutional investor's net flow on index movement of the same trading session (T+0).

*Test 4: Evaluate the effect of institutional net flow of previous day (T-1) on index movement of the same trading session (T+0).

Data of 518 trading session has subject to 4 logical tests to determine if the flow of the foreign & institutional investors being positive (buy) or negative (sell) has an impact on the movement of the index .the first two was on foreign invetment flow and the later were for the institutional flow. We can see from the success rate that the flow of these investor categories has not affected the index movement. If we take test one which measure the effect of net flow by foreign investors on the index of that particular trading session, we can see that only 48% of the time they have affected the movement while for 52% of

the time the local investor flow which is the obverse was dominating. The highest result we found is from test 3 which measure the effect of the institutional investors on the index on the same trading session. The result was 58% of the time the movement of the index were in the same direction of the flow of the investor. While in 42% of the time the index moved against the flow of the institutional investor and reflected the direction of the retail investors.

Similar procedures have been done to on the weekly data which are shown on table 2.

<i>Table2. Did the index movement reflected the direction of foreign & institutional flow (weekly)?</i>				
	Test 1	Test 2	Test 3	Test 4
YES	62	56	64	56
NO	45	50	43	50
Total Count	107	106	107	106
Success Rate	58%	53%	60%	53%

*in test 2 and 4, the count is less by since we were testing (W-1).

When we changed to weekly data which we have consolidated out of daily data we found that the success rate has increased by 19%, 11%, 4% and 11% respectively. There is considerable increase in the success rate of test 1 while with the rest of the tests, it's slight and can't change the view that these flow are not determent in moving the index. Test number three is consistent with the daily result has scored the highest success rate of 60%.

The test has been repeated 3 more times to too see the results of the market test on each year our study covered. We didn't notice any considerable change in the success rate when we reported each year separately except for the weekly results of 2010.

<i>Table3. Did the index movement reflected the direction of foreign & institutional flow (weekly 2010)?</i>				
	Test 1	Test 2	Test 3	Test 4
YES	16	16	20	17
NO	12	12	9	11
Total Count	29	28	29	28
Success Rate	59%	57%	69%	61%

The average success rate among all market index tests was 61.5% with test 3 still scoring the highest success rate of 69%. The period covered in 2010 was June 2010 till end of December 2010. The market was not publishing the flows in daily manner before this date and it would have been in our interest to study more data of the year 2010.

By looking at the different tables we can see that foreign investors flow do not affect the index movement considerably and the flow of the local investor plays similar role. On the other hand the flow of the institutional investor played bigger role than the foreign investors and the retail investor with regards to the index movement. Better results would have been obtained if the market was reporting institutional investors flow by nationalities.

4.2.2 Results of Tests 5-8, Market, Foreign & Institutional Liquidity.

Table4. <i>Did the market liquidity reflect the direction of foreign & institutional liquidity?</i>				
	Test 5	Test 6	Test 7	Test 8
YES	253	462	276	437
NO	265	56	242	81
Total Count	518	518	518	518
Success Rate	49%	89%	53%	84%

*Test 5: Evaluate the effect of foreign investor's net flow on market value movement.

*Test 6: Evaluate the effect of foreign investor's value movement on the market value movement

*Test 7: Evaluate the effect of institutional investor's net flow on market value movement.

*Test 8: Evaluate the effect of institutional investor's value movement on the market value movement

A common measure of liquidity of stock market is to look at the value of the stock traded on daily basis. In other word, if the market value today is 100 and tomorrow's value is 200, we can say that the liquidity has increased. That could happen by two ways. One is the value of the stock prices increased were the seller demand more cash to sell their stocks. Or new investors brought new cash to the market and exchanged their cash with shares. Hence, we have used the market liquidity to gauge if the foreign and institutional investors drive liquidity.

By looking at table 4, the results of test 6 and 8 will definitely attract the attention. In test 6, we added the values of the trades done on both buy and sell side and tracked the daily movement of this value. Then we compared the

direction of the movement being up if the liquidity increased and down if it decreases. We compared this direction to the overall market liquidity direction and the findings were noteworthy. In 462 trading session out of 815, the direction of the foreign investor's value reflected the total market value. Test 8 measures the institutional investor's value against the market value and the success rate was 84%. Test 5 and 7 returned success rate of 50% approximately.

Table5. <i>Did the market liquidity reflect the direction of foreign & institutional liquidity (weekly)?</i>				
	Test 5	Test 6	Test 7	Test 8
YES	51	96	59	79
NO	55	10	47	27
Total Count	106	106	106	106
Success Rate	48%	91%	56%	75%

Similar results have been obtained when we used weekly data where the success rate improved to 91% in test 6. The success rate declined from 84% to 75% with regards to the institutional investment value movement on weekly basis. This decrease of 10% will not change the finding dramatically. We found similar success rate when we analysed daily and weekly data of each year separately and the tables will be available in the appendix.

4.2.3 Discussion on Logic Tests Results

The results of liquidity tests contradict the results of the tests that measure the effect of the net flow on the index movement. We saw that the foreign investors have similar impact of the local investors on the index when they buy or sell. The institutional investors have more impact than the retail and foreign investors on the index movement. There could be many reasons for that. One could be the ticket size of institutional investors. As we explained in the definition, institutional investors as per DFM are banks, companies and institutions. If we look at banks only, they usually have investment department and dealers with sole objective of making capital gains on the bank proprietary trading book in different asset classes. The proprietary book size is usually big and hence the ticket size of this type of trading is big. The other

reason for the institutional supremacy is that those flows by institutional investors could have come from foreign institutions. Unfortunately the nationalities of the institutions are not reported and we cannot confirm this empirically.

We know that many factors affect the market movements. Some could be from the market listed securities, some from the nation that the market is based on and some factors are related to the globe that we live in. when we tested that effect of the foreign and institutional flow against the market we could not say prove that these categories affect the market significantly. During the data collection process, I kept a record of other major incidents that had cause major movements. I will give some examples of those events.

On 21/06/2010, MSCI announced that it will not upgrade DFM from frontier market status to emerging market status. The index was 1563 on that day. The next day the market declined by 1.34% to 1542, however the foreigners flow was positive with 2,498,374 net buy. On 23/06/2010 the index closed at 1551 gaining 0.58%. The interesting point here is on that day both foreign and institutional flow were negative will net sell of 19,683,770 and 29,980,704 respectively. The point we are trying to put here although a decline would expected with such news the opposite occurred. In liquidity front for the same event, the market value decreased by 45% in those three days following the announcement.

On 22/06/2011, MSCI again postponed upgrading DFM to emerging market. The index dropped by 1.83%, 0.78%, 1.06% for the consecutive session. Both foreign and institutional investors net flow were negative for the three days. Here we are looking at the same incident but different reaction post the event. The reaction was severe in 2011 compared to 2010.

The so called Arab Spring started during our observation time. The biggest decline recorded in our study was due to event happen by the Arab spring. the market lost 4.32% in one day with Egypt , 3.66% with Bahrain and 3.53% with Libya unrest. In the three occasions the investors reacted negatively and they were selling for two consecutive days. The market jumped 4.32% on 13/03/2011 when the King of Saudi Arabia announced new welfare system in his country in response to the Arab spring. The investors bought for two days

and the market value increased by 50%. The liquidity of both foreign and institutional investors increased by 52% and 58% respectively.

On the liquidity front, we saw that in most of the time, the market value increase when foreign and institutional value increase. This was the case for almost 90% of the time. We could discuss several explanations for this outcome. One explanation could be related to the local retail investors. In the year 2004 to 2006, there was a market bubble in DFM where many local investors placed their life saving in securities listed in DFM like Emaar, Amlak and Dubai Islamic Bank. The bubble got busted in mid-2006 where the market lost half of its capitalization. Many of those investors refused to sell and hold their assets at the buying prices of 2005 waiting for a recovery or new bubble. Emaar share price was almost AED 30 in 2005 and today it is traded in the range of AED 3 to 5. If those people are not floating their assets, we can assume other investors drive liquidity in the market and those could be the foreign investors or speculators.

We saw also the impact of the foreign liquidity is more than the impact of the institutional investor's liquidity on the overall market liquidity. A good explanation could be the structure on the listed companies in DFM. Most of the companies listed in DFM are local companies subject to the UAE commercial law. Those companies will usually have major shareholder with ownership percentage of 5% and above. In the case of Emaar for example, 31% of Emaar shares are held by Investment Corporation of Dubai. Emaar Capital is more than AED 6 billion which means more than 1860 million shares of Emaar are not floated and not traded. For that reason we could see less effect of institutional investment than the foreign investment.

4.3 Results by Correlation Matrix

We have constructed two correlation matrixes to uncover the dynamic relationship between our variables. The first matrix is for the variables with absolute value like the index close. The results are presented in table 6.

Table 6: Correlation of variables with absolute value

Indicator	Index Close	Net FRGN Flow	Net INST Flow	FRGN Value	INST Value	Market Value
Index Close	1					
Net FRGN Flow	0.036	1				
Net INST Flow	0.026	0.473	1			
FRGN Value	0.537	0.050	0.139	1		
INST Value	0.463	0.063	0.202	0.824	1	
Market Value	0.545	0.051	0.171	0.983	0.836	1

*FRGN: Foreign investors

*INST: Institutional Investors

*Daily data of 519 sessions

The first observation is that we don't have negative correlation between all of the variables. We saw independent relationships between the foreign and institutional investor flow and the closing figure of the index of each trading session. This observation corresponds to the results of the logic tests 1-4. we observed very strong positive relationship between the total value of foreign investors, the total institutional investors value and the total market value which confirms the results that we found in logical test 6 and 8. The new discovery by the correlation matrix is that we can see very strong relationship between the foreign investment values and the institutional value.

The second matrix is for the variables with percentage of change like the index movement. The results are presented in table 7.

Table 7: Correlation of variables with Percentage Movement

Indicator	Index Movement	Market Value Movement	FRGN Value Movement	INST Value Movement
Index Movement	1			
Market Value Movement	0.269	1		
FRGN Value Movement	0.229	0.938	1	
INST Value Movement	0.120	0.841	0.835	1

The results of the second matrix correspond to both the logic test and the first matrix where we can see very strong positive relationship between the value of the two investor's categories if focus and the market value. In the case of foreign value movement and total market value movement, the relationship is very strong and it is near to perfect positive relationship (0.938).

4.3.1 Discussion on Correlation Matrix Results

The second measurement instrument results have reflected the results we found when we used the first measurement instrument. The correlation matrix uncovered a positive relationship between the foreign investors flow and the institutional investors flow. We have discussed that DFM does not publish the nationalities of the institutional investors. The strong positive correlation (0.835) between the institutional value movement and the foreign value movement as well as the positive relationship between the net flows of both categories (0.473) may suggest that the foreign investors who drive liquidity and sometimes market index are foreign institutional investors. Foreign institutional investors could be International banks, fund managers or international insurance companies. We could think outside the box and discuss a mechanism used by private, local and foreign institutional investors. Many investors use special purpose vehicles (SPV) for several objectives. Those SPV can cover the identity of that investor and can transfer private investor into an institutional investor. The following two examples will illustrate the point. A high network individual with nationality of the UAE can create a company based on the Cayman Island and he can use this company to purchase shares in DFM. To DFM this is an institutional foreign investor and when he brings liquidity to the market, it will hit all the triggers we set in our testing. However, this investor is retail local investor. This method is used by some private investors for many reasons such as succession planning, inheritance planning if they don't want to comply with Sharia law or if they don't want their names to be published with the major holder of stock they hold. Another example is a local bank who wants to start mutual fund investing in UAE equity. The bank will establish SPV in Jersey to hold the investors subscription and will invest in their behalf using this SPV. To DFM,

this is a foreign institutional investor but we are actually looking at a local commercial bank. Those two examples could explain the strong relationship between the foreign and institutional investor. We don't want to generalize this case but it is noteworthy to bring these examples for discussion as they affect our results.

4.4 Results by Regression Analysis

We have seen several positive relationships between the study variables. However, the only thing we know about the relationship is that those variable are positively correlated at certain degree. But how the effect of X is over Y, those details will be uncovered by the regression analysis.

Table8: <i>Regression Foreign Value and Market Value</i>	
Significance Factor	1.74E-239
R Square	0.880237001
Slope	0.910759673
<i>Intercept</i>	-0.000292481
Observations	517

Table9: <i>Regression Institutional Value and Market Value</i>	
Significance Factor	1.7576E-139
R Square	0.70654832
Slope	0.623584522
<i>Intercept</i>	-0.000418345
Observations	517

Table 8 and 9 analyze in detail the relationship between the total value in AED of the foreign and institutional investors and the overall market value. We can see 88% of the change in the total market value can be explained by the changes in the foreign investor's value. Similarly, 70% of the changes in the market value is explained when regressed with the institutional value. This result is achieved with high confidence level at more than 99%. We can see also that 1% change in foreign or institutional values will result 0.91% and 0.62% change in the total value respectively.

Since we can see the strong effect of both institutional and the foreign investor's value, it is in our interest to analyze the relationship between the values of those two important categories.

Table10: <i>Regression INST.Value and FRGN Value</i>	
Significance Factor	4.8553E-136
R Square	0.697403419
Slope	0.638223687
<i>Intercept</i>	-0.000377675
Observations	517

Again here we can see that 70% of changes in the institutional investors values are due to changes in the value of institutional invest and 1% of change in foreign investors value will result a change of 0.64% change in institutional value. We are 99% confident about the results.

The correlation matrix shows independent relationship between the net position of both institutional and foregn investors with the direction of the index. Table 11 and 12 confirm that there is 41% and 56% probability that when the index moved in the same direction of the foreign and institutional flow, the incident was random or it was due to other reasons.

Table11: <i>Regression Foreign Net and Market Index</i>	
Significance Factor	0.418
R Square	0.001
Observations	517

Table12: <i>Regression INST Net and Market Index</i>	
Significance Factor	0.564
R Square	0.001
Observations	517

4.4.1 Discussion on Regression Analysis

The regression analysis findings were in consist with the findings of the logical test and the logic test. The result we found about the sensitivity of the institutional investors to the foreign investors leads us again to the assumption that many of the institutional investors are foreign. And now since we don't have any further tests, we can answer the questions asked in the introduction about the impact of the foreign investors on Dubai Financial Market.

4.5 Result & Discussion Summary

The results of three test conducted lead to two major findings. First is that the movement of the index is affected by many elements other than flows of institutional and foreign investors. We have seen market reactions to economic, company specific and political incidents rather than the foreign and institutional flow. We have also observed that the flows and liquidity of those investors are directly affected by these incidents. The second finding is that foreign and institutional liquidity impact the market overall liquidity. When there is liquidity flight by foreign or institutional investors, there is reduction in the overall market liquidity and vice versa. We can assume that this kind of liquidity have direct benefit to that market. The market charge transaction fees on the value of each transaction being on the buy or sell side. Second when there is increased liquidity, investors get the confidence that they can liquidate their positions whenever they want at the best prevailing prices. The implications come when this liquidity departs. Investment in stock markets can be as short as one day. Investors can settle their transactions for cash in two days after the trading. The money which was invested in Dubai on Sunday can be switched and invested in New York on Tuesday. That could lead to liquidity crunch that is not beneficial to the market.

Chapter 5

Conclusion

5.1 Conclusion

This study evaluates the impact of foreign investment on Dubai Financial Market. The study has been conducted to measure the impact on the index movement as well as the market overall trading values. The impact of the institutional investment has been evaluated as well for the purpose of comparison. The data suggest that the net flow (Buy minus Sell) of both foreign and institutional investors do not affect the market direction. However the total daily trading values (liquidity) by both foreign and institutional investors have strong positive relationship with the overall market value. We assume that both foreign and institutional investors increase the overall market liquidity when they trade and the overall market liquidity decrease when they exit from the DFM. The results also show positive correlation between foreign and institutional investors where we assume that many of the institutional data published are for foreign institutional investors.

Our finding could help decision makers of stock exchanges who have not yet liberalized their markets. If the decision makers are looking for liquidity boost, then opening their market could be a solution. However this liquidity boost is very cyclical and moves quickly when negative incident occur and they impact the market. Our findings can help traders who chase recommendations of foreign banks on stocks traded in DFM for the sake of the nationality of those recommending bank. We can tell them foreign investors do not move the index. DFM is like other market is affect by its listed securities specific news, national economy news and the global economy. Single investor's category can't control the direction of the market.

This study contributes to the literature in the fields of foreign direct investment and foreign portfolio investments and the impact of this investment type on the host nation or market.

5.2 Limitations, Recommendations and Future Research

The data we studied were for two years since the market started publishing data on foreign and institutional investors in this frequency and form in mid-2010. The current form does not classify institutional investors by nationality rather they classify them by type. Recent similar studies have not been found and we used old but very reliable papers in our literature review. Most of the recent papers discuss the FDI and their impact on the emerging market like China and India but does not extend its research to the UAE. Moreover, most of the papers evaluate the impact of FDI and FPI on the overall economy and they don't evaluate the effect on the stock exchanges. Add to that, they evaluate the long term investment and neglect the short term ones.

I would strongly recommend DFM to report institutional investors by Nationality and provide the market's users with downloadable consolidated data on these categories. I recommend that investors in DFM read the reports on foreign investors carefully as they give good insights on the dynamic of this kind of investment.

Future research could be done to compare the effect of FPI and FDI flow on Dubai economy or the UAE economy. Similar study could be conducted with the usage of other variables such as the market capitalization and market integration. The same study could be repeated on the other two stock exchanges in the UAE. A comparison study could be derived to measure the effect on these markets. This research is expandable where researchers can complement what has been started.

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Appendix

Figure 2: Net Foreign Flow During the Observation Period

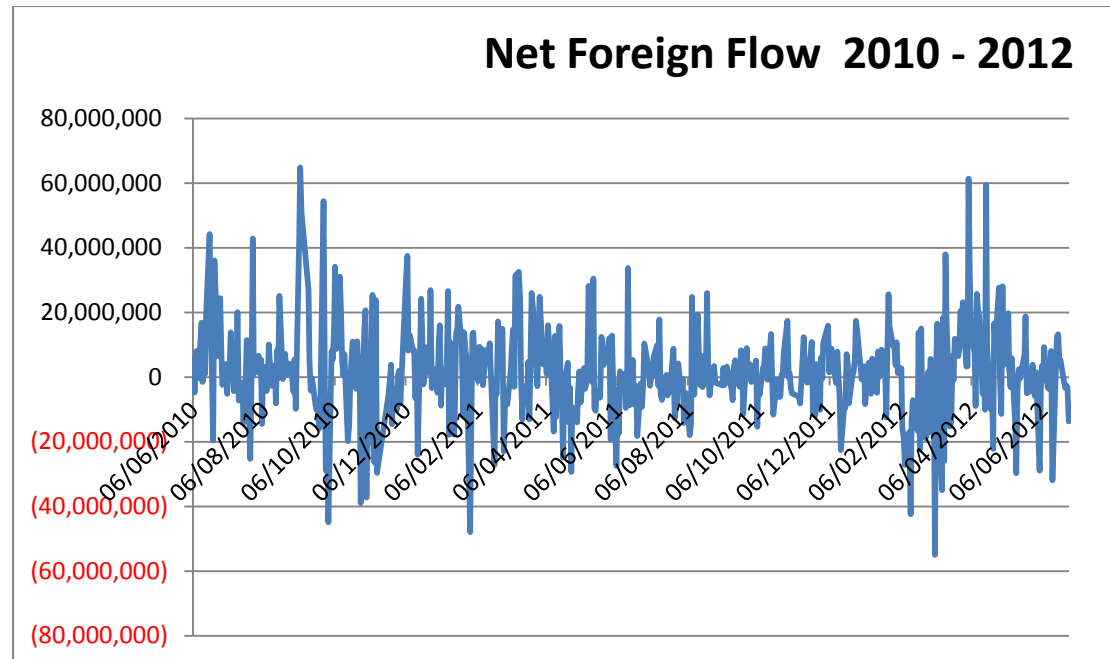


Figure 3: Net institutional Flow During the Observation Period

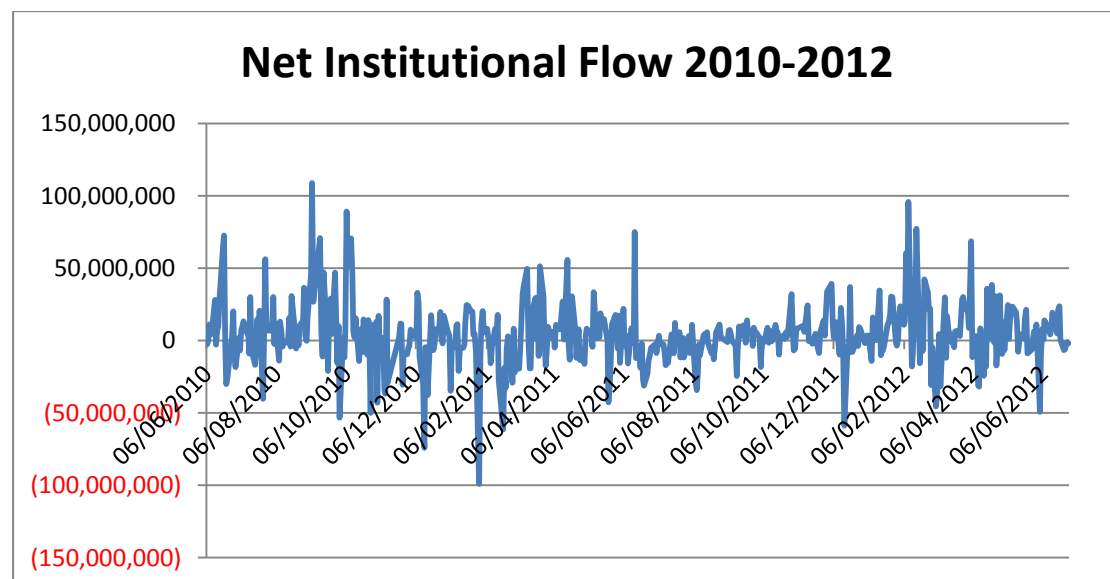


Figure 4: Index During Observation Period

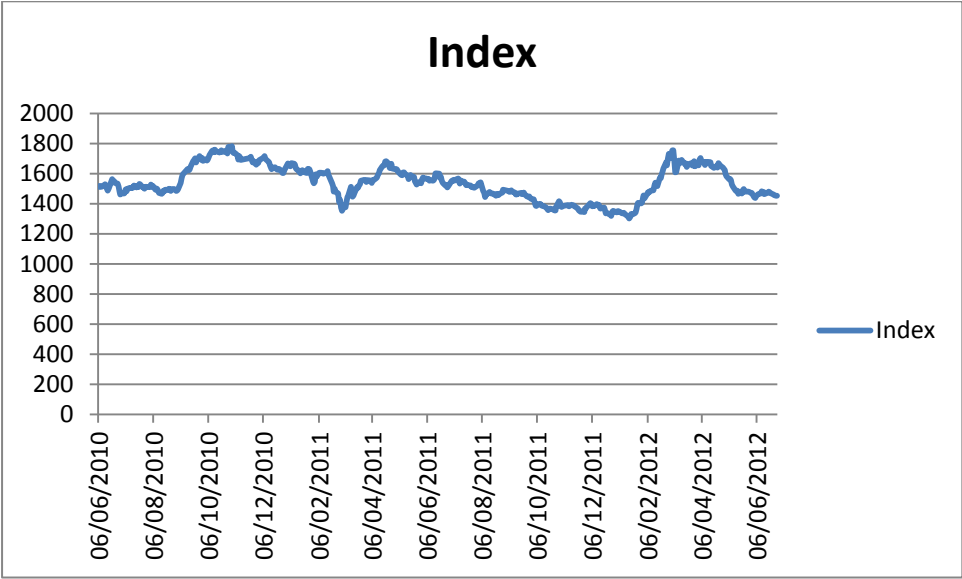


Figure 5: Value During the Observation Period

