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MULTIPERSPECTIVE ANALYSIS OF INTERNATIONAL FINANCIAL CENTRES AND POTENTIAL OF TURKEY'S POSITION

Doctoral Dissertation

ZEYNEP SEMA GÖRE

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TEZ ONAY BELGESİ

İŞLETME (İNGİLİZCE) Anabilim Dalı MUHASEBE FİNANSMAN (İNGİLİZCE) Bilim Dalı DOKTORA öğrencisi ZEYNEP SEMA GORE'nın MULTIPERSPECTIVE ANALYSIS OF INTERNATIONAL FINANCIAL CENTRES AND POTENTIAL OF TURKEY'S POSITION adlı tez çalışması, Enstitümüz Yönetim Kurulunun 26.11.2014 tarih ve 2014-38/28 sayılı kararıyla oluşturulan jüri tarafından oy birliği / ~~oy çokluğu~~ ile Doktora Tezi olarak kabul edilmiştir.

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ÖZET

Bu tezin genel amacı uluslararası finans merkezlerinin oluşumu, gelişimi ve finans sisteminin ana unsurlarından olan bankacılık ve sermaye piyasalarının temel karakteristiklerinin finans sisteminin büyüklüğüne katkısının finans merkezlerinin büyüklüğü ile bağlantılı olarak incelenmesidir. Bu kapsamda dünya çapında faaliyet gösteren 42 ülkenin finans merkezi çalışmaya dahil edilmiştir. Panel veri analizi yöntemi ile geliştirilen ekonometrik model ile üç farklı ölçekteki finans merkezi ve ülkelerinin finansal sisteminin özellikleri bankacılık sektörü ve hisse senedi piyasaları açısından analiz edilmiştir, bu gruplar ile Istanbul (Türkiye) karşılaştırılmıştır. Ayrıca Istanbul'un rakibi olarak seçilen on bir finans merkezinin, finansal sisteminin ana unsurları özetlenerek, seçilen belli değişkenler kullanılarak karşılaştırması yapılmıştır. Öte yandan, finans merkezinin oluşabilmesi için gerekli alt yapıyı sağlayan unsurlarından olan küreselleşme, finansal aracılık hizmetleri, finansal piyasalar ve enstrümanlar ve bunların finansal merkezleri ile ilişkileri de bu tez kapsamında incelenmiştir. Finans merkezleri Istanbul Finans Merkezi projesi nedeniyle Türkiye için yeni ve önemli bir konudur. Finans merkezleri finans sektörünün, özellikle bankacılık ve sermaye piyasalarının gelişmesine önemli katkı sağlamaktadır. Bankacılık sektörü ve sermaye piyasası aktiviteleri ise finans sistemi büyüklüğüne ve gelişmişliğine olumlu katkı sağlamaktadır. Bu hipotezlerden yola çıkılarak, bankacılık ve hisse senedi piyasasının karakteristliklerinin finansal sistemi büyüklüğüne katkısı 5 model ile analiz edilmiştir. Finansal derinlik, finansal küreselleşme, finansal etkinlik, finansal istikrar ve finansal erişiminin finans merkezi olan ülkelerin finans sistemi büyüklüğüne katkı dereceleri analiz edilmiştir. Finans merkezlerinin bulunduğu ülkelerin finans sistemlerinin büyüklüğü, finansal derinlik, finansal küreselleşme, finansal etkinlik, finansal istikrar ve finansal erişim unsurlarından finans merkezinin gelişmişliğine bağlı olarak farklı düzeyde etkilenmektedir. Ayrıca Istanbul'un uluslararası finans merkezi olabilmesi için finansal sistem açısından yapılması gerekenler ve Istanbul'un eksiklikleri ve potansiyeli tartışılmıştır.

Anahtar Kelimeler:Finans Merkezleri, Finansal Gelişmişlik, Finansal Sistem, Uluslararası Finans Merkezleri, Istanbul Finans Merkezi, Finansal Piyasalar, Bankacılık Sektörü

ABSTRACT

This dissertation had an attempt to contribute to the knowledge, the formation, and the development on international financial centres and to analyse the effects of characteristics of financial system that covers the banking sector and the stock markets on the size of the financial system in financial centres. Moreover, the financial globalisation, financial intermediation, financial markets, and financial instruments and their relationship with financial centres were also analysed in this dissertation. Financial centre is a new subject for Turkey due to "Istanbul International Financial Centre Project," but much serious attention is given to the financial centres and their role in the performance of financial markets and banking sector. Financial centres contributed on the development of financial system in the country, mainly on the development of capital markets and banking sector. Conversely, the contribution of banking sector and capital market to the size of the financial system and the development of financial system were very remarkable. For this purpose, cross-country regression econometric model that comprises five sub-sections was exploited to analyse three different sizes of financial centres, which covers 42 countries. As well as, the position of Istanbul and Turkey was analysed by making comparison three financial centre group. How financial size or depth, financial globalisation, financial efficiency, financial stability and financial access of the banks and stock markets contributed to the size of the financial system in financial centres was the main hypothesis of this dissertation. Another hypothesis was whether Istanbul was positioned as a regional financial centre. It was found that the size of the financial system in financial centre's country was affected differently by the characteristics of the financial system that are financial depth, financial globalisation, financial efficiency financial stability, and financial access. Finally, based on the results of the empirical model carried out, the relative strength, weaknesses, and potential of Istanbul as an international financial centre in the context of the financial structure and the financial system were discussed.

Keywords: Financial Centres, Financial Development, Financial System, International Financial Centres, Istanbul Financial Centre, Financial Markets, Banking Sector

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ABBREVIATIONS

Abbreviation	Description
AIM	Alternative Investment Market
BOJ	Bank of Japan
BRSA	Banking Regulation and Supervisory Agency in Turkey
CAGR	Compound Annual Growth Rate
CBT	Chicago Bureau of Trade
CBOT	Chicago Board of Trade
CBRC	China Banking Regulatory Commission
CFETS	China Foreign Exchange Trade System
CDs	Certificate of Deposits
CME	Chicago Mercantile Exchange
CSA	Canadian Securities Administrators
CSRC	China Securities Regulatory Commission
DFM	Dubai Financial Market
DIFC	Dubai International Financial Centre
EAME	Europe, Africa, and Middle East
ETD	Exchange Traded Derivatives
ETF	Exchange Traded Fund
EUREX	European Exchange AG
FCA	Financial Conduct Authority in the UK
FDI	Foreign Direct Investment
FFMS	Federal Financial Markets Service in Russia
FSA	Financial Services Agency
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product

Abbreviation	Description
GFCI	Global Financial Centre Index
GFDD	Global Financial Development Database
GLS	Generalized Least Square
HKMA	Hong Kong Monetary Authority
ICBC	Commercial Bank of China
IFC	International Financial Centre
IFCD	Xinhua-Dow Jones International Financial Centres Development Index
IMF	International Monetary Fund
IPO	Initial Public Offering
ISE	International Security Exchange
LIBOR	London Interbank Offered Rate
LIFFE	London International Financial Futures and Options Exchange
LSE	London Stock Exchange
LTIR	Long-term Interest Rate
MAS	Monetary Authority of Singapore
MICEX	Moscow Interbank Currency Exchange
MTFs	Multilateral Trading Facilities
NASDAQ	National Association of Securities Dealers Automated Quotations
NEG	New Economic Geography
NRB	Net Regulatory Burden
NSE	National Stock Exchange in India
NYSE	New York Stock Exchange
OECD	Organisation for Economic Corporations and Development
OLS	Ordinary Least Square
OPEC	Organisation of Petroleum Exporting Countries

Abbreviation	Description
OTC	Over the Counter
PBC	People's Bank of China
PRA	Prudential Regulation Authority in the UK
SAFE	State Administration of Foreign Exchange in China
SCA	Securities and Commodities Authority
SDIF	Savings Deposit Insurance Funds
SEC	US Securities and Exchange Commission
SGX	Singapore Exchange
SSE	Shanghai Stock Exchange
TFX	Tokyo Financial Exchange
TSE	Tokyo Stock Exchange
UAE	The United Arab Emirates
UK	The United Kingdom
USA	The United States of America
USSR	The Union of Soviet Socialist Republics
WFE	World Federation of Exchanges

INTRODUCTION

Finance is playing an important role in modern economies. The world's financial structure is composed of financial markets, financial institutions, and financial centres. The financial centre is a place where the financial activities are concentrated. The location of financial centre is determined by both the determinants of financial intermediation and locational characteristics (Scholten, 1992, p.266). The importance of financial centres has been recognised for the beginning of 20th century and many researchers have scholarly active interest on them. Specifically, the academic interest on international financial centres started in the 1970s with the publication of Kindleberger's study (1973). Notwithstanding international financial centres are analysed by the economist such as Tschoegl, Cho, and Park (2000) but these studies are rare. More attention has been dedicated to this field by geographers who are mainly interested in why (International Financial Centres (IFC) are located where they are. Governments and regulatory bodies are also interested in this topic so they have financial and regulatory impact on such centres. Reed (1977) defines a financial centre as a place in which providers of and users of financial services meet to transact business. National or domestic centres are mostly working in their domestic currencies and all participants are composed from residents, whereas both domestic and non-resident foreigner, governments, businesses participate financial activities; afterwards national financial centres become an international financial centres. Most countries have multiples cities such as the United States of America (the USA) and Canada where international businesses are transacted (Reed P., 1998, p.58). Jao (1997) defines the international finance centre as a place where there is a high concentration of banks and other financial institutions and where the financial markets are permitted to develop thus financial activities are performed more efficiently than any other location (Jao, 1997; Citation from Moosa, Li and Jiang, 2013, p.3).

The financial centres provide various financial services and focus on wide range of capital flows from financial markets, i.e. gold, capital. Some international financial centres perform better than others as a financial hubs, increase their share of the world financial market and concentrate on the financial services activities. The

financial activities, mainly banking sector and capital market activities, compose of main framework of financial centres. The development of internal financial system and financial networks are crucial for financial centres and the financial structure varies across countries. Hence, understanding and strength of the financial structure of the country can stimulate the economic development. Moreover, the financial sector is an important contributor to the economic growth and the development and the core of the economic system. In a meanwhile, agglomeration of the financial activities in a specific location added a financial value to the economic development of the country. Meanwhile, the financial centres are special places and create large amount of capital flow, income, and new employment opportunities. The rapid development of financial structure is in conformity with the expansion in international trade and investment activities. The development of international financial activities that are brought by rising of Euromarkets and deregulation raises the interests on international financial centres. The emergence of international financial centres assists the emergence of global financial market.

Why do cities and countries struggle for the position of financial centres? There are direct and indirect reasons. First, they directly contribute to economic activities, growth, investment, capital flows, employment, trade balances, and other economic and financial performance. Secondly, they indirectly contribute to the financial services sector that is suppliers, technology companies, and legal and consultancy services. The Turkish Government declared a discrete goal, strategy, and action plan in 2009 for Istanbul to become first a regional financial centre by 2023, then will become international financial centre. Eight working committees, in which they are working on many issues such as revising the existing regulations, refining the taxation, supervision of financial system, new products, and legal systems, and improving the infrastructure of İstanbul, were formed in May 2010 to accomplish this goal. In reality, Istanbul is the natural and unique financial centre of Turkey, but not a regional centre yet. The government and state institutions have been studying on a strategic plan to create first a regional financial centre and then an international centre in Istanbul. According to Global Financial Centre Index (GFCI) 13 Report, Istanbul shown progress and ranked as 57th among 79 financial centres in March 2013. Until target date, the aim

is to increase the diversification of financial products and services by improving the regulating and supervising environment.

The financial centres are primarily categorized as primary and secondary centres. The primary centres, such as London, New York and Tokyo, perform all functions of developed financial system including money, capital, derivative, and exchange markets, whereas secondary financial centres concentrate on offshore segments such as asset management, pension funds, real-estate management and niche financial instrument-Islamic finance products. In the new financial framework, the ability of financial institutions to deliver new services in effective and efficient way will be a key factor to determine the performance of economic and financial development. The success of financial centres depends on various factors; for instance, sustainable macroeconomic conditions such as strong currency, well-developed foreign trade, and well-regulated financial system are prerequisites for becoming first ranked financial centre. The financial centres concentrate on the international financial activities in four basic markets, which are capital markets (equity and bonds), derivative markets, credit markets (mainly banking sector), and foreign exchanges. Financial services industry entails banking, capital markets, investment management insurance, foreign exchange transactions, and derivative instruments. Economic significance of financial industry is measured in a number of ways.

There are limited numbers of researchers who make analysis on international financial centres, the importance of banks and capital markets, and the role of financial centres through the steps of financial development in Turkey. Banking plays an important intermediary role between investors and borrowers. The capital markets are a source of risk capital for companies that need to finance their growth. That is the reason why this dissertation concentrates on financial system and financial structure of countries having international, regional, and national financial centres and Istanbul, which is the unique financial centre of the country; not many studies have been published about Istanbul's position and its contribution to financial system and the development of the country. The primary focus of this dissertation is to depict and empirically to analyse the characteristics of financial system in countries located

financial centres, in which the financial activities clustered by focusing on financial structure and financial institutions, financial markets and banking sector during the process of financial centres development and economic development. On the other hand, it is aimed to evaluate the importance of banks and the capital markets as economies develop as well as providing an insight into current position and competitiveness of the capital markets and banking sector in Turkey and Istanbul International Financial Centre against other financial centres especially Moscow and Dubai. Financial globalisation, financial intermediation, financial markets, and instruments and their relationship with financial centres are also analysed in this dissertation. Financial centres contribute on the development of the financial sector, mainly on the development of capital markets and the banking sector. The impact of banking sector and capital market on the size of the financial system and the development of IFCs and financial system are very remarkable. In addition to that general aspects of financial development and the determinants of the size of financial sector, whether banking sector variables have more power that is significant or capital market variables, by using cross-country regression to draw causal inferences in the world are depicted. While the relation between the size of the financial system and the characteristics of the financial system are tested, the characteristic of the financial system is analysed under five dimensions that are financial deepening, financial globalisation, financial efficiency, financial stability, and financial access. The contribution degree of these characteristics both banks and stock markets on the size of the financial system for three financial centres categories and Turkey are deeply studied. Additionally, the study also presents the characteristics of financial system in other financial centres and contributes to the development of financial markets and banking sector in Istanbul Financial Centre.

Under this framework, the dissertation consists of three main sections. The first section focuses on the globalisation of the financial markets, the structure and functions of the financial system and financial intermediation global financial markets and instruments The root of financial centres is the financial globalisation and internationalisation. The financial system is the base structure of the financial markets and financial centres. The demand of particular financial services in financial centres

leads to the development of financial markets and then financial development comes. Financial intermediaries and institutions provide different financial services that are supplied by financial markets. In order to increase financial development well defined and a bundle of financial products are required in the financial system. The section of the dissertation focuses on analysing the international financial centres in multi-perspective way, conceptually and theoretically. The development and efficiency of financial centres is explored through their structures and economic and financial factors that keen to identify the policy necessary to support financial sector growth. In addition to that, macro and micro economic factors determine the development process of international financial centres. The constraints, obstacles, and challenges are analysed each phase through the development of the international financial centre, from national to international. In financial view, the impacts of banking sector and financial markets on international financial centres are investigated. In the final section, an econometric model is constructed to analyse the effects of the characteristics of financial system that covers banking sector and capital market in financial centres on the size of the financial system. An econometric model that comprises five sub-sections was constructed to analyse three different sizes of financial centres in the world in order to depict the contribution of these characteristics of financial system, both banking sector and capital markets perspective, on the size of the financial system. As well as, the position of Istanbul and Turkey was analysed by making a comparison between grouped or categorized financial centres and peers centres around the world. The role of the financial system has been hardly mentioned in explaining growth performance of financial centres in the world. Finally, based on the results of the empirical model carried out, the relative strength, weaknesses, and potential of Istanbul as international financial centre in the context of financial structure and financial system will be discussed and be proposed a framework and guidance for the government and the regulators of financial sector on the light of empirical research findings.

SECTION ONE

1. GLOBALISATION OF FINANCIAL MARKETS

In the terminology, global and international words are used interchangeably though the word is not co-terminous. Globalisation is the integration of nations' economies and refers to the reduction of market segments on a worldwide scale. Financial globalisation refers to increasing global linkages created by cross-border financial flows whereas financial integration refers to a country's linkages to international financial markets. Two concepts are interrelated so increasing financial globalisation is associated with increasing financial integration (Prasad *et al.*, 2003, p.2). Consequently, globalisation improves with increased cross-border capital flows, tighter links among the financial markets, and greater commercial presence of foreign financial firms around the world.

The main benefit of financial globalisation for developing countries is the development of country's financial system that involves deeper and better-regulated financial markets and financial institutions. Financial globalisation promotes financial development through two main channels. First, financial globalisation entails that new type of capital and more capital are available to developing countries. The countries are able to better flatten consumption, deepen financial markets, and increase the degree of financial regulation and market discipline. More capital increases sophistication of financial markets and extends the scope of products, instruments, and services. More investors and instruments enable better risk diversification within and across the countries. Second, financial globalisation creates a better financial infrastructure in which the problem of asymmetric information can be reduced (Schmukler, 2003, p.3 ; p.9). Both investors and issuers benefit from globalisation and technological advancement in financial markets. The globalisation of financial markets increases the importance of the international financial centres just because investors from different nationalities are searching for the most liquid markets with lowest transaction costs. Large corporations should have greater access to capital and to stock and derivatives markets and its products internationally. Financial globalisation is the accumulation of numerous local practices and dynamics (Dörry, 2012, p.2). Finance has an international

characteristic and capital is rarely immobile. The investors explore other markets due to development of financial markets to diversify their portfolios and get higher returns on their investments. Financial globalisation increases the competition between financial centres (Walter and Saunders, 1991, p.17).

Amsterdam had developed as a large financial centre in the 17th and 18th centuries but Amsterdam began to diminish as an international financial centre in the 18th century due to declining Dutch national strength and developing London as a global financial centre. The first years of globalisation started in the mid-nineteenth century. According to Obstfeld and Taylor (2002), British territory formed 80% of the total global capital flows during the nineteenth century. At the end of the nineteenth century, France and Germany grew financially and Berlin and Paris escalated as financial centre, consequently the relative importance of Amsterdam declined (Citation from Das, 2004, p.144). The free flow of goods, capital, technology, and ideas across borders occurred in the period of 1870-1914 and economy was conducted under the gold standard monetary regime in which all of the important currencies were pegged to gold. London was the leading and the largest financial centre in this era (Das, 2011, p.64). At the beginning of the twentieth century, several developments took place in the financial markets and private debt and equity instruments were in use. Government bond markets and insurance industry increased their activities. There were a small number of financial centres in Asia, Africa, and Latin America. At the beginning of the Great Depression, the US financial market emerged with the global markets and New York replaced London in playing the pivotal role. The world trade volume increased until the break of the Second World War. When pound sterling was, the strongest currency of this period left its gold peg, the gold exchange standard collapsed in 1931. In 1933, Glass Steagall Act under which banks could not offer investment-banking services imposed boundaries within the banking system. .In 1942, International Monetary Fund (IMF) and World Bank were founded along with establishment of General Agreement on Tariffs and Trade (GATT). The aim was closely to monitor variations in exchange rates and global capital movement. After World War II, a fixed exchange rate system called “the Bretton Wood System” was initiated in 1944; it remained in effect until 1971. At the end of the 1950s, the global economy faced the

problem of dollar shortage therefore some of the restrictive policy measure was taken after 1961. In 1957, six large economies on Europe formed the European Economic Community according to Treaty of Rome. The ultimate aim of the treaty was full financial and monetary integration and creating a single market. All restrictions on capital movements between member countries were eliminated. In the late 1950s, the Bank of England in 1958 allowed British banks to take deposits and make loans in USD. The members of the Organisation for Economic Corporation and Development (OECD) became active participants of the financial globalisation. The Bretton Woods era between 1945 and 1971 of fixed but adjustable exchange rate had limited capital mobility (Das, 2004, p.146-147; p.149-150; p.152-154). Financial instruments and markets did not exist in the early 1970s. The complex interaction of economic, political, and historical determinants drives the globalisation of financial markets. During 1970s due to the growth in international trade and US-dollar balances, which were mainly called petro-dollars accumulated by Organisation of Petroleum Exporting Countries (OPEC), the doors of the international banking were opened, and the development of new urban centres started. These key urban centres provided international banking and related financial services. The devaluation of dollar in August 1971 and Smithsonian Agreement of that year started the period of floating. After the Bretton Woods Agreement broke down in March 1971 and oil shock in 1973, the contemporary era of financial globalisation started (Kindleberger, 1973, p.80-82; Grabbe, 1992, p.27-28, p.36).

After the collapse of Bretton Woods Agreement, the internationally mobile money has grown in parallel to international banks. The financial markets demanded international financial products. The first immigration of the international financial activities started in 1960s by the creation of Eurobond market (Walter and Saunders, 1991, p.17). The US Interest Equalisation Tax in 1963 stimulated a dollar denominated bond (Eurobond) issued in London. In 1970, because of the high interest rates, floating-rate note (FRN) was launched (Grabbe, 1992, p.35-36). The Eurodollar market is the actually first global-local markets so it plays an intermediary role for dollar (Walter and Saunders, 1991, p.17). A number of banks in the United States went to London not to lend but to increase reserves in the United States. Furthermore, there was a boom in

foreign currency trading, which concentrated in New York and London, in 1970s due to floating exchange rates. These markets were growing during the 70s and the feature of changes in the 80s was integration following the emergence of global unified financial markets (Agarwal, 2009, p.235). Table 1 summarizes the major financial product innovations and their characteristics between 1960 and 1979.

Table 1: International Financial Innovations in Post-War Era

Instrument and Date of Launching	The Reason of Innovation	Degree of Success
Swaps (late 1950s)	Currency flexibility in loans, deposits in a single money market	High
Eurobonds (1958)	Domestic taxes and issue regulations	High
Eurodollars (1959)	Domestic bank regulation	High
Currency basket bond (1961)	Ready-made diversification	Minor
Currency option bond (1965)	Investor desire for probable gains but not losses from exchange rate changes	Minor
London dollar CDs (1967)	Liquidity	Modest
Forward CDs (late 1960s)	Transfer of interest rate risk	Minor
Forfaiting (late 1960s)	Transfer of country risk to specialist institution	Modest
Floating rate notes (1970)	Transfer of interest rate risk	Modest
Eurocommercial paper (1971)	None under existing regulatory system	Minor
Currency futures (1973)	Standardization, negotiability; transfer of default risk	High
Floating rate CDs (1977)	Transfer of commitment period risk	Minor
Foreign exchange options (1970s)	Hedge currency risk of uncertain cash flows	Minor
Eurodollar interest futures (1980)	Standardization, negotiability; transfer of default risk	Modest
Commodity-linked bonds (1980)	Price fluctuation of reference commodity	Minor

Source: Dufey, G and I. H. Giddy. (1981). Innovation in the International Financial Markets. Journal of International Business Studies. 12.2, 33-51.p.46-47.

The end of the Bretton Woods system of fixed exchange rates is the historic and economic determinant of financial globalisation, consequently the economic

deterioration caused by the large trade deficit, fluctuating oil prices experienced by the United States is economic determinant of financial globalisation (Kidwell *et al.*, 2012, p.397). After the second devaluation, trade payments and the long-term contracts were dominated in other currencies rather than US Dollars (Kindleberger, 1973, p.80-82; Grabbe, 1992, p.27-28, p.36).

Through Eurodollar markets, regulations and official capital controls were bypassed. In Europe, full capital account liberalisation started in 1980s. Financial globalisation has been initiated due to the fact that the world's major capital markets were deregulated and liberalised in 1980's. By the early 1980s, several developing economies added large debts. Starting from this period, the money has been transferred and traded without territories through electronic exchanges. As a result of those changes, global cities have developed and financial centres sustain their position to engage in international competition and have built strategic alliances with other centres (Budd, 1995, p.345-346). The decade of 1980 perceived changes in financial markets around the world. However, the germs of these changes were planted in the early of 1960s with the emergence of the Euromarkets.

The new era of financial globalisation began with the financial deregulation. The United States and London opened their domestic markets to trade and capital flows. The debt crisis of 1982 started with Mexico declaring moratorium in its external liability. The growth in global financial and banking markets was easier and the Foreign Direct Investment (FDI) and equity investment were confounded in the emerging market economies in the 1990s (Das, 2004, p.155). The fall of Berlin Wall gave the world the high sign of the start of tremendous shifts in the financial flows and investment patterns. In emerging economies, financial system has been integrated into the international financial markets since the early 1990s. The accelerated financial integration in the European Union of 1990s and 2000s has consolidated the role of London as a centre of European wholesale finance and a gateway for US financial institutions. The Asian economic crisis in the late 1997 and 1998 has warning signals for deregulated economies so it should be reshaped. The fall of the Union of Soviet Socialist Republics (the USSR), the Russian devaluation, the Long-Term Capital

Management's implosion of 1998 and the adaptation of euro in 1999 were the milestone of economic expansion in financial globalisation (Herrero and Wooldridge, 2007, p.57-58). Long-term Capital Management is a trillion dollar hedge fund founded by Scholes and Merton, who received a Nobel Prize in valuing option (Stiglitz, 2010, p.94). Iceland is a good example when an open economy adopts deregulation badly, eventually the reckless behaviour of the bankers have led to the country in jeopardy (Stiglitz, 2010, p.22).

Globalisation of industry causes globalisation of finance. Knox and Taylor (1995) explains the main components of financial globalisation accordingly: (1) The growth of Eurodollar market; (2) The development of transnational banks; (3) The development of global venture capital and investment companies; (4) 24-hour global trading in capital and securities markets; (5) Attracting foreign investment encouraged by transnational organisations such as World Bank, IMF, OECD; (Citation from Park J. H., 2012, p.9); (6) Technological innovations and internet. Financial globalisation affects financial breadth and depth, financial diversity and geographical spread of globalisation (Das, 2011, p.64). Financial globalisation has also contributed to the concentration of market capitalisation and liquidity in few international financial centres, for example Frankfurt, London, New York, and Tokyo.

Globalisation can be occurred in different ways by which the financial investment can be made in another economy, financial institution can be funded from another economy, the banks are branched across border, or the global financial centre can be used for networking purposes. In good times, globalisation can aid the financial intermediation; furthermore, the investors can find the funds more easily. However, economies without boundaries (domestic and abroad) are facing the risk of shock transmitting from another economy during the crisis time (IMF, 2012, p.101; p.114). The financial development in domestic economy that can be stimulated by foreign investment and the entry of foreign banks urges financial globalisation; furthermore, financial globalisation increases the depth of the domestic financial system (Das, 2011, p.65). The main agents of financial globalisation are governments, private investors, borrowers, and financial institutions. Governments permit to liberalise restriction on the

domestic financial sector and the capital account of the balance of payments. Although there has been removal of restrictions over time, sometimes restrictions were re-imposed because of crises, such as the 1982 debt crisis, the mid of 1990s Argentine crisis in Latin America. The reasons of liberalisation and deregulation carried out by the governments are categorised under six headings. First, governments find capital controls costly and to sustain effectively. Second, the government controlled or government-led financial systems and non-market approaches fails. Third, crises through financial history prove that foreign capital to finance government budgets and smooth public consumption and investment has importance. Moreover, foreign capital helps government conduct banks with problems and manages crises. Fourth, privatisation of public companies and opening up foreign investors help increase the receipts of the government. Fifth, governments can tax the revenue comes from foreign capital. Sixth, governments benefit from more efficient and robust domestic financial system for the growth of the economy and for the diversification of the public and private sector (Schmukler, 2003, p.6).

Borrowers and investors that cover households and correspondingly firms support financial globalisation. Firms and individuals ease their financial constraints by borrowing abroad. Firms can enlarge their financing alternatives by raising funds through equities and bonds issues in international financial markets and reduces their cost of capital, multiply their investors and increase their liquidity. Borrowing countries also benefit from new technology, know-how, management and the competency of labour force. If developing countries grow faster than developed economies, lenders can obtain higher returns for their investments. Both institutions and investors in developed countries can easily invest in emerging markets through buying and selling shares of international mutual funds and cross-listed shares of international companies, international corporate and sovereign bond in international capital markets (Schmukler, 2003, p.7).

Internationalisation of financial services means the use of international financial intermediaries by local investors and borrowers. It is attained by two main channels. The first channel is an increase of international financial intermediaries,

primarily foreign banks, and local markets. The second channel is to use the international financial intermediaries located outside the country by local investors and borrowers. For instance, local shares are traded in major world stock exchanges in the form of depository of receipts (Schmukler, 2003, p.7). Financial institutions play an important role in deepening financial globalisations through the spreading of financial services. The firms raise the capital abroad through bonds and equity issues, eventually the firms can reduce the cost of capital. When the external capitals come in the form of foreign direct investment, the firms benefit from it. The investors benefit from profitable investments, which are provided by financial globalisation. New international mutual and pension funds also direct the equity flows to developing countries. Because of that, global investors can expect to have higher real returns on their investment. In addition, global investors take the advantages of cross-country risk diversion alternatives. Developments in information and telecommunication technology, support financial globalisation by reducing cost of communication, shrinking globe and making national boundaries less important. The developments in information technology diminish the importance of geography. International corporations serve several markets in one location. Due to the development of technology, large financial institutions can serve several markets from one or more than one location (Das, 2004, p.142). Financial globalisation improves the functioning of financial system by increasing the availability of the funds and enhancing the financial infrastructure. Improvements in financial structure reduce the problem of asymmetric information, furthermore financial globalisation decreases adverse selection and moral hazard (Schmukler, 2003, p.7). In financial markets, one party usually does not know enough about other party to make precise or correct decision. This situation is called asymmetric information. On the other hand, adverse selection in financial markets occurs when the potential borrowers who produce an undesirable, in other words adverse, outcome. Adverse selection arises with asymmetric information before transaction is fulfilled. Moreover, moral hazard is created by asymmetric information after the transaction is fulfilled. In financial markets is the risk, in which the borrower involves in undesirable or immoral activities from the perspective of lender (Mishkin, 2007, p.37).

National financial markets have increasingly integrated into a single global financial system in which potential market participants face a unique set of rules. Cross-border financial activities mean that a country opens its financial markets and institutions to foreign investors as well as permitting local investors to invest abroad have increased. This environment is obtained by removing barriers of capital flow and withholding taxes. Global integration takes the form of increased financial links with major financial centres whereas regional integration is enhanced by regional centres. Increasing cross-border financial integration changes the behaviour of local and foreign market participants. For example, more foreign companies list their shares in international markets. The investors enhance their returns by diversifying their portfolios internationally (Herrero and Wooldridge, 2007, p.57-58; Kose, 2007, p.48). The two actions are necessary for financial globalisation. The first one is deregulation and liberalisation of financial sector and the second one is liberalisation of capital account of the balance of payments. Countries with competent human capital and governance have greater chance to attract FDIs. The governments use various tools in different policy areas that are foreign exchange transactions, derivative transactions, lending and borrowing activities by banks and corporations, and the foreign investor's participation in domestic financial system to restrict capital account transactions such in the developing countries. The controls and restrictive regulation over the domestic financial system and capital account have begun to be loosened since 1970s in industrial economies. The newly industrialised economies and emerging markets economies were late to raise the restrictions; therefore, they suffered from policy reversals. They first lifted and then re-imposed. The reversals were after the oil crisis of 1973, the debt crisis of 1982, in the mid of 1990's in Latin America and after 1997 in the Asian economies (Das, 2004, p.140-141).

Internationalisation occurs with agglomeration and it is more obvious in centralized countries than decentralized countries (Verdier, 2003, p.74). The international financial centres are the integral part of global financial system. A country can integrate with world financial system as globally or regionally in which it is located. Since 1960's, there have been three most important international financial centres, and the rest of world's trading markets are located around those centres. Tokyo is the

important financial centre in Asia over 40 years but restrictive financial regulation in Tokyo and high rental costs in Japan; Hong Kong and Singapore gain the edge over Tokyo. Conversely, London is a primary centre in Europe more than two centuries and European Exchange AG (EUREX) makes the Germany an important centre in futures trading. New York is primary market in America except futures market that is in Chicago (Williams, 2011, p. 20).

The deep and well-functioning financial markets promote the mobilisation of domestic savings and accelerate the efficiency of financial intermediation, and encourage international and regional centres (Desai, 2009, p.33). The structure of national and international capital markets and the growth of global stock exchanges is another phase of financial globalisation. The governments and corporations lean on the international and national capital markets to finance their activities. The markets in London and New York have seen the greatest growth since 1990. On the other hand, there are various barriers to construct a global or international capital market. These barriers can be listed as follows: withholding tax, regulation on foreign investment, data collection, custody, risk perception, lack of familiarity with financial markets. The most of barriers are related with information and the way of channelling of information between capital markets (Clark and Wojcik, 2003, p.913).

Financial globalisation helps to increase the growth rate of developing countries in theory but there is no robust empirical evidence. On the other hand, financial globalisation admits of managing macroeconomic volatility, especially consumption volatility relative to output volatility in developing countries (Prasad *et al.*, 2003, p.4). The measuring of level of globalisation is not easy; one of the indicators is the increased volume of offshore deposits by individual and nonbank institutions of developing countries. Another indicator is the widespread use and growth of foreign exchange deposits (Hanson, Ionohogan, and Majnoni, 2003, p.4).Against speculation risk, the global financial system usually offers better opportunities. Huge lending alternatives with low transaction cost can be attained easily through the support of high technology. The lending cost of large corporates declines when they borrow from outside their own countries i.e. from global financial markets. On the other hand, it is

required by financial globalisation to re-examine the some concepts such as, market discipline, deposit protection scheme structured by the governments, supervision of and restructuring of the banking sector (Mermod, 2011, p. 18).

On the contrary, financial globalisation conveys some risk. The most important risk is that financial globalisation can be related to financial crisis. Some examples are, the 1997-1998 Asian and Russian crises, Brazil 1999, Ecuador 2000, Turkey and Argentina 2001, Uruguay 2002. If the right financial infrastructure is not established, liberalisation followed by capital inflows can hamper the health of the financial system. Further, if the market fundamentals get worse, speculative attacks will occur with capital outflows. Local markets have to be regulated and supervised properly otherwise country's sensitivities of foreign shock increase. Additionally, herding, panics and boom-bust cycles and fluctuating nature of capital flows, in other word international market imperfections, can stimulate crisis and contagion even if countries have good economic fundamentals (Schmukler, 2003, p.3). Additionally, the income distribution of the countries is affected by negatively. It can be said that the globalisation process is on the behalf of huge, developed, and stable economies. One of the most disadvantages of financial globalisation is that the nations lose their power and their control on their national economies. For underdeveloped countries, globalisation causes damages rather than benefits, so globalisation can create a modern slavery system (Mermod, 2011, p. 19).

2. THE STRUCTURE OF THE FINANCIAL SYSTEM

The development of financial centres requires stern attention to financial sector development. The development of financial sector necessitates an enlargement of both supply and demand part in finance. Financial industry directly aids to economic activities, growth, investment, trade balance, tax revenues, and other economic performance criteria. Financial industry also indirect affects the sector of economy, which covers suppliers, users and the entities providing supplementary financial services (Walter, 1993, p.79). The financial system should be designed to encourage the domestic and foreign participants. Moreover, the financial system should minimize the risk of crisis and increase their functioning. The financial system transfers the funds from those who have funds for investment to those who need funds to invest. The financial system has a complex structure and comprises various types of private sector financial institutions. The financial system has four segments and components: financial markets, financial intermediaries, financial instruments, financial services, and regulators of financial activities (Fratianni, 2008, p.4). The components of the financial system are summarized in Figure 1.

The financial deepening or financial revolution is supported by three factors: (1) innovations in financial institutions, instruments, and markets, (2) institutional mechanism in which the obligor does not go to default, (3) the presence of public banks (Fratianni, 2008, p.4). The depth of financial system measured by total assets as a percentage of Gross Domestic Product (GDP) is an important component of financial development. There are two approaches to analyse this process in traditional literature. The first approach is to study how agents interact through financial markets. The second approach is to analyse the operations of financial intermediations for example banks and insurance companies (Fabozzi and Peterson, 2010, p.13-14).

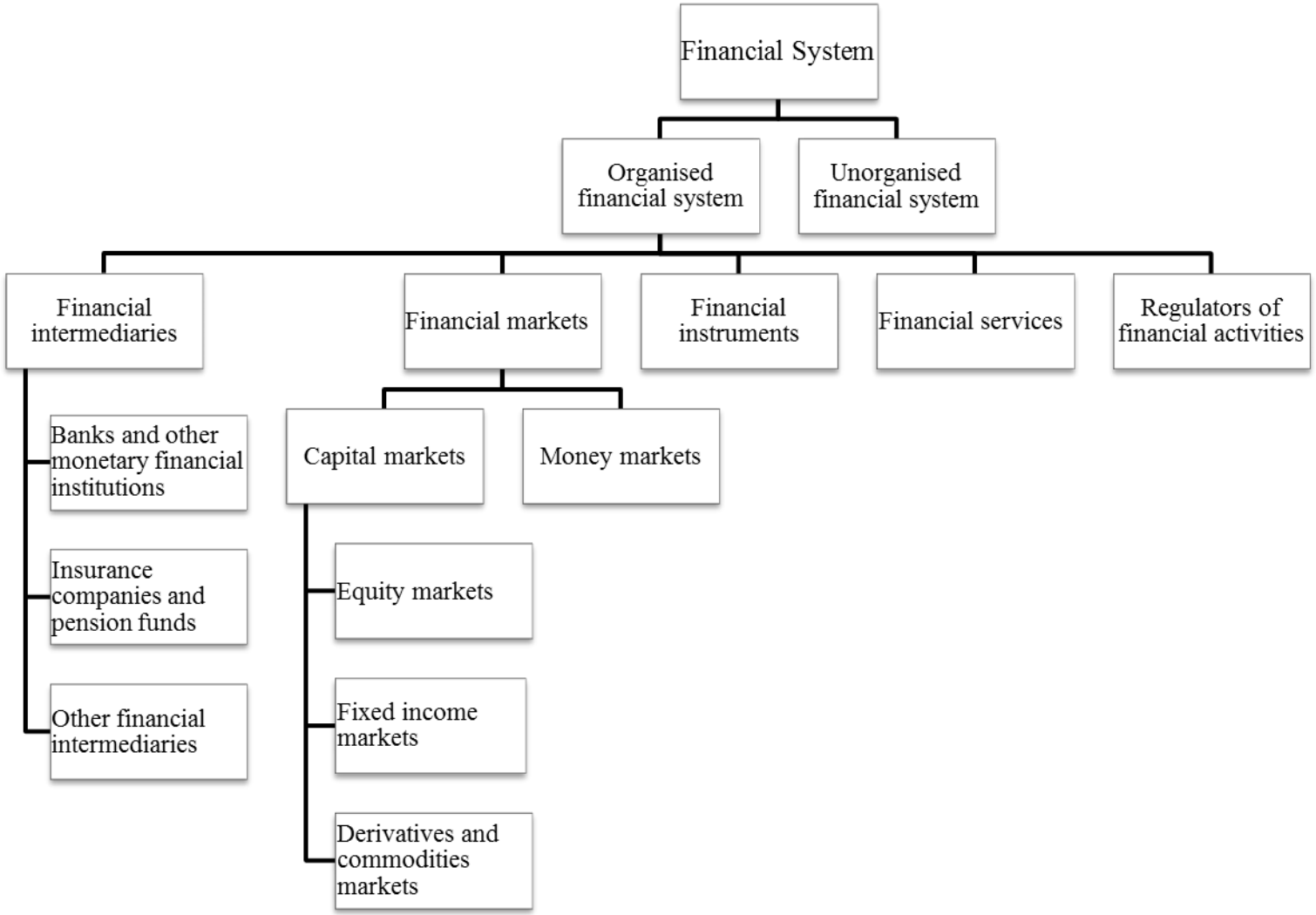

Figure 1: The Components of the Financial System

Schumpeter (1911) explains the role of financial intermediation in encouraging growth and technological innovation. A few decades ago, the role of financial markets and intermediaries in economic development was not recognized except by Schumpeter. Keynes was interested in the institutional details of banking system and credit rationing. After the Second World War and Great Depression, few scholars concentrated on financial markets. Gurley and Shaw (1955) and Tobin (1963) debate the difference between banks and the other financial intermediaries, mainly concentrated on the consequences for competition and conduct of the monetary policy. Gerschenkron (1962) outlines those banks as an instrument backup financial market. According to Joan Robinson (1952), economic growth is firstly stimulated by capital accumulation and technological development then finance followed. On the other hand, McKinnon (1973), Cameron (1967) and Goldsmith (1969) find empirical evidences to depict that financial development and structure of financial markets have positive effect on real economic growth (Citation from Bonis and Pozzolo, 2012, p.2-3).

Most of the academic works were done about the financial structure of countries for documenting the differences in financial structure. Financial markets consist of capital and money markets, whereas financial intermediaries consist of banks and other monetary financial institutions, insurance companies and pension funds and other financial institutions. An IFC should provide financial services effectively; therefore, IFC requires broad and efficient financial markets, intermediaries, and instruments. The relation between financial structure and financial centres are summarized in Figure 2.

Central Bank involves in money supply and payment systems hence governments play a vital role in the financial system. All governments regulate their financial system heavily to maintain stability. They are major borrowers in crises or wartime. Central banks usually issue money and involve in the payments systems. The goods, services, and assets are exchanged through clearing and settlement systems; the financial system provides payments systems for clearing and settling payments. In most financial systems, the law, which determines the kind of governance mechanism and the kind of the contracts used, plays an important role. Besides, a system of accounting

allows investors to appraise the company more easily and evaluate how much is lent to the debtor. Accounting information is also required in financial system (Allen and Gale, 2000, p.700-701).

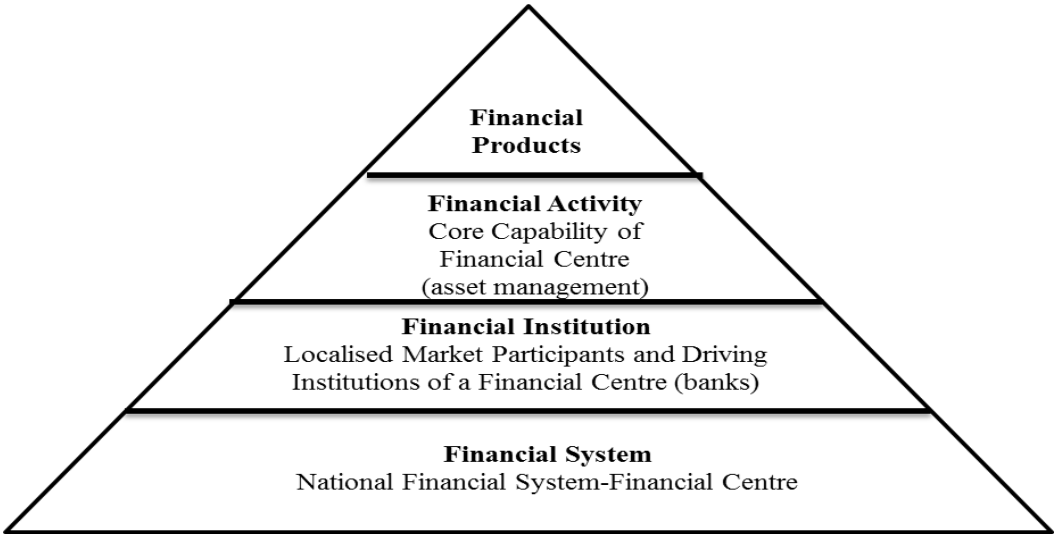

Figure 2: Financial Structure and Financial Centres

According to Levine, financial systems perform five main functions (Levine, 1997, p.692):

- **Easing trading, hedging, diversifying, and pooling of risk:** There are liquidity and idiosyncratic risk. When financial systems do not increase the liquidity of long-term investments, the long-term investments in the system occurs with high return seldom. Hence, the liquid capital markets are very important to transform liquid financial instruments into long-term investments. On the other hand, savers are averse to risk if they are not compensated for the risk. Investors and firms would shift their portfolio during crisis to the markets with higher returns. If the domestic market is strong, financial centre is also strong.
- **Allocating resources effectively:** Additional information acquisitions on new investment alternatives enhance resource allocation. Afterwards economic development arises. The relation between internal and external finance give a clue for the level of the financial development. In developed countries, such as the United States, the United Kingdom, Japan, France, and Germany, internal finance dominates external finance, but in emerging countries, external finance dominates

internal finance. When the information cost decreases and investor has greater knowledge on his investment, the rational investor will make most efficient investment.

- **Monitoring managers and corporate control:** Investors are assured by the financial system in which the payments are made on time and the investors are protected from fraud. The financial intermediaries create an environment where the confidence of investors is established by decreasing monitoring costs. On the other hand, industry creates own standards many of which are backed by the government.
- **Mobilizing savings:** The financial system allow savers and investors to transfer these savings and then to improve the productivity of investment and economic growth. Mobilizing saving involves increased cost for financial centre.
- **Easing the exchange of goods and services:** The financial system eases the exchange of goods and services through specialisation. The specialisation that leads to innovation requires more transactions and more transaction decreases transaction costs.

Merton and Bodie explain that the evolution of the financial system could be observed as innovation spiral, where the organised financial markets and intermediaries compete with each other in static sense and accompany each other in a dynamic sense. Additionally they offer six functions that a financial system including financial centre must perform. They also find that financial function is more stable than financial institution whereby functions change less over time, vary less across borders. Institution form follows financial functions. Innovations and fierce competition among financial institutions increase the financial system performance. These functions are explained in the below table (Kruse, 2003, p.2-5; Merton and Bodie, 1995).

In fact, Levine brings up that the level of financial development is the predictor of the rate of economic growth, capital accumulation, and technological change. Well-developed financial system transfers the economic resources through financial intermediaries. Financial system also transfers the risk. Derivatives, such as options, forwards, futures, are used as risk allocation instruments. On the other hand, emerging markets are different from developed countries so the relative importance of banking sector is higher than securities and insurance markets (Levine, 1997, p.689).

Table 2: Basic Functions of the Financial System

Function	Description
Clearing and setting payments	A financial system provides ways of clearing and settling to ease the exchange of goods, services, and assets.
Pooling resources and subdividing shares	A financial system provides mechanism for the pooling of funds to undertake large-scale indivisible enterprise or for the subdividing of shares in enterprises to facilitate diversification.
Transferring resources through time, across borders and among industries	A financial system provides ways to transfer economic resources through time, across geographic regions, and among industries
Managing risk	A financial system provides ways to manage uncertainty and control risk.
Providing price information	A financial system provides price information that helps coordinate decentralized decision-making in various sectors of the economy.
Dealing with incentive problems arising from asymmetric information	A financial system provides ways to deal with incentive problems when one party to a financial transaction has information that another party does not, or when one party is an agent for another.

Source: Kruse, C (2003).When Form Follows Function-Financial Centres as Starting Points for Researching the Interrelationship between Financial Intermediaries and Management Firms. ERSA Conference, p.3.; Kui,N.B. (1998). Hong Kong and Singapore as International Financial Centres: A Comparative Functional Perspective p.10-11.

Financial structure is important for three main reasons, which are efficiency, financial stability, and monetary policy transmission mechanism. The efficiency of financial system determines how well the financial system fulfils their job of allocating resources. The efficiency of financial system can be measured in macro and micro level. Macro efficiency associates with the related transfers between surplus and deficit unit or lenders and borrowers with minimal risk of financial crisis (Furstenberg, 2007, p.8). On the other hand, the access of households, governments, and firms to financial alternatives depends on the financial structure. In terms of Figure 3, the important issue

is how effectively the funds flow from borrowers to lenders in order to maximise the welfare of people (Allen, Chui, and Maddaloni, 2004, p.491).

The financial system can be categorised in various ways. The first categorisation is based on the level of development phases, which are basic, functioning, developed, or sophisticated. The basic financial system is a plain system that contains currency, payment, banking, and insurance activities. Moreover, the functioning financial system comprises simple level of risk management beyond the basic level, explicitly currency, payment, banking, insurance, interbank, simple securities, and derivative transactions. Finally, the developed financial system offers the effective allocation of resources through market pricing, advanced risk management techniques and wide-range of financial instruments. A sophisticated financial system provides full range of financial services and products. In a few major financial centres around world have truly developed financial system (Arner, 2009, p.196-197).

The second categorisation is based on whether the financial system is bank-based or market-based. In market-based system, small amount bank loans, a huge stock market, and larger bond market are found. Shares of companies are held by the public and are traded. The level of transparency is very high. Market-based financial system allocates capital and mobilizes savings whereas household deposits are slightly lower than in countries having bank-based system. In market-based system, cross-sectional risk sharing becomes important. Boyd and Smith (1996, 1998) explores that the banks are more important at the low levels of development. Whereas Rajan and Zingales (1999) claim that, the banks are less dependent than financial markets on legal systems. Allan and Gale (2000) compare the financial system of the United Kingdom, the United States, Japan, France, and Germany alongside several dimensions. The financial system of the UK (The United Kingdom) and the US emphasise on financial markets whereas the financial system of Japan, France and Germany emphasise on financial intermediaries. The financial system of the UK and the US underline competition and efficiency more heavily than Japan, France, and Germany (Citation from Neave, 2009, p.7).

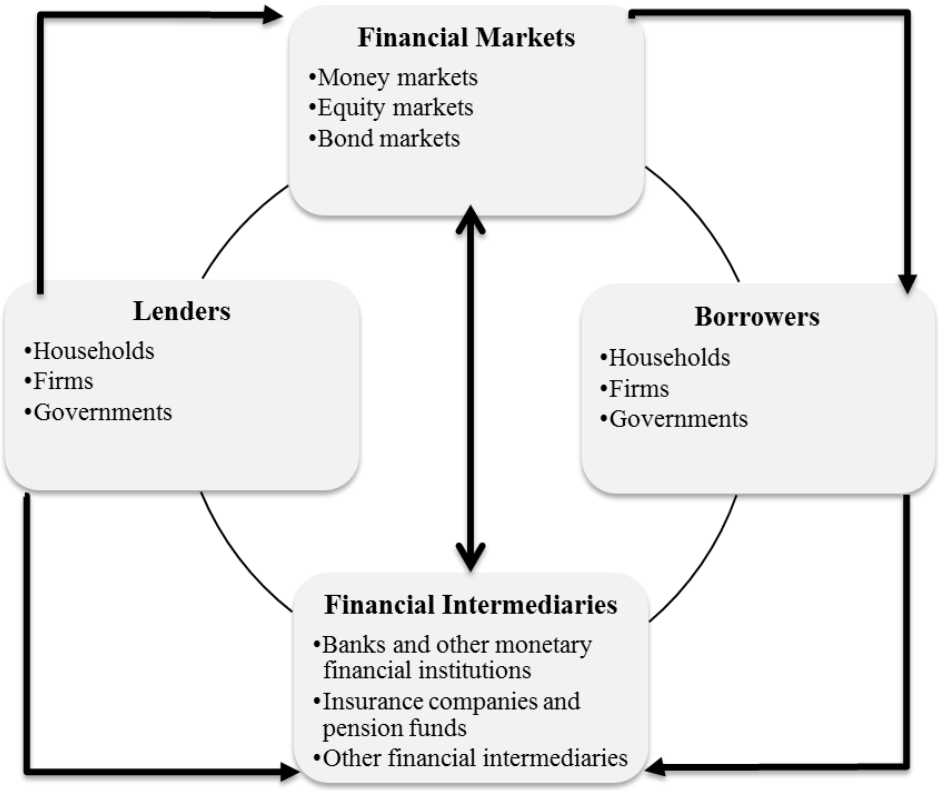

Figure 3: An Overview of the Financial System

Source: Allen, F., M.K.F.Chui and A.Maddaloni. (2004). Financial System in Europe, the USA, and Asia. Oxford Review of Economic Policy. 20.4, p.491.

Based on Allen and Gale Theory, the role of risk management is very different in market and bank-based financial system. In bank-based system, risk is eliminated by accumulating low risk and liquid assets, cross-sectional risk sharing through market is less important. In market-based financial systems, cross sectional risk management is more important and risk management by derivatives and other similar techniques are more important. The proof of this theory is that the forms of risk management are used in the US and the UK that have market-based system much more than in less market-oriented economies such as France, Germany, and Japan (Allen and Gale, 2000, p.714). In bank-based system, the banks are key player in channelling funds from investors to non-financial corporations. However, in market-based system, the corporation can find funding in the market through tradable securities such as stocks or corporate bonds. The market stimulates innovation and long-run growth and major shares of companies are held by the commercial and investment banks. Markets for corporate equity are poorly developed and financial transparency is low relative to market-based system. The

economic development is usually low in bank-based system (Walter, 1993, p.59-61; Levine, 2002, p.23-24). Chart 1 summarizes the composition of domestic financial system by geographical regions.

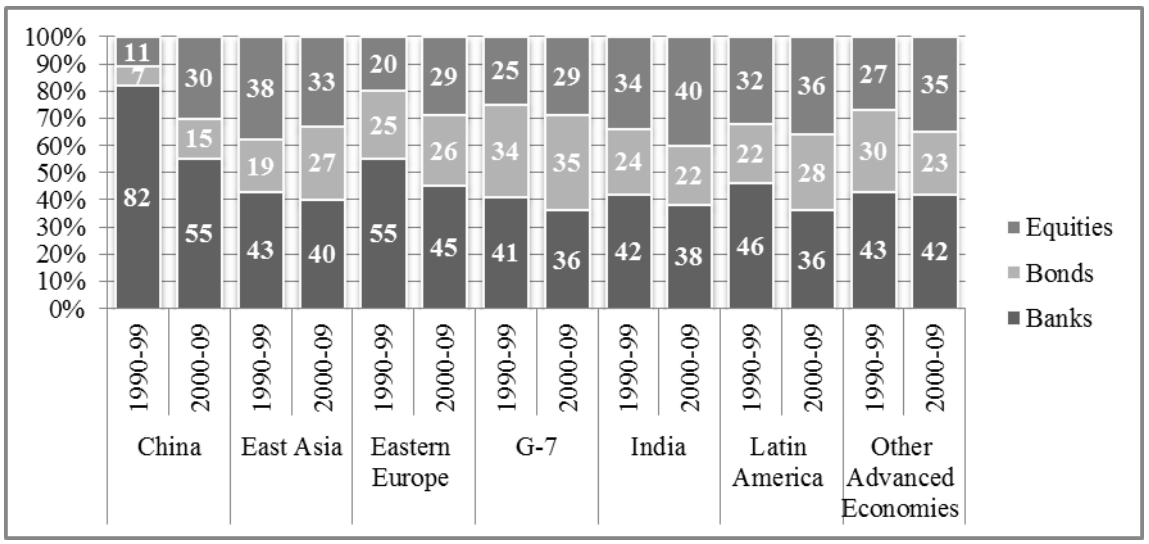

Chart 1: Composition of Domestic Financial Systems (Percentage of Total Domestic Market)

Source: WEF. (2012). Financial Development Report 2012. USA.

Kunt and Levine conduct a research on financial structure of 150 countries to test the nexus between financial structure and economic development. They classify countries as either market-based or bank-based and develop an index of financial structure based on measures of size, efficiency, and activity. They study the ratios of banking sector development measured in terms of size, activity, and efficiency relative to stock market development measured in the same terms of banking sector development. The series are the ratio of market capitalisation to bank assets (size), the ratio of total value of equities traded to bank credit (activity) and the total value of equities traded to GDP multiplied by overhead cost (efficiency). Countries with larger ratios are classified as bank-based and countries with ratios below the mean are classified as market-based. Finally, countries with ratios below median value of both bank and market development are classified as underdeveloped. According to the research findings, the financial system on average are more developed in richer countries. Correspondingly, banks and stock markets are larger, more active, and more efficient in richer countries. In rich countries, stock markets are more active and efficient relative to banks. Countries with strong protection of investor rights, intense

accounting regulations, and common law traditions lean toward market-based system whereas German Civil Law Systems are encountered under-developed and bank-based systems (Kunt and Levine, 1999, p.2-5; Park Y.C., Ito and Wang, 2005, p.21-22).

Chart 2 shows the size of global system as a percentage of GDP: The relative size of the components of financial system has changed thus the financial system shrunk relative to the world economy because of financial crisis however the debt securities including government debt grew due to fiscal support and crisis management (IMF; 2012, p.82).

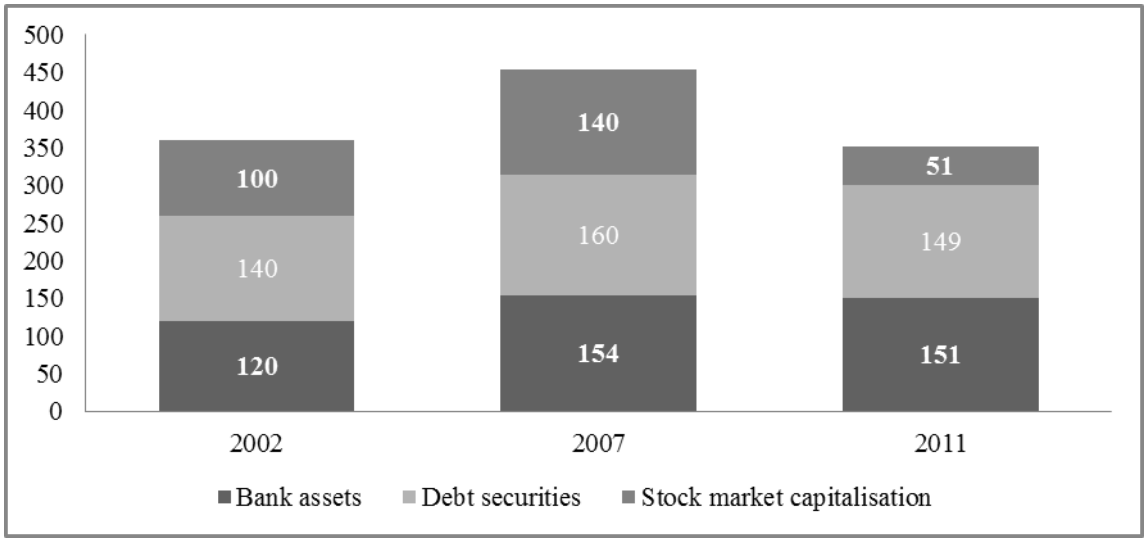

Chart 2: Size of Global Financial System
(Percentage of GDP)

Source: IMF. (2012). Global Stability Report 2012. USA, p.82.

Walter (1993) also defines three criteria for benchmarking financial systems that are domestic performance criteria, external attributes, and local bank's performance abroad. These criteria are listed in Table 3. These benchmarking are fulfilled by taking a five-year period from 1993. The rating of excellent, good, average and poor are provided. This method is highly subjective. It emphasis some area of strength in the performance of real sector, infrastructure development labour force quality, political stability and tax treatment for Singapore financial centre. On the other hand, it shows some weaknesses in the domestic financial intermediation, the state of development of domestic financial markets and the positioning of the local banks in the broader international environment (Walter, 1993, p.109-110).

Table 3: Walter's Financial System Benchmarking Criteria

Domestic Performance Criteria	External Attributes	Local Bank's Abroad
Cost structure/efficiency Risk management-Excess returns	Growth-Stability-Industrial base trade and foreign direct investment	Retail banking abroad-private banking abroad
Potential for economies of scale and super scale	Infrastructure-Cost base-Labour force	Middle market-Commercial banking-Wholesale commercial banking
Potential for economies of scope	Capital market transparency and liquidity	Capital markets (Primary-secondary-derivatives markets)
Universal banking-High performance specialized banking-Multi capacity financial congeneric	Financial market entry and contestability	Corporate finance
Financial products and processes	Agglomeration economies-Net regulatory burden	Investment management/Institutional-private clients
Capital cost and allocation-Structural adjustment	Centrifugal/centripetal forces	
International competitiveness implications for local financial firms and real sector	Economics of booking centres/Tax-regulation-stability-confidentiality driven-functional/booking composites	

Source: Walter, I. (1993). High Performance Financial Systems. Singapore: Institute of Southeast Asian Studies.p.90-91

3. FINANCIAL INTERMEDIATION GLOBAL FINANCIAL MARKETS AND INSTRUMENTS

Financial markets and intermediaries are globally linked through telecommunication networks and they serve around the clock. A market is defined as an institution or agreement that enables the purchase and sale of the goods and services. Meanwhile, a financial market is defined as an institution or agreement that enables the exchange of financial assets such as deposits and loans, corporate and government bonds and stocks and derivate products such as options, futures and other financial contracts (Baye and Jansen, 1995, p.31-33). International transactions take place in the financial markets. The initial sale of securities to raise funds for borrowers is known as primary market. All successive buying and selling of securities occur in the secondary market. In integrated financial markets, the cross-border financial links deepen. The country opens its financial markets and institutions to foreign players besides they permit local market participants to invest abroad. This can be achieved by removing barriers to outflow of the capital and the financial services. Global integration increases financial links with major financial centres such as London and New York. According to Gehrig (1998), network externalities give these centres an advantage in running of these financial services (Gehrig, 1998, p.405). Alternatively, regional integration is eased by regional financial centres such as Hong Kong and Singapore for emerging Asia.

3.1 FINANCIAL INTERMEDIARIES

Financial intermediaries create asset and liabilities by taking deposits from households, corporate sector, and government sector that have a surplus of funds to those that have a shortage of funds by creating liabilities on the financial intermediary's balance sheet. The difference between assets and liabilities is the financial intermediary's capital or equity. If borrowers borrow funds directly from lenders in financial markets by selling financial instruments for example bonds and securities, this process is named as direct finance. On the other hand, the funds can be transferred from lenders to borrowers by a second route and this process is called indirect finance (Kruse, 2003, p.2). Financial intermediaries are under different of names such as merchant

banks, investment banks, commercial banks, finance companies, mortgage banks, factoring and leasing companies, insurance companies, and credit unions. Investors or savers leave their money with financial intermediaries to earn interest or other yield. In order to satisfy the desires of investors, intermediaries design various different financial instruments, for instance time deposits, banker's acceptance, tailored common and preferred stocks, certificates of deposits, commercial paper, Eurobonds, government bonds, etc. (Reed, P., 1998, p.9). In financial centre point of view, the role of financial intermediaries between savers and investors play in most effective and efficient way in agglomerated markets that are international financial centres. International financial centre acts as an intermediary for the international companies, foreign sovereign, investors both residential and non-residential, and matches liquidity preferences from all around the world.

As seen in Figure 4, household (consumer sector), commercial sector, and government sector compose users of funds. Consumers borrow from commercial banks in the form of personal or secured loans. These may appear on the asset side of the banks or credit institutions' balance sheet or they may be sold off into financial markets in the forms of securitisation. Commercial sectors or firms also borrow from bank in the form of unsecured and secured credit facilities and sell debt obligations or equities directly into financial markets. Finally, governments borrow from credit institutions or issue securities directly. Under classical model of financial intermediation, savings are kept in the form of deposits or claims issued by those financial institutions use the funds to purchase domestic and foreign assets issued by non-financial institution such as companies and government. On the other hand, under second model, saving is directly allocated to the purchasing of publicly traded securities, governmental and private sector papers. Under third model, savings surpluses are directly allocated to borrowers through various forms of placement and other direct-sale ways (Walter, 1993, p.6-8).

Financial intermediaries perform four basic functions: Liquidity and payment services, asset transformation, risk management, monitoring, and information processing. These functions are transferred into financial activities with financial

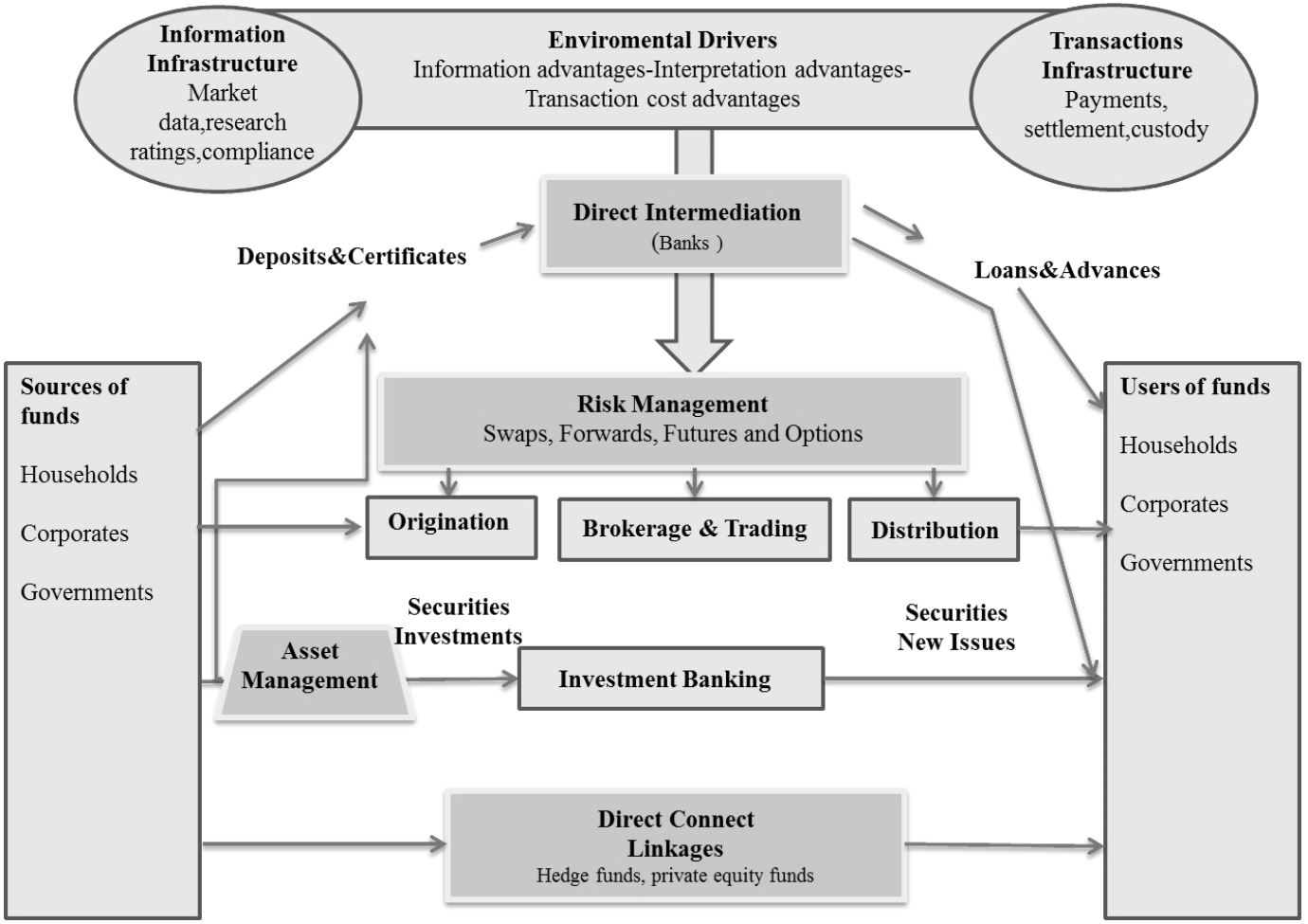

Figure 4: Financial Intermediation Road Map

Source: Walter, I. (2009).Economic Drivers of Structural Change in the Global Financial Services Industry. Long Range Planning.42.p.590

products and services to lenders and borrowers. Firms raise capital from financial markets to finance their production processes through credits, bonds, stocks, venture capital, private equity and derivative products (Kruse, 2003, p.4). The development of financial intermediaries speeds up economic development and growth, which facilitate the relocation of funds to best users. Shaw emphasises that liberalised finance opens the way to superior allocations savings by widening and diversifying the financial markets (Kindleberger, 1973, p.6).

Table 4: Types of Financial Intermediaries

Type of Intermediary	Sources of Funds (Liabilities)	Uses of Funds (Assets)
Depository Type Institutions (Banks)		
Commercial banks	Deposits (Checkable, time and saving deposits)	Commercial and consumer loans, mortgages, government bonds
Thrift institutions (Saving and loan associations)	Deposits	Mortgages
Credit unions	Deposits (time and saving deposits)	Consumer loans
Contractual Savings Institutions		
Life insurance companies	Premiums from policies	Corporate bonds and stocks
Fire and casualty insurance companies	Premiums from policies	Municipal bonds, corporate bonds and stocks
Pension funds and government retirement funds	Employer and employee contributions	Corporate bonds and stocks
Investment Funds		
Mutual funds and unit trusts	Shares in fund	Stocks, bonds, government securities
Money market mutual funds	Shares in fund	Money market securities
Other Types of Intermediaries		
Finance companies	Commercial paper, stock, bonds	Commercial and consumer loans

Source: Mishkin, S. F. (2007). Money, Banking, and Financial Markets. USA: Pearson Education. p.40 ; Kidwell, D.S.*et al.* (2012). Financial Institutions, Markets, and Money. USA: John Wiley&Sons.

The financial intermediaries are classified as depository-type institutions, contractual savings institutions, investment funds and other types of intermediaries. Depository type institutions involve in the creation of deposits, the major type of depository institutions are commercial banks, savings and loan associations, credit unions, and mutual savings banks. Table 4 summarizes the types of financial intermediaries.

Banks are the heart of the global financial system and the one of the most important financial intermediaries. Banks raise funds through issuing saving and checkable deposits. Then they use these funds to allocate commercial, consumer and mortgage loans and buy government papers. The larger the banking system, the more capital can be channelled form savers to investors. The size of banking system can be measured by deposit money banks assets to GDP, M2 to GDP and private credit to GDP. Deposits at banks are safer except some extreme cases such as bankruptcy but the return is usually lower than capital markets instruments. From the point of user of funds, transaction costs of bank borrowing is less than the cost of issuing equities on stock markets so the borrowing firms pay lower capital costs than issuing equities. Banks diversify the risks through merging a large number of deposits investing the portfolio in different projects; on the other hand, banks' competency for risk diversification is limited compared with alternatives provided by stock markets (Lin, Sun and Jiang, 2009, p.10-14). The banks play a vital role in the nation's monetary system and banks are the most highly regulated one among the financial institutions. On the other hand, the traditional banking system is outshined by the rise of shadow banking system that is composed of non-traditional financial institutions such as hedge funds, private equity funds, and structured investment vehicle in the last years.

Saving and loan association and mutual savings banks are thrift institutions that are very common in well-developed financial system however; there is no unique example in Turkish Financial Sector. They obtain funds by issuing checking saving accounts and time deposits. Saving and loan institutions are established in order to convert the saving funds into mortgage loans consisting primarily of long-term mortgages. Mutual savings banks and credit unions look like saving and loan

associations. In mutual savings banks, company employees or union members are cooperatively the owner of the banks. Credit unions are small, non-profit and cooperative institutions owned entirely by member-customer, accept checkable deposits, and initiate short-term instalments consumer loans exempt from federal income taxes. Depositors are credited with buying shares in cooperative (Baye and Jansen, 1995, p.35-36; Fabozzi and Peterson, 2010, p.18, Mishkin, 2007, p.39-40; Kidwell, *et al*., 2012, p.27).

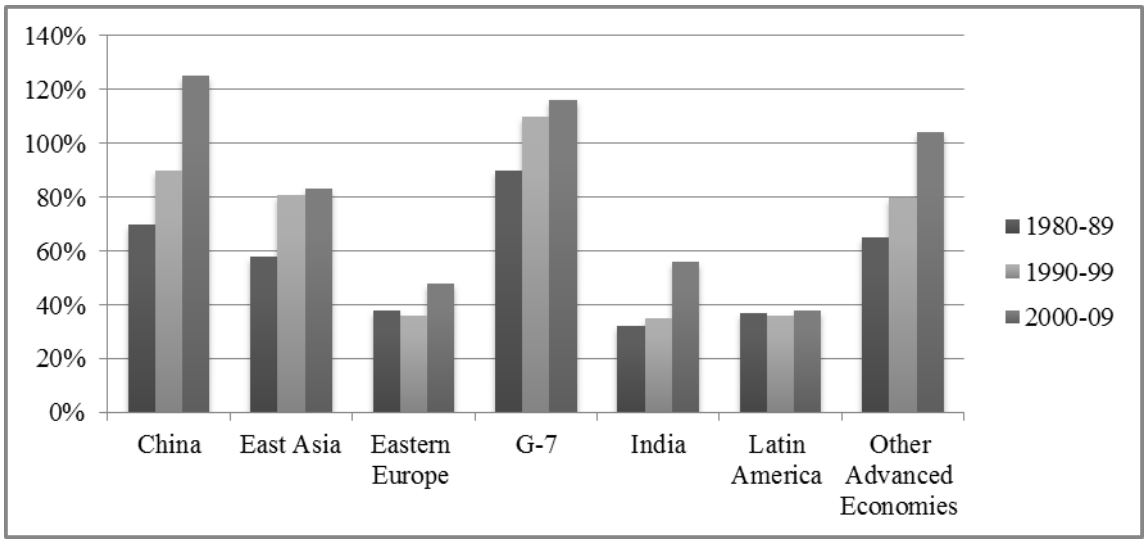

Chart 3: Total Assets of Banks
(Percentage of GDP)

Source: WEF. (2012). Financial Development Report 2012. USA.

Contractual saving institutions collect fund under long-term contractual arrangements and invest funds in capital markets, in long-term securities, such as bonds and stocks. The insurance companies and pension funds are the best-known form of this category. Life insurance companies insure people against hazards and collect funds from people who pay the premium consequently the insurance companies use the funds to buy long-term assets, such as bonds and mortgages. The assets of life insurance companies are purchased with premiums rather than deposits. Another form of contractual saving institution is fire and casualty insurance companies that are like life insurance companies but they have extremely greater possibility of loss. Therefore, they use their fund to purchase more liquid assets than life insurance companies do. The final form of contractual saving institution is pension funds and government retirement funds, which provide retirement income to the employees in the form of annuities. The

governments encourage the retirement funds through legislation and tax incentives. They hold portfolios that consist of long-term assets in higher yielding so the inflows into pension funds are long-term (Mishkin, 2007, p.41; Kidwell, *et al*. 2012, p.27).

The third type of financial intermediaries is investments funds, which collect funds form investors and invest these funds in diversified securities and other assets. One form of investment funds is mutual funds or open-end funds, which create funds by selling shares to individuals and use the residual to purchase diversified portfolios of stocks, money markets instruments, and bonds. Size of the funds depends on the money put into fund by the investor. The total number of shares in the fund increases if there is more investment than withdrawals in the day. Investment manager manages the fund portfolio. The price of stock mutual fund is determined from closing prices for the day. Most mutual funds are specialized in particular sectors of the market. However, the additional shares are not issued in the closed-end funds and the number of fund shares is fixed at the time of issuance or public offering. The shares are traded on secondary market. The price of the fund is determined by the supply and the demand in the market. A unit trust is similar to a closed-end fund in that the number of unit certificates is fixed. The unit trusts invest in bonds and have a fixed termination date. The unit trusts are common in Europe, but not in the United States. During 1993, a new investments vehicle called ETFs (Exchange-traded funds) that implies investment companies was introduced. They are similar to mutual funds but are traded like stock on the exchanges. ETFs are based on securities, bonds, industry indexes (Fabozzi, 2008, p. 622; p.630). Exchange traded funds look like mutual funds but trade is similar to stock exchange. Venture capital trusts and investment trusts are closed-end funds. The investor advisor takes the responsibility for maintaining the return of portfolio so the value of portfolio may slightly deviate (Mishkin, 2007, p.42). Money market mutual fund is a mutual funds that invest in money market securities that are short-term securities, such as treasury and agency securities, asset backed commercial securities, certificates of deposit, with low default risk (Kidwell, *et al*., 2012, p.28). Money market mutual funds sell shares to customers and use the proceeds to purchase money market instruments, which are secured and liquid. The interest on those assets is paid out to the shareholders. Money market mutual funds do not promise a constant return so the price of shares

might fluctuate over the period (Mishkin, 2007, p.42). Money market fund share maintains the default risk or trading loss. In 2008 financial crisis, money market mutual funds remain under high financial stress that could lead to the failure and bankruptcy of some funds (Kidwell, *et al.*, 2012, p.29).

Hedge funds gather investors' money and invest the money in a variety of financial strategies usually outside the control of the regulators. Investment banks do not take deposits and lend money, but help the company to issue new debt or securities in financial markets. Then they underwrite the securities by buying from the issuer company at a predetermined price and selling them in the market. In merger and acquisition process, the investment banks act as dealmakers. Finally, finance companies create funds by issuing securities and bonds and by selling short-term debt instruments. Afterwards, they lend the funds to consumers who buy commodities such as furniture, car, and durable goods and to small business. Unlike commercial banks, they do not accept saving deposits (Mishkin, 2007, p.42).

3.2 FINANCIAL MARKETS AND FINANCIAL INSTRUMENTS

Financial markets channel surplus funds from savers to people who have shortage of funds by contributing to higher production and efficiency in the economy. Another important role of financial market is the pricing and the management of financial risks. The financial market is the market in which the potential market participants face a single set of rules and are treated same way and financial instruments are traded. Well-functioning and efficient financial markets contribute to economic growth and welfare through accumulation of capital. In the age of globalisation, financial markets enable across border movements of funds the countries having lack of profitable investment alternatives to countries having higher returns. Gehrig (1998) emphasises the future development of cities, in which information spill-overs that allow improving the quality and correctly interpretation of complex information, and information complexity of financial instruments are the initiators of agglomerated financial markets, depend on centrifugal (decentralising forces) and centripetal forces (centralising forces) and risk averse investor prefers to trade in the liquid market. The growth in number and sophistication of financial centres increases the cross-border

move of money, money and capital markets go global. Financial instruments link the borrowers and savers in financial markets (Gehrig, 1998; Cochrane, 2009, p.3).

3.2.1 Functions of Financial Markets

Financial markets carry out various functions for the economy and the participants of the market that are assisting in the trading, hedging diversification, and pooling of the risks, providing insurance services, allocating savings, providing governance, and facilitating exchange of goods and services but fluctuation in those markets create macroeconomic shocks.

Financial market provides an opportunity for public's savings. Investment instruments are provided by money and capital markets, this flow is through financial markets to investment. Capital markets provide a path for storing wealth. Financial markets endow a mechanism for making payments. Currency, certain assets, interest, and non-interest bearing accounts serve as medium of exchange. Financial markets also offer risk sharing and risk reduction approaches. Governments use financial markets to manage monetary stability of the country. Government could manage some economic indicators for instance money supply, inflation, exchange rate, through financial markets (Fabozzi, 2008, p.6). Financial markets aggregate and disseminate the information through published price mechanism (Levine, 1997, p.696). Price discovery is the one of the most important function of the financial markets. In price discovery, the price of traded assets is determined by the interaction of the buyers and sellers, in other word, it is determined through supply and demand; in a well-functioning financial market, the buyers and sellers are sure that the price is fair and reasonable. Financial market provides a mechanism for investor to sell financial instruments that is the liquidity function of financial markets. The existence of buyers and sellers of financial instruments or assets to trade indicates the liquidity. The level of liquidity changes from financial markets to markets. The degree of liquidity is different among financial markets. If there is no liquidity in financial markets, the owner of the financial instrument will be obliged to hold a financial instrument until the issuer contracts to make the final payment for the debt instruments and until the company liquidates the investment for equity instrument. The financial market also decreases transaction costs.

There are two types of transaction costs in a financial market: search costs and information costs. Information costs are costs, which assesses the eligibility of the investment of the financial instrument. In efficient market, prices reflect the information collected by the participants in the market. Organised financial market reduces search costs. Search cost also falls into two categories that are explicit costs and implicit costs. Explicit costs cover expenses to advertise one's intention to sell or buy a financial instrument for example advertising cost for selling and buying financial instruments and the value of time spending in locating counterparty. Implicit costs include in the value of time spent in locating a counter party in transactions. The presence of organised financial markets reduces search costs; therefore, in developed financial markets search costs are low. Information costs arise in assessment stage of financial instruments' quality. In price efficient market, prices reveal the aggregated information gathered by market participants (Fabozzi, 2008, p.6; Fabozzi and Peterson, 2010, p.17-18). The general functions of financial markets are depicted in Figure 5.

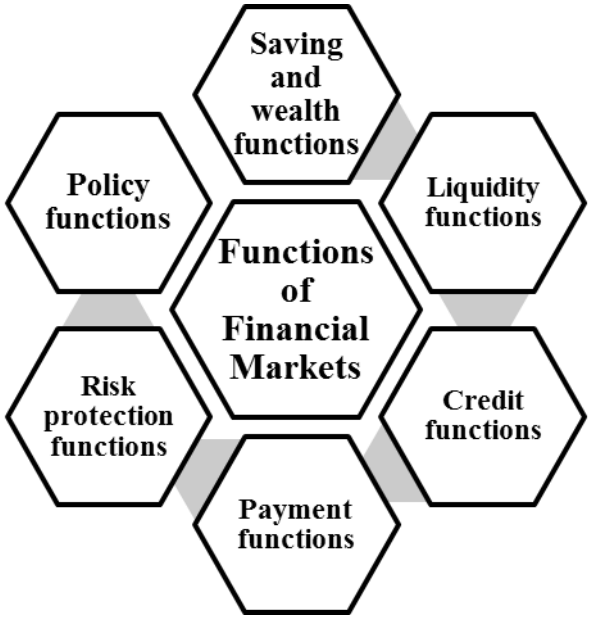

Figure 5: Functions of Financial Markets

Source: Omar, A., M.Abduh and R.Sukmana. (2013). Fundamentals of Islamic Money and Capital Markets. US: John Wiley&Sons p.10.

In the initial stage of the financial development, government acts as an intermediary between foreign lenders and domestic debtors, so there is no other debtors are creditworthy in the country. In this stage, the internal market deepens and local market presence of international financial intermediaries increases and amalgamates the

domestic money and capital markets into the international systems. International financial centres provide locational feature for multiparty connections and cause spillover effects through financial markets. Increased market efficiency in the national markets and their integration into global capital market bring about the increased availability of capital on competitive terms to potential debtors in the country or in the region (Choi, 1984, p.52).

3.2.2 Structures of Financial Markets

The organised financial markets are classified as money market and capital market. Money markets are for the short-term securities whereas capital markets are for long-term securities that have a maturity one year and more. On the other hand, financial markets can be segmented based on the issuance of securities. A primary market is a market in which new issues of securities such as bond and securities are sold by initial issuer. Investment bankers are the main player of primary markets through underwriting securities. Nonetheless, most trade are done in secondary markets. A secondary market is a market where securities are traded after initial offering in primary market. Broker and dealers are very important in secondary market. There are two structural model, over the counter (OTC), and organised markets, conducted in secondary market. OTC market is a decentralized market in which trading takes place through the telephone, electronic networks instead of on a physical trading floor. Securities are not listed on the exchange. On the other hand, in organised exchange, trading takes place under the rules and regulations of an organised market. The seller, buyer and agents meet in the central location to handle trades through electronic platform or physically. The foreign exchange market, the Euromarkets, money markets, and interbank market are the examples of OTC markets. Derivatives are traded both on organised and on OTC markets (Omar, Abduh and Sukmana, 2013, p.9).

3.2.3 Equity Markets and Instruments

Equity markets are for long long-term investor and borrowers like insurance companies, government, corporation, pension, and mutual funds. The intermediaries are securities underwriters, investment, and commercial banks. The main form of direct finance is equity financing, equity instruments issued by corporations and government

are traded in those markets. Equity markets are centralised so they have a single physical location. Centralisation makes a significant amount of information publicly available. The equities have no maturity for that reason they are considered as long-term securities. Fund providers become shareholder of issuing corporations. Equity markets also create flexible instruments to diversify and manage risk for investors (Fabozzi and Peterson, 2010, p.28). Equity has advantage for entrepreneur. The risk is shared with the provider of capital, and there is no fixed obligation for repaying the funds. Thus, in bad times, payments to the providers of capital are suspended. On the other hand, there is some disadvantage of equity. There are adverse relation with issuing new equities and the value of firm's shares that decreases when they issue shares (Stiglitz, 1989, p.57). Equity or securities markets are more active and efficient relative to banks if the country is wealthier. Securities market liquidity has a positive effect on capital accumulation, productivity growth and current and future rate of economic growth. Securities markets promote specialisation, acquiring and disseminating information, activate saving to promote investments all of which encourage long-term growth (WEF, 2012, p.10).

The European exchanges were mutual organisations before mid-1980s. This situation had changed in 1986 with the financial reform called Bing Bang in the United Kingdom that caused the deregulation of the equity markets in the United Kingdom. The reform involved the abolitions of fixed fees and opening the membership of London Exchange to banks and investment firms including foreign members. Equity market liberalisation waved to the equity market in Western Europe. Changes in demand, technology, and regulation cause major changes in equity markets. A new business model in stock exchanges focuses on liquidity advocated by trading platform known as Electronic Communication in the United States and Multilateral Trading Facilities (MTFs) in Europe. In the United States BATS and Direct Edge accounted for nearly a quarter of securities trading value in 2011, whereas MTFs accounted for 30% of equity turnover in 2011 (Caprio, 2012).

The risk is shared by entrepreneur and the capital provider in equity (Stiglitz, 1989, p.57). The equity or corporate stock represents the share of ownership interest and the dividend is paid to holders, henceforth, shareholder of corporations bears significant

investment risk. In initial public offerings or Initial Public Offerings (IPOs), new issues of stocks are offered to investor for the first time. The stocks of corporations are issued in the primary market. There are various categories of shares, such as ordinary shares, preference shares, that affect price determination. The pattern of share prices is summarized by indexes such as Standard and Poor's 500 Index. After the new issuance, securities should be sold by individual investor and bought by another investor in secondary stock market for example in Borsa Istanbul. On the other hand, securities can be issued to the existing holders of shares called rights issues or to selected institutional investors called private placements (Bailey, 2005, p.3).

According to World Federation of Exchanges (WFE) 2012 Market Highlights Reports, the market capitalisation of the world exchanges has reached USD 54, 570 million with 15.1% growth rate. The performance of regions is shown in Chart 4.

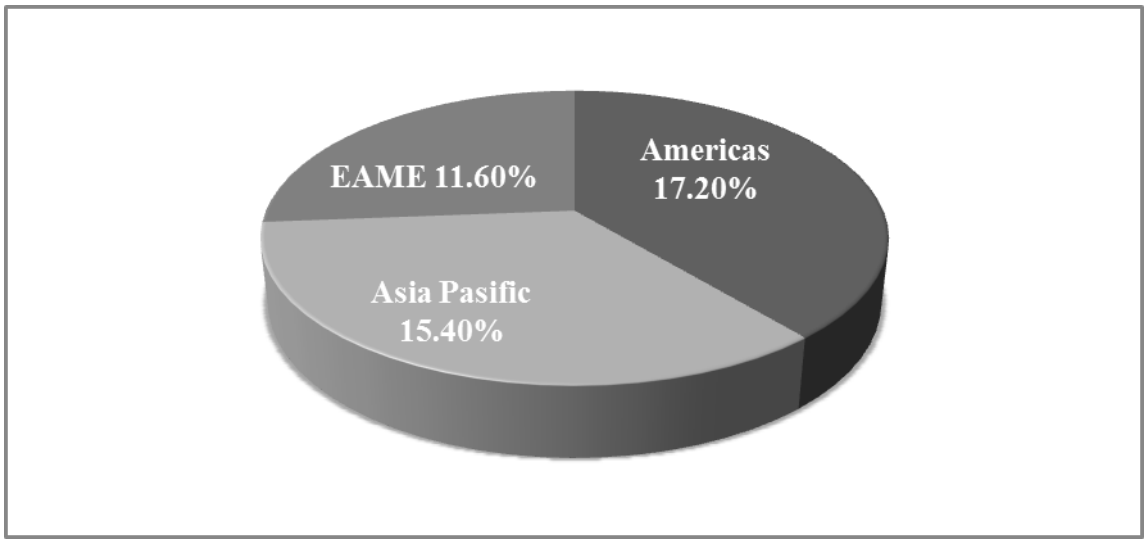

Chart 4: Performance of Equity Markets (2012)

Source: WFE. (2013). 2012 WFE Market Highlights**.** USA. p.1

In America, the highest growth rate were observed in US exchanges (19%) of which New York is the world's leading financial centre, whereas in Asia Pacific the highest rate is observed in Thailand (45%), Philippines (39%) and Singapore (28%), Hong Kong (25%) and the lowest rate is observed in Japan (5%). In Europe, Africa, and Middle East (EAME) region, Africa Middle East region experienced a 20% and Eurozone 14% growth rate.

Global equity market development can be measured by three indicators that are domestic market capitalisation to GDP, value of shares trading to GDP, turnover velocity. Chart 5 shows the trend of these three development indicators. Between 2007 and 2008, the indicators dropped due to global financial crisis according to WEF analysis. This drop was associated by two factors: (1) the listing on stock exchanges was a hard subject for private companies (2) valuation of shares declined. Afterwards, domestic market capitalisation recovered and rose from 2008 to 2009 and 2009 to 2010. Turnover velocity indicator has remained steady until 2010. This indicates that there are a liquidity availability because of government support system (WEF, 2012, p.19-20).

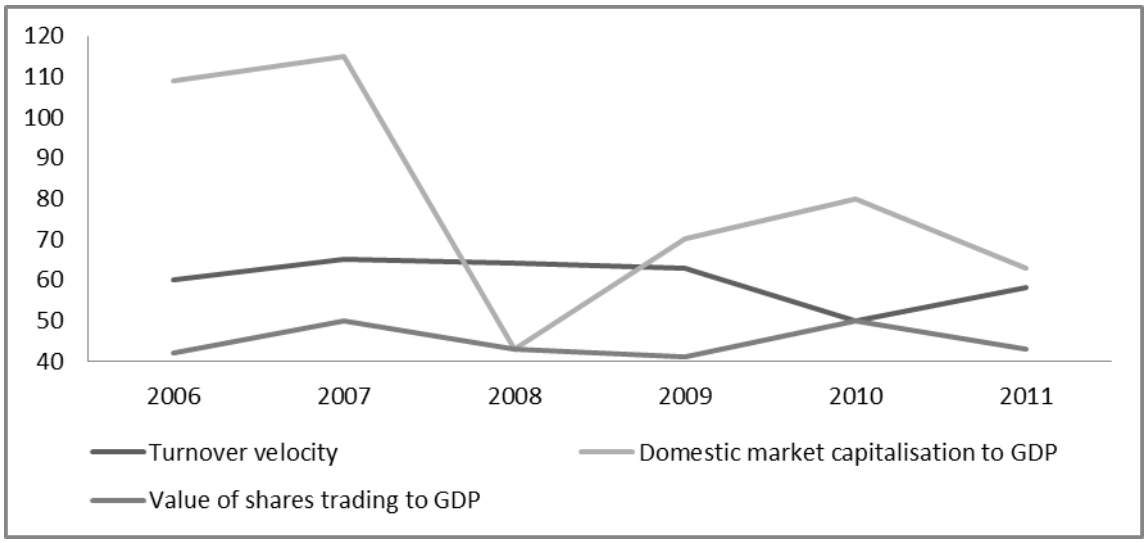

Chart 5: Equity Market Development Indicators
Median across Country Sample
Source: WEF. (2012). Financial Development Report 2012 .USA. p.19.

Chart 6 depicts the market capitalisation of top stock exchanges around the world in 2011. The United States, Japan, the United Kingdom, China, and Hong Kong have large stock exchanges, which account for over 50% of world's market capitalisation. However, the market capitalisation to GDP of Japan, the United States, the United Kingdom, China, and Hong Kong declined over the past five years. China's ratio decreases at 31% that is largest in this period. In IPO activities, Hong and China increased its market shares from 2006 to 2011, although Japan, the United Kingdom, and the United States decreased its market shares (WEF, 2012, p.21-22).

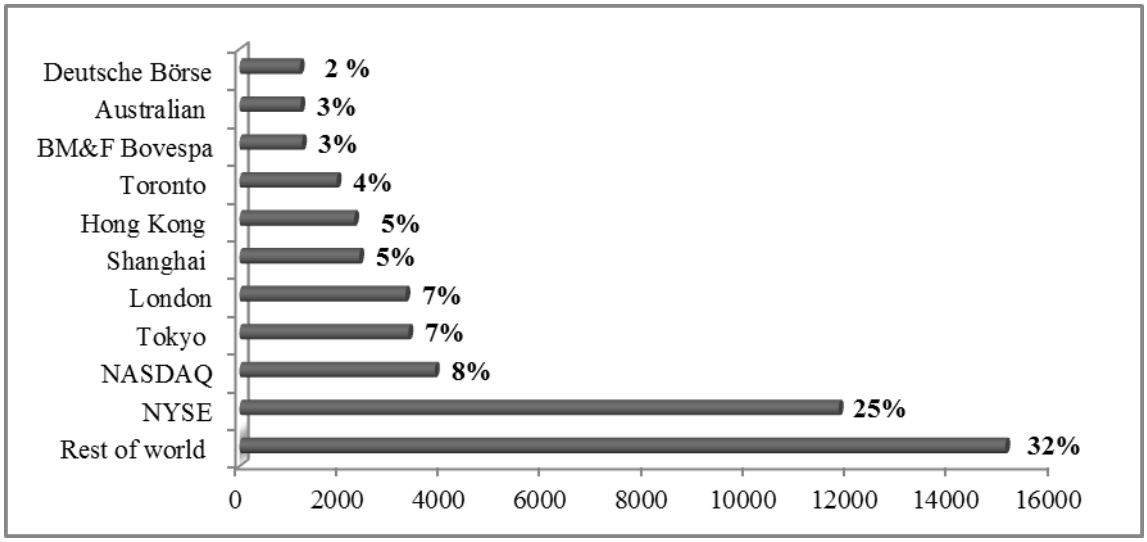

Chart 6: Top Stock Exchanges by Domestic Market Capitalisation (2011-US$ Billions)

Source: WEF. (2012). Financial Development Report 2012 .USA. p.20.

3.2.4 Fixed-Income Markets and Instruments

Fixed income trading consists of three main components: secondary market trading of government debt securities, secondary market trading of corporate debt securities and repo trading. Bond markets are the market in which debt instruments are traded in the same way as shares. Most fixed income markets are decentralized and quote driven and denominated by the secondary market for government debt securities. Bond markets play an important role in financial development and allocation of capital properly. Bonds are generally less risky, so the company pays interest payments, such as twice a year, and face amount at maturity date. New bond issuance can be underwritten by investment banks. Institutional investors are major participants in repo market, both as third party custodian and as direct counterparties. Long-term debt instruments involve bonds, notes, long-term bank loans, medium-term notes and asset backed securities. Corporate bonds are long-term financial instruments issued by companies with strong credit ratings. Corporations can issue short-term and medium term commercial papers that are good substitute for bank credits on their own credit standing (Fabozzi and Peterson, 2010, p.29; Baye and Jansen, 1995, p.45-52; Mishkin, 2007, p.31-32; Walter, 1998, p.9; Kidwell *et al.*, 2012, p.17). Chart 7 shows the market capitalisation of bonds by regions.

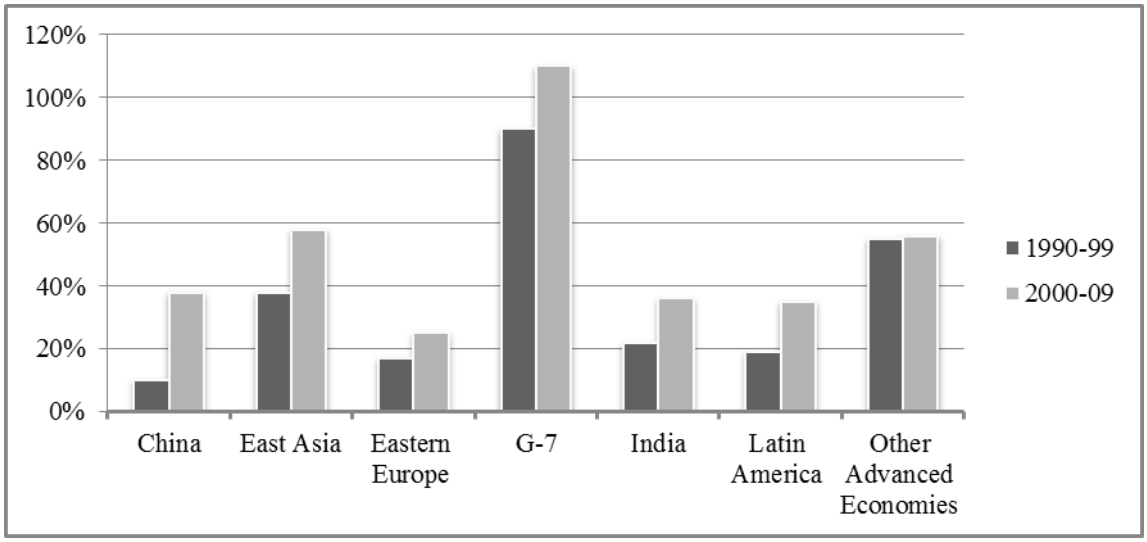

Chart 7: Market Capitalisation of Bonds
(Percentage of GDP)

Source: WEF. (2012). Financial Development Report 2012.USA.

Some corporate bonds are having convertible features in which the holders are able to convert them into a specified number of securities at any time until maturity date. Government securities are used for financing government's debts. In most countries, the largest debt securities issuers are the government. Municipal bonds are issued by state and local governments to cover its budget deficits and raise funds. An important characteristic of these bonds is tax advantage. The most municipalities bonds have limited secondary markets, though the bonds of large municipalities have secondary markets Moreover, mortgage is used to finance real state or residential finance. Underlying real estate is the collateral of the loan. Mortgage lenders sell the package of mortgage loans in the secondary market. Two types of mortgage instruments with fixed-rate and adjustable rate used are structured as fully amortised debt instruments with principal amount paid off over the term of the loan. The banking sector is usually very aggressive in mortgage market. On the other hand, a large number of mortgages is pooled together to form a new type of securities named as mortgage-backed securities having secondary market. Mortgage backed securities give ownership claim in the pool of mortgages (Fabozzi and Peterson, 2010, p.29; Baye and Jansen, 1995, p.45-52; Mishkin, 2007, p.31-32; Walter, 1998, p.9; Kidwell *et al.*, 2012, p.17).

Chart 8 shows the structure of the world bond market. International bond market consists of two segments that are foreign bonds and Eurobond. Foreign bonds

are issued by foreign borrower to investors in national capital markets and denominated in nation's currency. Eurobond is denominated in a particular currency other than that of the country in which they are sold to investors in national capital markets. Foreign bonds are named as the country in which they are issued. For instance, Yankee bonds are dollar dominated foreign bonds sold to foreign and domestic investors, Bulldogs are pound denominated foreign bonds sold in the USA (Agarwal, 2009, p.281).

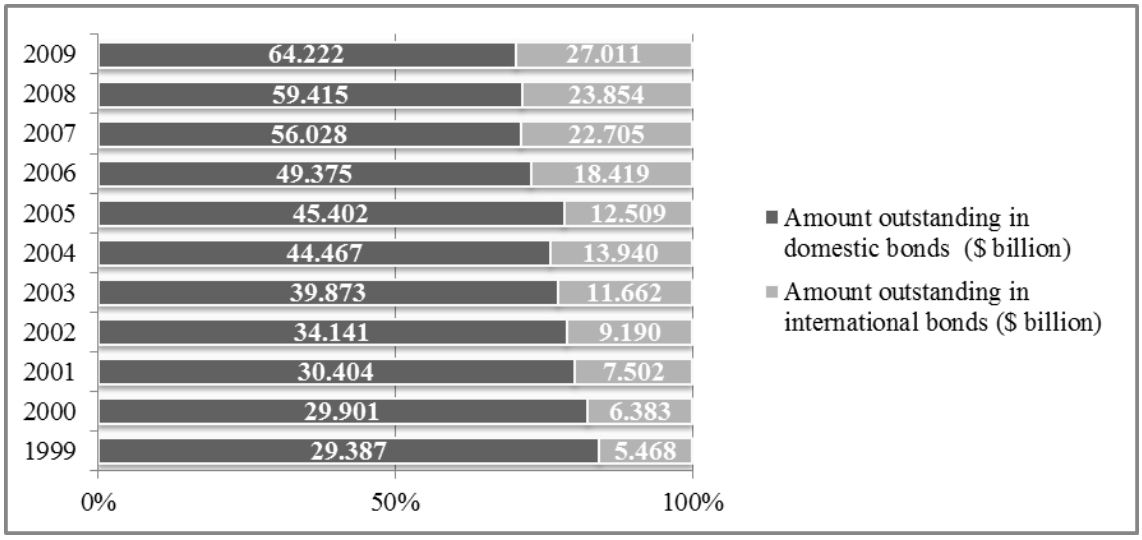

Chart 8: Composition of World Bond Market

Source: Arnold, G. (2012). Financial Times Guide to the Financial Markets. Pearson Education Limited.p.245.

3.2.5 Money Markets and Instruments

Money markets for short-term funds employed money market instruments refer to transactions less than one year and are OTC short-term financial markets. In major financial centres, money markets intermediaries are banks, securities underwriters and brokers, pension funds, insurance companies and finance companies, corporations usually use money market instruments. There are three dimensions of money markets: (1) the interbank market (2) primary and secondary market for money market debt securities (3) the repo market. Interbank market comprises unsecured lending between banks from overnight to up to three months. Money market instruments are debt instruments that are issued at par or at a discount. Repos are a form of secured lending. The banks and financial institution use repo to borrow money from each other. Most repos are short-term agreements; therefore, they are part of money market. While long-term repos form part of capital market (Roberts, 2008, p.96-98).

The money markets perform three main functions. Firstly, money market provides equilibrium between demand and supply of short-term funds. Second, the borrowers, and lenders of short-term funds fulfil their borrowing and investment requirements at an efficient market price. Finally, money market provides a venue for Central Bank intervention in effecting both size and cost of liquidity. A developed money market contributes to the financial system of the country by supplying short-term funds to trade and industry adequately so the money market is the important source of financing trade and industry. Conversely, the developed money markets encourage the development of capital markets by influencing long-term interest rates and additionally it helps functioning of central banks and commercial banks. Government formulates and revises monetary policy by taking into consideration the prevailing conditions in money market and raises short-term funds through the treasury bills in the market (Desai, 2009, p.59-61). In Table 5, the characteristics of money market instruments are briefly summarized.

Table 5: Characteristics of Money Market Instruments

Instrument	Typical Maturity	Liquidity	Default Risk	Secondary Market	Pricing
Treasury Bills	4-52 Weeks	Excellent	Extremely low	Yes	Discount
Commercial Paper	1-270 Days	Limited	Low	Yes	Discount
Banker's Acceptance	30-180 Days	Limited	Low	Yes	Discount
Negotiable Certificates of Deposit	4-52Weeks	Good	Low	Yes	Add-on
Repurchase Agreements	1-15 Days	Good	Low	No	Add-on

Source: Kidwell, D.S..*et al.* (2012). Financial Institutions, Markets, and Money. USA: John Wiley&Sons.p.207.

Short-term money market instruments are trade and time deposits, financial certificates, certificates of deposits, commercial papers, local authority bills, government short-term to medium term treasury notes and treasury bills, and bankers' acceptance, Short-term debt instruments with a maturity or redemption date one year or less at the date of issuance are traded in the primary and secondary market. The treasury

bills or T-bills are issued by the government with a maturity of 91 days, used for financing the federal government. The set amount is paid at maturity without interest payment. They are safest instrument so there is no default risk unless the government goes moratorium. The investor's earning is the difference between the purchase price and maturity value. Local authority bills are also issued by the local government bodies with maturity up to six months. Commercial paper is a promissory note and a short-term debt instrument is issued by municipality, and well-known companies backed up with bank lines of credit with maturities up to 270 days. The commercial paper issuing entities should be creditworthy enough. They are either interest bearing or sold at discount (Mishkin, 2007, p.28-29). The US is the largest commercial paper market in the world. It is followed by the Japan, Canada, France, and the UK (Arnold, 2012, p.226). The financial crisis of 2009 had a major impact on the commercial paper market. Bankers' acceptance is issued by a company and payable at some predefined date and guaranteed by the bank therefore it is more valuable than a standard check.

The bankers' acceptance is a promise in which the bank pays the face amount to the presenter of the draft. It is created to carry out international trade. Usually, the accepted drafts are resold in secondary market and used in similar manner with treasury bills. Certificate of deposits with maturities between one month and one year are written guarantee by banks to pay a depositor. At the maturity date, the issuer repays the principal and interest. Repos or repurchase agreement is another form of short-term borrowing. A repo is a collateralized loan which is backed by a financial instrument i.e. government bonds. The borrower sells the bonds to the lender with an agreement to repurchase these securities at specified future date and at a specified price, which are called repurchased price. The increase in price is the overnight interest. In reverse repo, the dealer buys the bonds from an investor with an agreement to sell these securities back them at a higher price (Fabozzi and Peterson, 2010, p.26-28; Baye and Jansen, 1995, p.42-45).

3.2.6 Foreign Exchange Markets and Instruments

Foreign exchange market is the biggest and most liquid financial market but less regulated than other financial markets in the world. The rapid growth of

international trade and global financial flows stimulate the expansion in the foreign exchange trading. Due to the lack of a central organizing body, the size and scope of the global foreign exchange markets are not known with exact precision. The development of foreign exchange market is monitored by the Bank for International Settlements with a survey of turnover in the foreign exchange and OTC derivatives markets conducted every three years. Foreign exchange market is a leading and broad indicator of status of an IFC. London as a global financial centre is the leader in foreign exchange trading. Foreign exchange is also a form of investment, like equities and bonds. Especially hedge fund managers prefer foreign exchange because of the liquidity and volatility of foreign exchange market. Foreign exchange market is a market in which one currency is traded against another currency. It is active 24 hours a day. Each transaction involves the exchange of money of one country for money of another country that causes changing ownership of deposit balances in the banks. Foreign exchange market is not a credit market but it is allied to money and capital markets. Foreign exchange market is denominated by two factors, the first factor is the strength of the economy, or the actual use of currency and second factor is to hedge against currency movements. The main features of foreign exchange market are vast turnover of funds and round-the clock trading. Trading activity is concentrated geographically and is influenced by time-zone consideration. Foreign exchange market is dominated by the commercial banks. It is an OTC market in which the trade is handled via quotes on electronic screens and the phone. Participants of foreign exchange market are dealers, brokers, customers, and central banks. The market turnover of global foreign exchange market is shown through years in Table 6.

An international financial centre cannot be developed without a foreign exchange market. The volume of foreign exchange business depends on the presence of many banks, openness to international trade and having a large international business base generally. There are three types of transactions in the foreign exchange market: (1) spot transactions, (2) outright forward transactions, (3) foreign exchange swap transactions. Spot transactions are the exchange of two currencies at an agreed rate on the date of contract for cash settlement within two business days. Outright forward transactions are the exchange of two currencies at an agreed rate on the date of contract

for purchase later. Foreign exchange swap transactions are the exchange of two currencies at a specified date and a reverse exchange of same currencies at a future date (Bailey, 2005, p.4; Roberts, 2008, p.101).

Table 6: Global Foreign Exchange Market Turnover

Net-net basis, daily averages in April, in billions of US dollars						
Instrument	**1998**	**2001**	**2004**	**2007**	**2010**	**2013**
Total of Foreign Exchange Instruments	**1.527**	**1.239**	**1.934**	**3.324**	**3.971**	**5.345**
Spot transactions	568	386	631	1.005	1.488	2.046
Outright forwards	128	130	209	362	475	680
Foreign exchange swaps	734	656	954	1.714	1.759	2.228
Currency swaps	10	7	21	31	43	54
Options and other FX products[2]	87	60	119	212	207	337

Source: BIS (2013). Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity 2013 WFE/IOMA Derivatives Market Survey 2012. USA.

(1) The category "other FX products" covers highly leveraged transactions and/or trades whose notional amount is variable and where decomposition into individual plain vanilla components is impractical or impossible.

The UK accounted for 37% of global foreign exchange trading in October 2012 also shown in Chart 9. In October 2012, twice US dollars are traded on foreign exchange market in the UK than the USA, and more than twice euros traded in the UK than in all-euro area countries (The City of London, 2013, p.8).

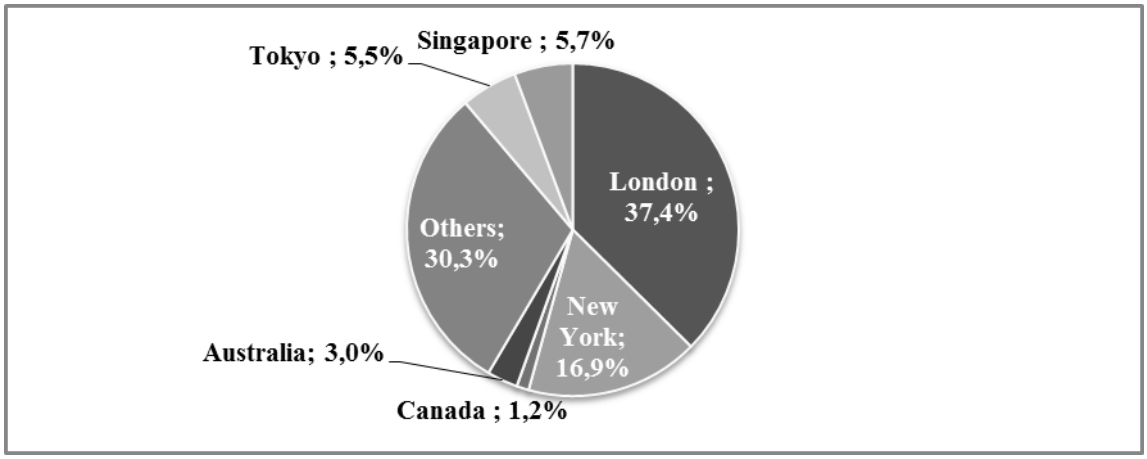

Chart 9: Foreign Exchange Trading Share October 2012

Source: The City of London. (2013). Key Facts About The UK As an International Financial Centre. UK. p.8.

3.2.7 Euro Markets

The emergence of the Euromarkets is a turning point in the history of international finance. Euromarkets are a market in outside of country time deposits and loan in hard currencies. In 1950's banks in London and Paris started to accept dollar time deposits from foreigner because of economic and political factors. However, the main reason for the existence of Euromarkets is to execute transactions outside the US regulations. The dollar balances were deposited with correspondent banks with England and France rather than transfer to the banks in the United States. US balance of payment program closed the US Market to foreign borrower in 1964. The Eurobond market was launched in July 1963. The sales of Eurobond started in the middle of 1970s nearly 10 years after first issuance of Eurobond. Moreover, negotiable Certificates of deposits (CDs) have been developed in London market. These instruments are known as London Dollar CDs or Euro CDs, which represent Eurodollar deposits with negotiability and liquidity (Dufey and Giddy, 1981, p.39).

Eurocurrency market developed to meet the short-term financing needs for multinationals corporations. Eurocurrency is an instrument in which foreign currencies are deposited in foreign bank outside the significant country. Eurocurrency has nothing to do with "Euro" itself. Eurocurrency deposits are denominated in currency other than the country in which the banks are located. Eurodollar is a dollar-denominated time deposit held in the banks outside the United States. Eurocurrency business is wholesale; mainly interbank markets, the banks operate with less overhead and the banks have no fee ceilings and interest rate restrictions. Half of Eurocurrency deposits are interbank transfers. Moreover, Eurocurrency deposits are liquid, so many of maturities are less than six months. The main centre of Eurocurrency, especially euro dollar, is London. Depositors or borrowers can take better rates on Eurodollar deposits and loans than in New York domestic market (Reed, P., 1998, p.96-101). The second function of Eurocurrency market is that it serves as storehouses for excess liquidity. The international banks, multinational corporations, and central banks invest their excess funds in those markets and get higher returns. The absence of withholding tax on interest earnings in these markets makes them attractive to foreigners. Lastly, these

markets make international trade easier so the banks use Eurocurrency loans to make payments (Kidwell, *et al*., 2012, p.395).

Euroequity markets provide the equity capital from institutional investors outside their domestic markets. Raising funds from international sources enable companies to enlarge their shareholder base and rise the fund better term than domestic market. Euroequity issues are carried out by syndicates of banks that sell the shares in different financial centres. London is the centre of Euroequity. Eurobonds market developed to meet the requirements of government and corporates for long-term finance. Eurobonds are denominated in a currency other than the country in which they are sold or bought. For instance, a Canadian bond is issued in Germany and denominated in U.S. dollars, which is different from the currency of this country. Eurobonds are direct claims on the issuers of the instruments and they are bearer certificates with coupons attached. The issuers of Eurobonds are attracted because of free of regulations and lower costs. For investors, the Eurobonds are attractive so the issuers are highly rated institutions such as governments and businesses and papers are generally senior debt and yields are higher than domestic bonds and papers. Good secondary markets like London, Luxembourg and Frankfurt exchanges offer liquidity. Eurobonds are issued with floating tied to one variable such London Interbank Offered Rate (LIBOR) or fixed interest rates. They are underwritten by international syndicate of large commercial banks and securities underwriters. Eurobond can have convertible features in which they are converted to stock in the parent company of issuer under certain conditions.

Euronotes are the securities with three to six month coupon issued on underwriting basis (Reed, P., 1998, p.102-103). In Eurocommercial paper, the companies sell short-term obligations to investors (Baye and Jansen, 1995, p.52-54). Eurocommercial papers are sold on best efforts basis. They are attractive papers for investors so secondary markets offer liquidity and the issuers' credit are usually high and returns or yields are higher than in Eurocurrency market. Financial centres around the world have entered the game, such as Zurich, Geneva, New York, London, Tokyo, Singapore, and Frankfurt. Euromarkets are mostly administrated by commercial banks

in financial centre. The markets of Tokyo and Singapore use the version of Asian dollars (Reed, P., 1998, p.102-103).

3.2.8 Securitisation and Structured Securities

Securitisation is the financial product that leads up to the collapse so the relationship between lender and borrower is broken up. Securitisation allows risk to be spread; on the other hand, it creates imperfect information (Stiglitz, 2010, p.14). Securitisation means the transformation of illiquid assets into marketable fixed-income securities. The stable cash flow that pays interest and principal into a form of bond transform into bond that can be sold for a lump-sum cash payment. Structured security is backed by the underlying assets. The investment banks and structured products desk of major banks issue structured securities. Securitisation enables that the banks can convert illiquid long-term loans on their balance sheet into liquid assets. There are variety forms of structured securities. The mortgage-backed securities are pooled mortgage loans. Asset backed securities are bonds or notes are backed by financial assets such as auto loans, credit card receivables, collateralised debt obligations, student loans and leases. The United States, in particularly New York International Financial Centre, dominates the securitisation market whereas London is the European centre for securitisation (Roberts, 2008, p.93-94).

3.2.9 Derivatives Markets and Instruments

Due to the rapid growth of financial markets, many new financial products called derivative products are developed. Derivatives are financial instruments in the form of contracts, which derives their values from the prices of the products that are commodities, financial assets, and numerical indexes of various markets. A derivative instrument is a financial product whose return or payoff depends on the underlying products such as stock, commodity, or index. Derivative markets improve risk management and risk diversification. The objective of using derivative instruments for the producers or users of commodities and for exporter and importer is to hedge against price changes (Reed, P. 1998, p.103-104). Derivative markets enable price discovery and have high liquidity (Parameswaran, 2011, p.340). In twentieth century, banks, securities brokerage houses, and insurance companies launched by getting some support

from technology and new mathematical theories more complex financial contracts to satisfy many other needs of businesses (Reed, P. 1998, p.103-104).

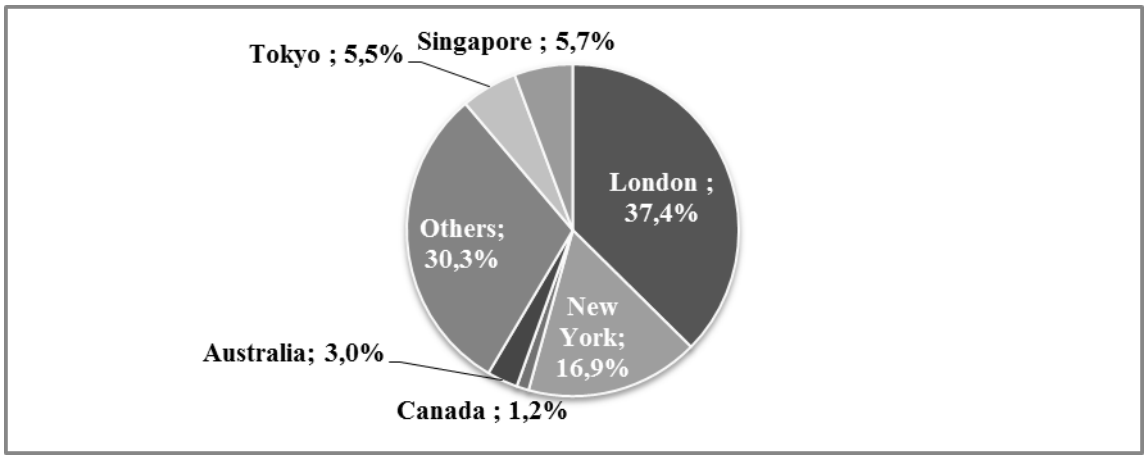

Chart 10: OTC Derivatives Average Daily Turnover (April 2010)

Source: The City of London. (2013). Key Facts About The UK As an International Financial Centre. UK. p.12.

Derivatives are traded in both organised exchanges and over-the counter markets. London is the largest market for OTC derivatives trading. More than two thirds of OTC derivative trading is handled in in the two global financial centres; London and New York, Chart 10 shows OTC derivatives turnover based on location in April 2010. The international financial centres offer investors and borrowers in a broad range of derivative products with various terms and conditions (Roberts, 2008, p.88). Transactions costs are low relative to spot markets (Parameswaran, 2011, p.340).

However many banks trade these products for speculation purpose. There are two basic types of derivatives instruments, options, and forward/futures. An option gives the holder the right to purchase or sell an asset for specified price, called exercise or strike price, on or before specified expiration date. OTC financial derivatives are not traded on organized exchanges and consisting of interest rate and credit default swaps and derivatives on equities and foreign exchange. The contracts are initiated by the demand of the customer. Forward agreements exchange a specified amount of money for a specified amount of some assets or goods at a specified place and date in the future. The party buying at future date takes a long position whereas country party delivers at future date takes short position. Forwards are traded in over-the counter

markets. There are forward markets, in which a wide range of commodities are traded but most important market is for foreign exchange. Options give the right the holder to exercise the contract at an agreed date. Swap contract gives the each party to exchange a set of payments for another set of payments owned by another party. There are two main types, which are currency and interest swaps. In currency swaps, the notional principle is exchanged. In plain vanilla interest rate swap, the fixed interest payment is exchanged for floated interest payment, all dominated in the same currency (Mishkin, 2007, p.344, p.351, p.354). The holder of futures contract delivers of an asset at a specified maturity date for agreed price, called future price. The future price is paid at contract maturity. Warrants are call options issued by a company. The company issue a new share of stocks to exercise a warrant, for this reason, the total number of outstanding shares increases (Mishkin, 2007, p.335-336). In order to hedge credit risk, the new type of derivatives, credit derivatives, is initiated during the late 1990s and the 2000s. Credit derivatives allow the lenders or banks to spread the risk of loan default to other investors. They are off-balance sheet instruments (Roberts, 2008, p.89). Global futures and options volume by region in 2012 is shown in Chart 11, Asia Pacific volume is the highest with 35,.60 % (Futures Industry Association, 2013, p.20).

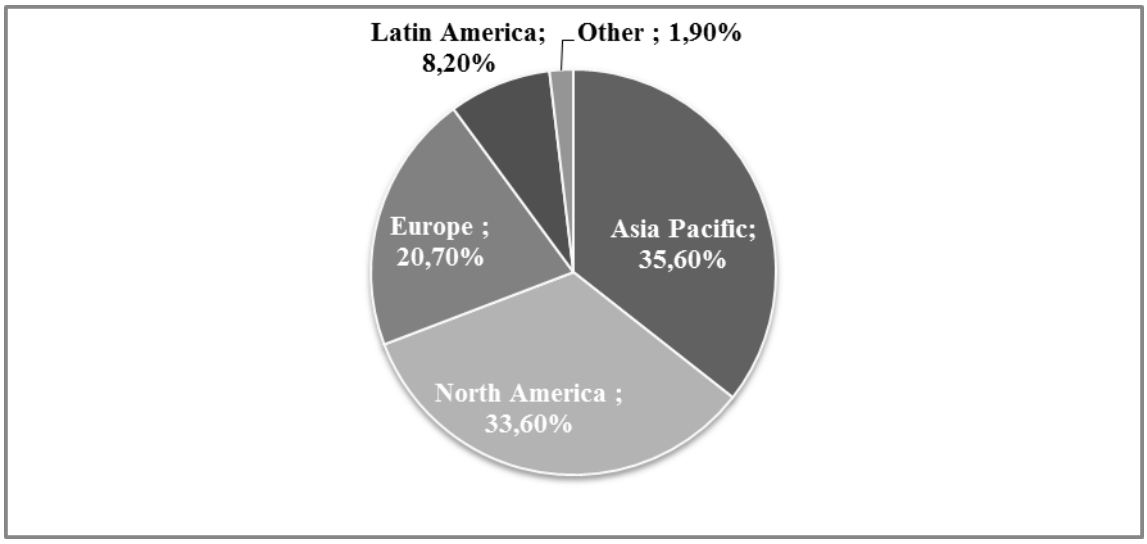

Chart 11: Global Futures and Options Volume by Region (2012)

Source: Futures Industry Association. (2013). FIA Annual Volume Survey. p.20.

Moreover, exchange-traded derivatives are bought and sold on organised exchanges. Exchange Traded Derivatives (ETD) contracts that include financial futures and traded options are standardised features with lot size, quality, and settlement. They have central counterparty clearing house that eliminates counterparty risk for market participants (Roberts, 2008, p.86).

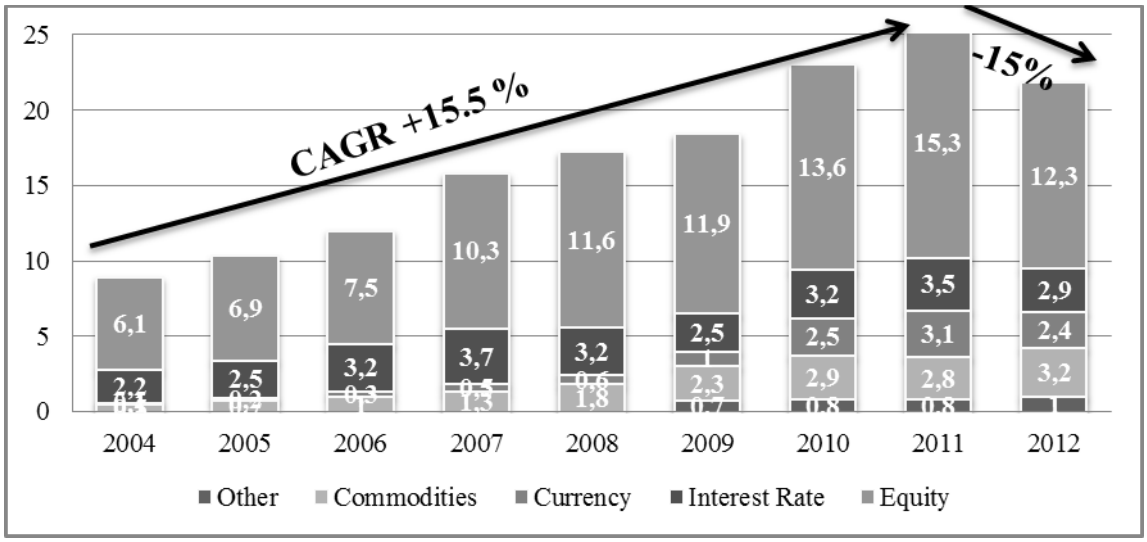

Chart 12: Number of ETD Traded Worldwide
(Billions of contracts)

Source: Devai, R. and G.Naacke. (2013). WFE/IOMA Derivatives Market Survey 2012. USA. p.7.

According to WFE statistics shown in Chart 12, 21 billion ETD contracts that cover 10 billion options and 11 billion futures were traded on exchanges worldwide in 2012. Number of global traded derivatives has decreased for the first time since 2004 and the decline of volumes was 15% in 2012 that is a significant ratio in all asset classes except commodity derivatives. Commodity derivative market significantly increased in 2012. In 2012 more futures contracts were traded as opposed to in 2011 (Devai and Naacke, 2013, p.7).

When the trading activities of exchanges are analysed, two thirds of the top 30 exchanges suffered a drop in volume in 2012 that are shown in Table 7. Chicago Mercantile Exchange (CME) volume was down 14.7%, respectively EUREX volume was down 18.8%, and New York EURONEXT volume was down 14.5%. On the other hand, emerging exchanges such as India's NSE (National Stock Exchange) and

Moscow Exchange volume was down 8.6% and 3.4% respectively (Futures Industry Association, 2013, p.21).

Table 7: Top 10 Derivative Exchanges

Rank	Exchange	Number of Contracts Traded and/or Cleared (January-December 2012)
1	CME Group	2.890.036.506
2	EUREX	2.291.465.606
3	National Stock Exchange of India	2.010.493.487
4	NYSE EURONEXT	1.951.376.420
5	Korea Exchange	1.835.617.727
6	BM&F BOVESPA	1.635.957.604
7	CBOE Holdings	1.134.316.703
8	NASDAQ OMX	1.115.529.138
9	Moscow Exchange	1.061.835.904
10	Multi Commodity Exchange of India	959.613.240

Source: Futures Industry Association. (2013). FIA Annual Volume Survey. p.22.

America region dominates 82% of the traded volumes of the single stock options. Whereas the most significant decline in volumes nearly 19% were in EAME in 2012. A decline in equity derivatives in 2012 is due to the sharp drop of index options traded on Korea Exchange, and the volatility indices decreased in 2012 except Japan. On contrary, single futures volumes (99% of the volumes in 2012) are located in EAME and Asia Pacific region. Chart 13 shows the trend of exchange traded equity derivatives volume between 2004 and 2012. The Compound Annual Growth Rate (CAGR) is 13.9 % until 2011, but it is a sharp decline between 2011 and 2012, which is 19.5%. On the other hand, most of single stock futures are traded OTC on EUREX and New York Stock Exchange-London International Financial Futures and Options Exchange (NYSE LIFFE) (Europe), however they are cleared and registered by the exchanges (Devai and Naacke, 2013, p.9-10).

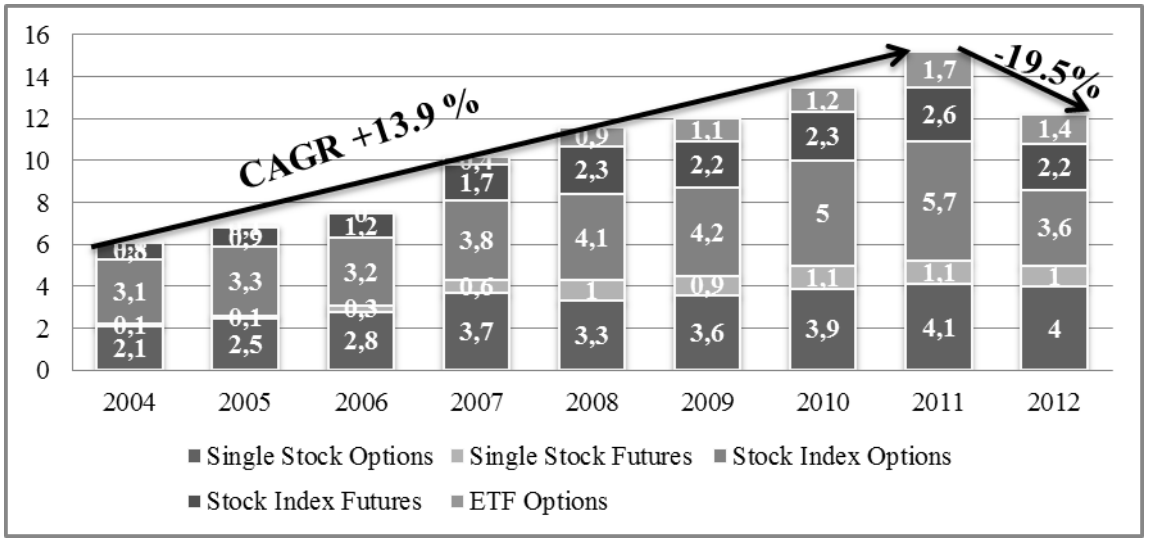

Chart 13: Number of Equity ETD Traded Worldwide
(Billions of contracts)

Source: Devai, R. and G.Naacke. (2013). WFE/IOMA Derivatives Market Survey 2012. USA. p.10.

Financial derivatives first came into sight in the early 1970s following the breakdown of Bretton Woods System of fixed exchange rates. CME launched the currency futures in 1972 and the Chicago Board of Trade introduced the first interest rate futures contract in 1975. The first financial derivatives exchange in Europe is London LIFFE opened in 1982 (Roberts, 2008, p.86). Volume in Asia Pacific region in 2012 is smaller than in Americas but it increased faster (12%) unlike Americas In 2012, both exchanges experienced a decrease of volumes (respectively -24% and -26%). The size of Long-term interest rate (LTIR) contracts is smaller than Short-term interest rate (STIR) contracts. Interest rate derivatives market is dominated by OTC products because of the importance of interest swaps. In the near future, OTC market regulation enhances clearing of standardized interest rate derivatives afterward the volumes of interest rate derivatives will transfer OTC to exchange traded (Devai and.Naacke, 2013, p.26-28).

When the financial derivatives was analysed, both interest rate options and futures also decreased significantly in 2012 as seen in Chart 14. The interest rate derivative market is important for both ETD and OTC derivatives. Interest rate derivatives market is a highly concentrated market in which fifteen most active contracts comprise 86% of total volumes. Interest rate derivatives also declined due to

unfavourable factors such as low interest rate environment, no economic growth, and no credit expansion. Short-term interest rate derivatives are defined as an original term to maturity of underlying asset being equal to or less than one year. Interest rate derivatives traded on CME Group and NYSE LIFFE comprises 84% of total volumes. CME Group in the United States dominated 85% of the region's volume in 2012 (Devai and Naacke, 2013, p.26-28).

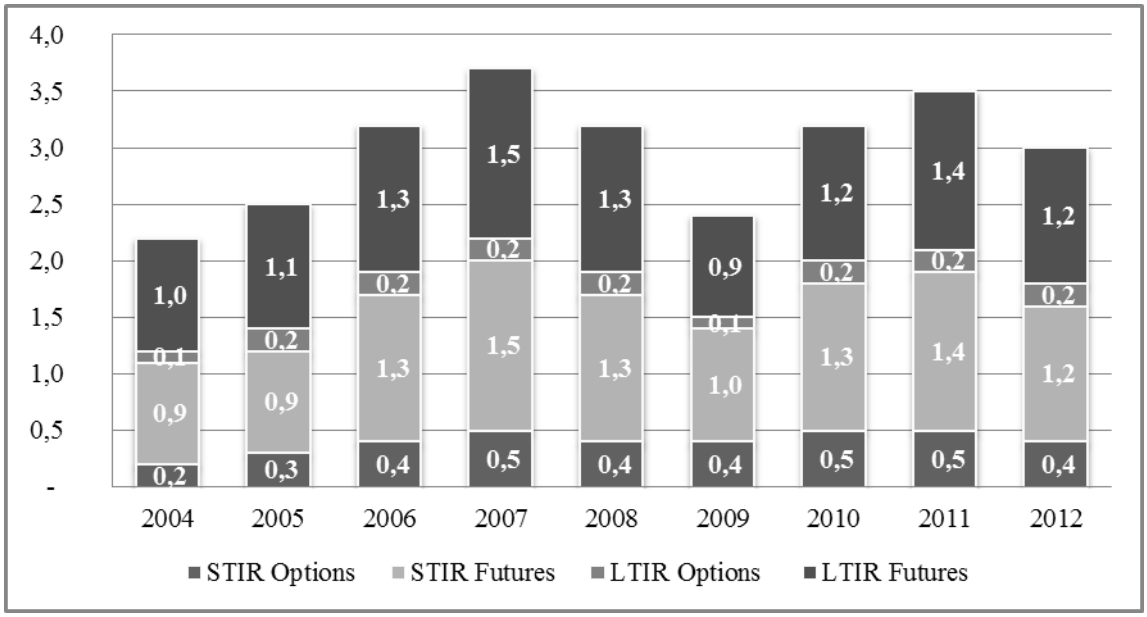

Chart 14: Number of Interest Rate ETD Traded Worldwide (Billions of contracts)

Source: Devai, R. and G.Naacke. (2013). WFE/IOMA Derivatives Market Survey 2012. USA. p.26.

Exchange traded fund (ETF) options markets first appeared at the beginning of the 1990's in the United States after 10 years they were used in Europe. ETF derivatives are used by retail investors and traditional index products are used by institutions. For example in CBOE (Chicago Board of Exchange) located in the United States, retail participations higher in individual equity options and ETF and lower in cash index and volatility contract. The contract size is different from international standard in some regions such as KOSPI 200 options that is world biggest index options in terms of volumes traded. Moreover, the number of ETF options traded sharply decreased (19%) in the United States (Devai and Naacke, 2013, p.12; p.24).

Currency derivatives faced the highest decline in 2012 because of sharp decrease in India as seen in Chart 15. The two biggest contracts in terms of national

value are Eurodollar futures traded on CME Group and three-month Euro Interbank Offered Rate (EURIBOR) futures traded on NYSE LIFFE. In 2012, currency derivatives traded on exchanges decreased by 23%. Sixty percent of total in terms of volume is traded in India; on the other hand, 90% of total is traded in terms of notional value on CME and BM&FBOVESPA. 99.5% of the notional outstanding amount is OTC products (Devai and Naacke, 2013, p.31).

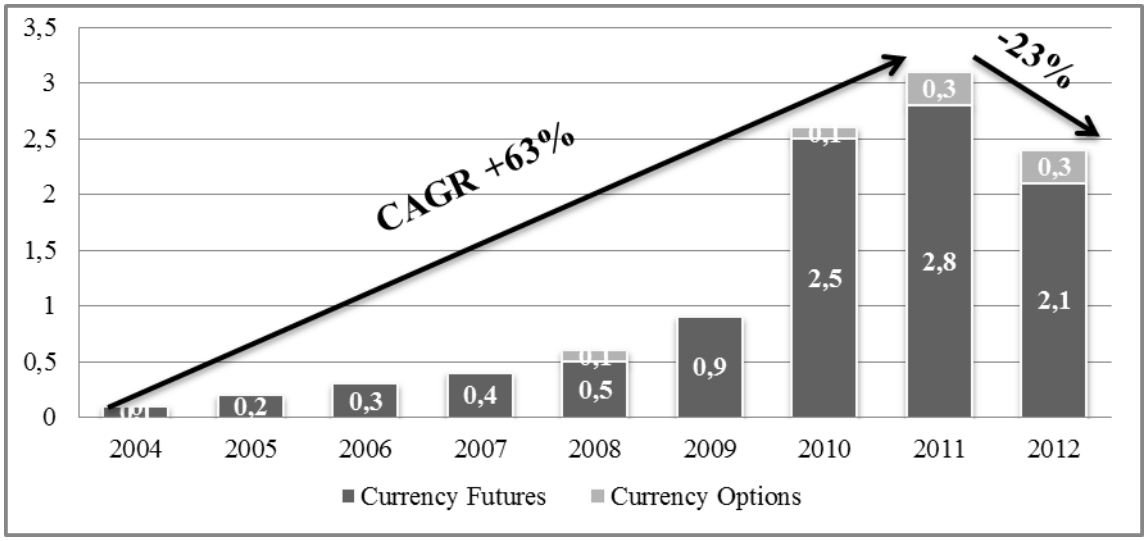

Chart 15: Number of Currency Options and Futures Traded Worldwide (Billions of contracts)

Source: Devai, R. and G.Naacke. (2013). WFE/IOMA Derivatives Market Survey 2012. USA. p.31.

3.2.10 Commodity Markets and Instruments

The commodity business started with the introduction of a grain futures contract by Chicago Bureau of Trade (CBT) in 1865 (Peters, 2008, p.86). There are many commodity markets, some of which are the part of exchanges, around the world. New York Mercantile Exchange, the London Metal Exchange, Tokyo Commodity Exchange are specialized commodity markets. Precious metals (gold, silver), industrial metals (aluminium, zinc, copper), petrochemicals, agricultural goods (cotton, sugar, coffee, wheat) are traded in commodity markets. In organized commodity markets, trading is realised through contracts for the delivery of commodity at a future date. Commodities traded in organised markets need to have certain characteristics. They must be graded in accordance with well-defined features that are storable and divisible into defined units. Commodities related products such as base and precious metals,

energy products, pulp and paper, emissions, agricultural products, weather, and fright are traded on OTC market (Bailey, 2005, p.4).

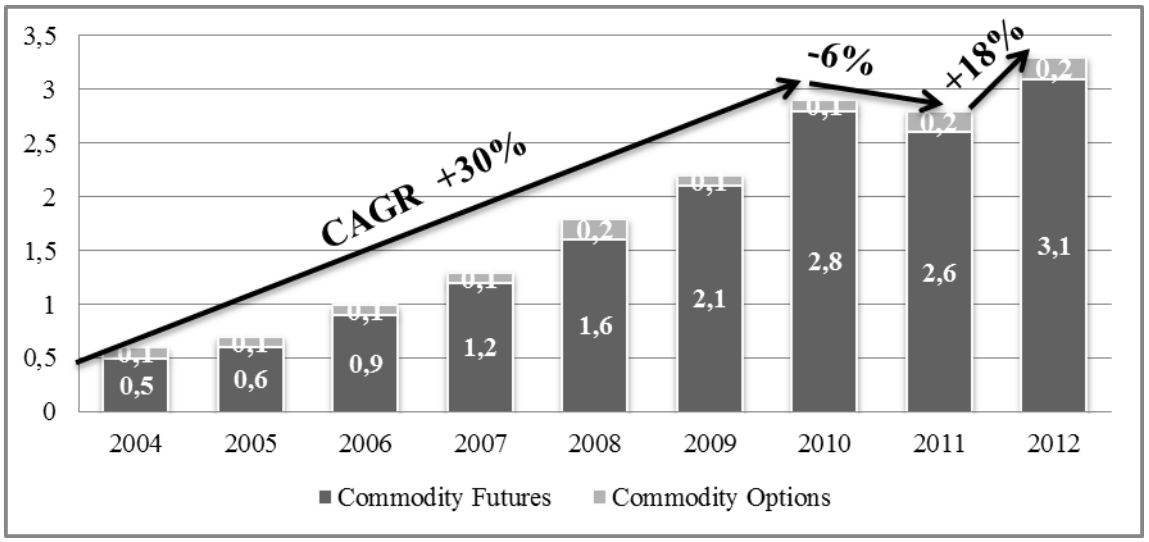

Chart 16: Number of Commodity Options and Futures Traded Worldwide (Billions of contracts)

Source: Devai, R. and G.Naacke. (2013). WFE/IOMA Derivatives Market Survey 2012. USA. p.32.

As seen in Chart 16, commodity derivatives market grew 18% in terms of volumes since contracts traded on mainland Chinese exchanges increased 34%. The growth of the market was driven by Chinese Exchanges (Dalian Commodity Exchange, Shanghai Futures Exchange, and Zhengzhou Commodity Exchange) share of which in total number of traded contracts increased from 36% to 42% and by the transfer of OTC energy swaps to futures by ICE (Intercontinental Exchange) in the United States. On the other hand, CME Group 67% of the total open interest dominates the commodity derivatives market on all segments (Agricultural, Energy, and Metal). In Europe, there are two largest exchanges, which are ICE Futures Europe and London Metal Exchange. Growth rate of energy derivatives is lower than agriculture and metal (Devai and Naacke, 2013, p.33-34).

When contract volumes of commodities markets by product group are analysed in Chart 17, agricultural contracts take the biggest market share with 43%, then energy contracts with 29% and finally metal contracts with 28% in 2012 (Devai and.Naacke, 2013, p.33-34).

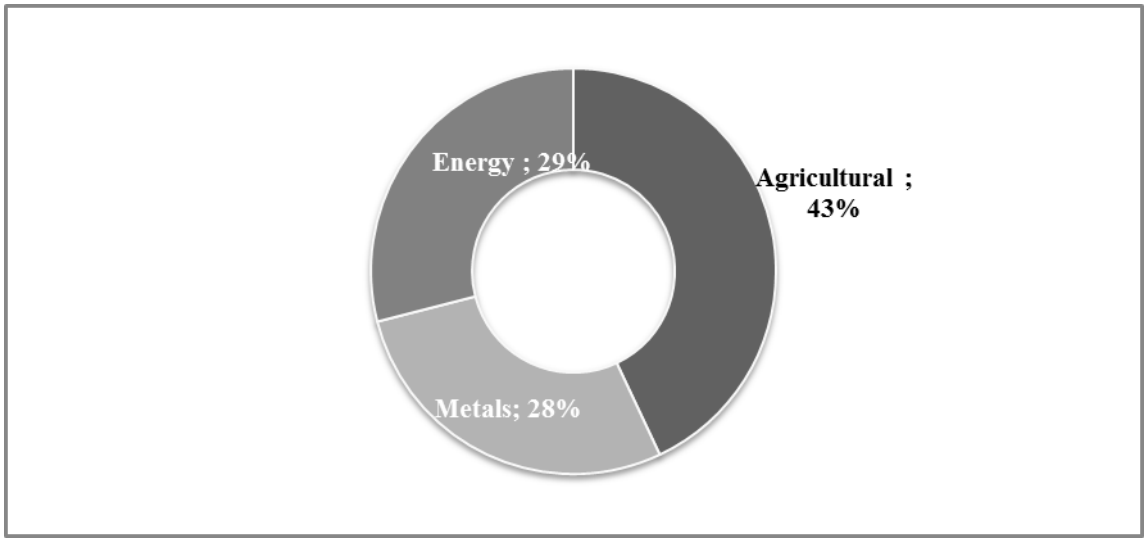

Chart 17: Breakdown of Commodity Derivatives Volumes by Products (2012)

Source: Devai, R. and G.Naacke. (2013). WFE/IOMA Derivatives Market Survey 2012. USA. p.35.

SECTION TWO

4. MULTI PERSPECTIVE ANALYSIS OF INTERNATIONAL FINANCIAL CENTRES

Financial centre is a place in which a wide variety of financial businesses is clustering in one centralized location. The term of centre expresses a notion of space, that of a position in relation to other location. The meaning or definition of international financial centre is unclear, people can use distinctive terms that mean many different things. It may mean (1) a source of global financial influence; (2) the top of hierarchy in financial centre places and ranking; (3) a market with unconventional set of regulations; (4) a geographic area for financial activities; (5) an external currency market (offshore financial market) (Choi, 1984, p.14).

A cross-border market for international financial services has stemmed from ancient such as Babylon; Samarkand, which is the oldest city in the world, functioned as financial centre through Silk Road between China and Europe. Major financial centres developed in Europe then Constantinople to London, Singapore, New York, and Shanghai over centuries are emerged as leading financial centres. Before 1870, a large number of cities that included Amsterdam, Berlin, Florence, Frankfurt, Genoa, Hamburg, London, Milan, New York, Paris, Philadelphia, Rome, Turin, Venice, and Zurich provided various regional and global financial services, but none of them denominated others. Towards the end of the nineteenth century, London and Paris developed as the strongest financial centres, which were well integrated into global economy. After the development of gold standard in 1870, the development of financial centres and international finance were accelerated so a stable exchange rate contributes to the successful development of international financial markets. London became a dominant IFC in the world and remained dominant until the World War I in 1914. After the World War I, New York challenged London through the Great Depression of 1930s. New York and London had been transformed in the 19th and 20th centuries after this transformation they became competitors. New York remained the leading IFC after the World War II and until the restrictive regulations, which were regulation Q on US

Banks. This restriction caused the shifting of the funds of large depositors to abroad and development of Eurodollar and Eurocurrency market in which dollar deposits and loans were allowed to hold at banks outside the USA in major financial centres in the early 1970s, the biggest amount of international financial activity transferred to London back. During the second half of the 20th century, IFCs located in developing countries have grown. However, these emerging centres are geographically distant from the principal sources of the funds, instant communication and increasing the mobility of funds eliminate distance problem (Kaufman, 2000, p.4-5). London established its position as the centre of US banks servicing US corporations operating in Europe, and recycling petrodollars (Wojcik, 2013, p.2740). The introduction of negotiated securities commission rates on May 1975 in New York Stock Exchange was the beginning of the new era. Afterwards, it was followed by the liberalisation of restrictive pricing and trading practices and market access rules in Britain, which was called Bing Bang (Walter, 1993, p.84). Similar changes were made in Japan. Tokyo progressively increased its importance due to the liberalisation policies offered by the Japanese government in the 1970s. Then Tokyo tried to enter New York and London axis. Unfortunately, the Japanese economy developed into a real estate bubble and the Yen eventually depreciated and suffered from long-term stagnation. Since then, Tokyo's influence as a financial centre as has lessened to an extent. The Big Bang of 1986 set free US banks entering and consolidation in London. The integration in European Union gave London a role as a centre of European wholesale finance and a gateway for US financial institutions, additionally London became the centre of financial transactions in euro. New York boomed after annul of the Glass Steagall Act that allowed deposit-taking banks to develop investment banking business in 1999 and the Commodity Futures Modernisation Act of 2000 that left derivatives and OTC markets unregulated. Nonetheless, after 9/11 event and the Sarbanes–Oxley Act that requires stringent reporting in the USA, London's position has been strengthening (Wojcik, 2013, p.2741-2743).

Today New York and London is only genuine global centre in the world. Unfortunately, the global financial crisis changed the world financial structure. Large number of employees in finance sector lost their jobs in the two historical international

financial centres, i.e. London and New York. International financial centres have high broad base, trade and investment capabilities, well developed, and liquid financial markets. In addition to these, they have proper regulatory framework and develop physical infrastructure backed by an array of supporting services i.e. accounting, law, and various range of consulting activities. The importance of financial centres for Turkey is obvious therefore in the following parts, the financial centres will be analysed and investigated in details.

4.1 CONCEPTUAL FRAMEWORK AND FUNCTIONS OF INTERNATIONAL FINANCIAL CENTRES

A financial centre is an area in which high-level financial functions and services are concentrated. A financial sector includes banking, insurance, securities, and brokerage activities; but it also includes accounting, auditing, lawyer, and other professional services. The relative importance of a financial centre can be measured by various indicators, such as total employment in financial centre, the presence of local banks, and other financial institutions, the presence of head offices of foreign banks, the volume of check cleared, and volume of stock exchange transactions, the contribution to country's GDP. Spatially, a financial centre is normally a city, but it is more often localized area within the city boundary such as in London the City and in New York Wall Street.

In addition, the financial centre is a multidimensional subject that is related to economic geography, geography of finance, spatial economics, financial economics, international economics, and international banking. Geographical economics focus on the distribution of economic activities whereas financial economics pay attention to distances not to financial centres. A financial centre is a market place for financial services. IFCs engage in a wide range of financial activities, financial activities are foreign exchange trading including cash, forward and swap transactions, equity and debt securities and derivatives trading on cash, futures and options markets both organised and OTC, as well as money management, payment clearing and settlement, merger and acquisitions and securities underwriting activities. Nevertheless, international financial centre means a non-domestic or non-national financial centre in which foreign and

external financial intermediation take place. In national financial centre, domestic lenders, borrowers, and intermediaries play role whereas in international financial centre non-domestic lenders, borrowers and intermediaries play role (Choi., 1984, p.15; Park Y.S. and Essayyad, 1989, p.176). International financial centres have a major urban concentration of financial services in which the larger portions of these services are directed to international transactions. These centres are at the same time the leading domestic centres for financial services in their own countries (Goldberg, Helsley and Levi, 1989, p.83). International financial centres are distinguished from domestic markets. The centre does not have one single currency so the financial transactions in centre do not directly connect with domestic banking system. There is also an asymmetry in government regulations between offshore and domestic financial markets, if the country has an offshore financial centre (Park Y.S., 2011, p.2).

Kindleberger defines the financial centre as highly specialized functions of lending abroad, serving as a clearinghouse for payments among countries, providing a relatively efficient market, determining prices of international financial instruments and services such as international payments, foreign lending, and borrowing. In addition to this, the international financial centres perform a medium of exchange and a store of value function, balance the savings, and investments of the entrepreneurs, and transfer financial capital from savers to investors, additionally affect payments and savings over distance. Single payment between separate points in a country is efficiently fulfilled through a centre, moreover both seasonal and long run surpluses and deficits of financial savings are harmonised in the centre. He views financial centres as the source of global influences, London was the worldwide centre during the nineteenth century, and then New York became a worldwide centre in the twentieth century (Kindleberger, 1973, p.7; Liu and Strange, 1997, p.652-653; Reed, H., 1980, p.21). Similarly, Haegele defines the international financial centre as a money and capital market whose participants are its financial intermediaries have significant international relationships. The centre is the agglomeration of broad range of institutions and services involved in the intermediation of international financial flows (Citation from Reed, H., 1977, p.5-6). The financial centre also performs a medium of exchange function and inter-spatial store of value function. Tschoegl defines a financial centre as a central place for

financial capital and currency that are collected, distributed and exchanged (Citation from Jarvis, 2009, p.3). Tschoegl also describes the financial centre a primary market in which finance capital is collected and exchanged. On the other hand, an international financial centre is an intense concentration of many particular types of international financial businesses and transactions in one centralized location (Citation from Mainelli, 2006, p.219). At the basic level, an IFC is a city with high concentration financial institutions that fulfil financial activities. They are exporters of capital. Nadler defines an IFC as a city that clears a large volume and variety of international financial transaction acts as a bank for the entire world. Johnson (1976) defines an international centre as a city in which people concentrate on financial activities such as banking, insurance, and supplementary types of financial requirements of a region extending beyond the boundaries of the host country within which the city is located to include the world or a substantial part of it (Citation from Reed, H., 1977, p.18-19). Whereas a national financial centre, such as Istanbul, Warsaw, Panama, hosts to foreign financial institutions rather than magnets of financial power in their own rights.

Khoury defines an IFC as a location in which the financial transactions, both investment and borrowing, process that justified by domestic and trade activities (Citation from Park Y.S. and Essayyad, 1989, p.68). Gehrig terms the financial centres as geographical location with cluster of branches and subsidiaries of banks and other financial intermediaries in the specified region (Gehrig, 2000, p.416). The top ten contributors that are leading financial centres to world economy are mainly from North America, Europe, and Asia Pacific shown in Table 8.

Table 8: Classification of Top Financial Centres

Continent	Financial Centres
America	New York
Europe	London
	Paris
	Frankfurt
Asia Pacific	Tokyo
	Hong Kong
	Singapore
	Sydney
	Shanghai

Source: Long Finance (2013). Global Financial Centres Index.

Financial centre represents a concentration of financial activities in a specific area within an urban agglomeration with unique characteristics and endowments. In financial centre financial production takes place, this production occurs in territories with specific market segments that exist in the centre. There are distinctions between territories, which represent different financial markets such as stocks, commodities, derivatives, and market segments are considered as industry clusters and sectors within the territory. The firms, the financial institutions, and the financial markets located in financial centre determine the spatial scope of financial centre. For instance, in stock market perspective, the location of the listed firms on stock exchange represents the hinterland of the exchange that is the action space of the centre. Strong international attachments for channelling foreign capital into local economy are essential so the capital is footloose. The exterior of the financial centre determines the degree of openness and accessibility of financial centre to outside world. In this context, the financial centre has dual role due to in hinterland and as well as the exterior (Karreman and Knaap, 2007, p.4-5).

After given different definitions of international financial centres and multidimensional framework, the functions of international financial centres are explained in different researchers' point of view. Zeng and Kanglin (2003) indicate six main roles of international financial centres in the world economy: (1) Financing: Financial centres participate international interbank borrowing and lending and foreign exchange transactions and issue bonds and stocks. (2) Investment: Financial centres finance capital through the financial institutions in the area and make use of capital to invest, transfer funds from one region to other region. (3) Transactions of financial products: Financial centres serve as a clearinghouse centre for country's surplus funds by providing investment opportunity and liquidity. (4) Innovation: Financial centres innovate and release new financial products continuously. (5) Composite Service: Financial centres encourage the good infrastructure and financial support services such as accounting procedures, law, software technologies. (6) Information: Financial centres gather and broadcast economic and relevant political information (Citation from An, 2010, p.10). Porteous (1999) describes the financial centre as the best access point for profitable utilisation of valuable resources and information due to economies of

localisation, a specialised workforce, services and information networks (Citation from Karreman and Knaap, 2007, p.5). Choi, Tschoegl and Yu (1986) enlighten the following characteristics that are essential for functioning a financial centre: (1) a stable legal and regulatory environment that allows to entry, ownership, and operation (2) an adequate financial structure. Constant flows of exchange of knowledge within financial centres and human capital and concentration of expertise are directed towards a global value chain organisation of the world's largest financial organisation.

In Figure 6, basic functions of financial system offered with a different national and international specification is shown. Different starting points of a financial centre with competition analysis with organisational value chains within the core business of financial intermediaries are also illustrated. Moreover, the nature of interaction between financial intermediaries and firms are presented in the diagram (Kruse, 2003, p.9-12).

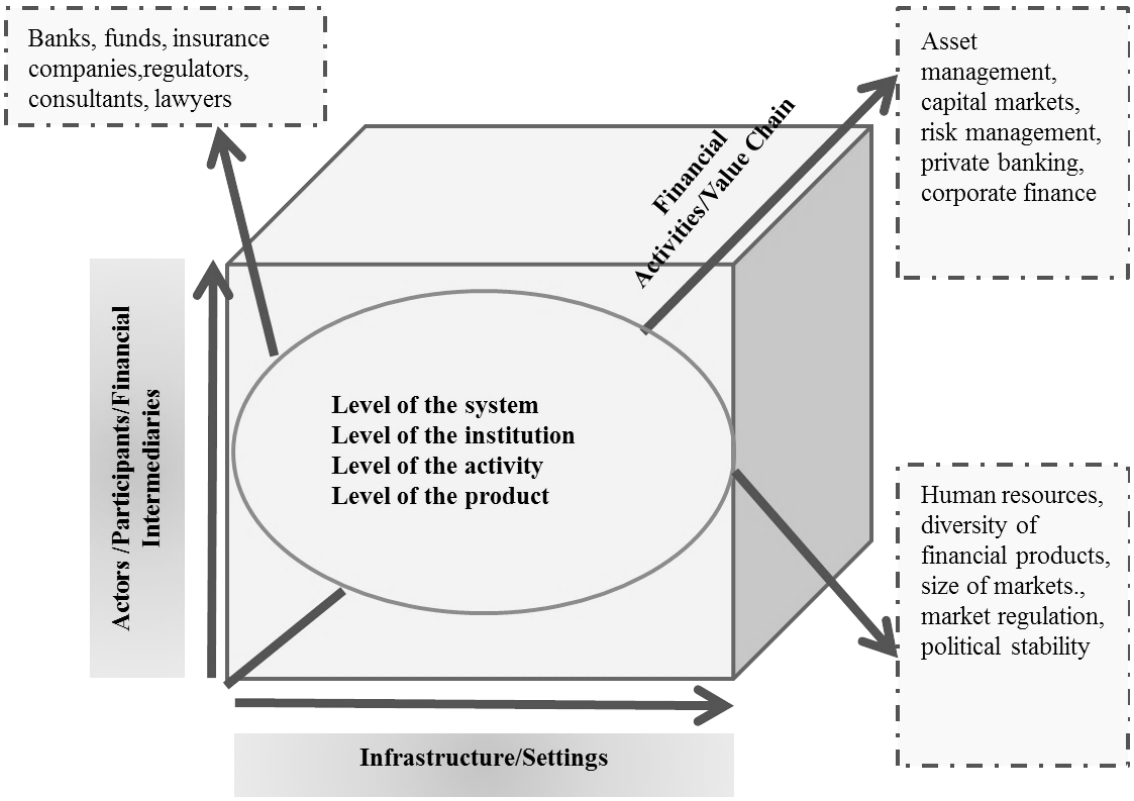

Figure 6: Financial Centre Cube

Source : Kruse, C. (2003). When Form Follows Function-Financial Centres as Starting Points for Researching the Interrelationship Between Financial Intermediaries and Management Firms. ERSA Conference. Jyvaskyla, 1-14, p. 9.

Financial centres provide financial services both local and non-residents clients. Financial services or activities offered by financial centres are several of which foreign exchange trading is very important, comprising spot, futures, options, swaps, and forward transactions. They also participate in international equity and debt securities as well as derivative transactions. In a financial centre, large numbers of traditional banks are located (Park Y.S., 2011, p.2). Eiteman, Stonehill, and Moffett categorise the transactions in an international financial centre and this categorisation shown in Figure 7. Eiteman, Stonehill, and Moffett state that an IFC exists when domestic funds supplied to foreign users or when foreign funds are supplied to domestic users (B and C in Figure 7). In a strong IFC, businesses are developed in order to supply foreign funds to foreign users (D in Figure 7). London, New York and Singapore are the world's most important IFCs that perform all four functions depicted in Figure 7 whereas regional centres perform two or three of four types of transactions. Offshore centres only perform offshore market functions (Eiteman, Stonehill and Moffett, 1992, p.281).

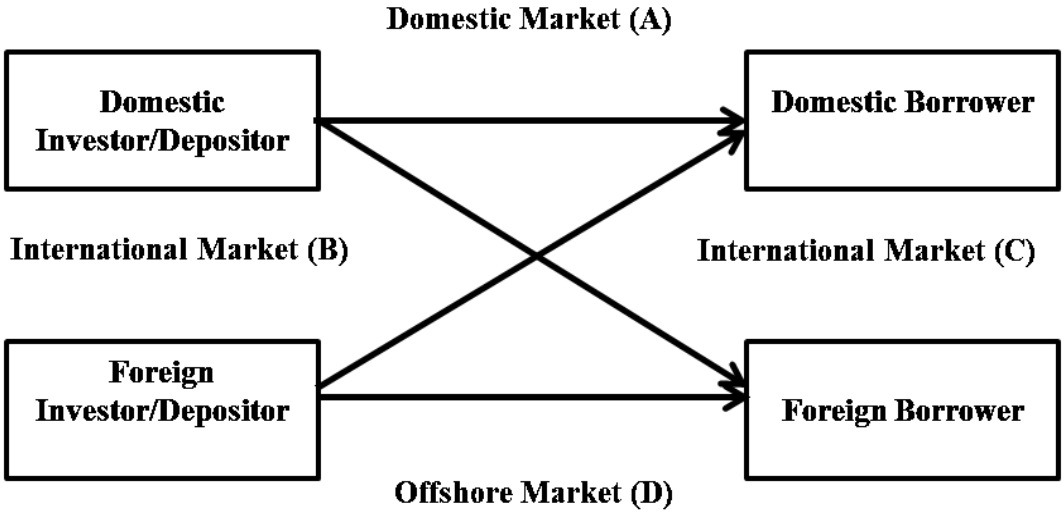

Figure 7: Transactions in International Financial Centre

Source: Eiteman, D.K. A.I. Stonehill and M.H. Moffett.(1992). Multinational Business Finance. USA: Addison-Wesley Publishing.p.281.

4.2 GEOGRAPHIC DISTRIBUTION OF GLOBAL FINANCIAL CENTRES

Financial centres in five continents have some unique features. Firstly, the ranking of these centres keep stable especially those in America. New York, Tokyo, and London are at the top of the ranking. Secondly, financial centres in Europe and America have advantages in financial sector and financial industry services. On the other hand, financial centres in Asia-Pacific region have rising potential in growth and development. Thirdly, Tokyo, Hong Kong, and Singapore in Asia-Pacific region show more stable development.

4.2.1 Financial Centres in America

In 1810, New York replaced Philadelphia to become the largest financial and commercial centre in America. During and after the World War I, New York emerged rapidly as an international financial centre. New York is home to many major commercial banks, savings banks, investment banks, stock exchanges and insurance companies, but also the location of many foreign banks' branches. Moreover, NYSE (New York Stock Exchange) is the largest stock exchange in the world. The second top financial centre in America is Chicago, which is one of the global international centres. The Chicago Stock Exchange is the second largest financial market after the NYSE. CME is the largest trading market of fragile goods and a prominent financial exchange in the world. Chicago Board of Trade (CBOT) and the CBT are other important financial markets. Many big banks and financial institutions are headquartered or have branches in Chicago. San Francisco gradually developed into a financial centre on the West Coast during in the middle of 19th century (Xinhua Dow Jones, 2012, p.16) Toronto is another financial services cluster behind the United States. The Toronto Stock Exchange is located in Toronto (Zumbach, 2010, p.22-23). In March 2014, all centres in America improved their ranking in comparison GFCI 14 in September 2013 (Long Finance, 2014, p.21).

4.2.2 Financial Centres in Europe and Middle East

The top three financial centres in Europe are London, Frankfurt, and Zurich. Although the European financial centres are still in turmoil, Europe rating has improved

in GFCI 15 March 2014 but London experienced the largest decline among centres in top 50 (Long Finance, 2014, p.14). London is an old international financial centre and takes the first place in Europe. London has prestige in global markets in trading of equities, bonds, foreign exchange, and commodities and financial derivatives. The London Stock Exchange is one of the world's most important securities exchanges. London is also the centre of banking and insurance. Besides, in London there are many commodity exchanges dealing in gold, silver, nonferrous metals, wool, rubber, coffee, cocoa, cotton, oil, wood, sugar, tea, antiques, and various other precious and commodities. The German financial centre Frankfurt is ranked second in Europe and the symbol of the German financial industry The Frankfurt Stock Exchange is one of the world's most famous stock exchanges. The European Central Bank is also located in Frankfurt. The Swiss financial centre Zurich is ranked third in Europe. The SIX Swiss Exchange is the only stock exchange in the world to feature a fully automated trading, clearing, and settlement system. Switzerland has few limits on capital outflow allow the free flow of capital. Asset management services and private banking are well developed. On the other hand, Swiss franc is one of the most stable currencies in the world. The gold market in Zurich fell behind London in the 1960s to be the world's second largest gold market. Paris is the French financial centre, is ranked fourth in Europe. Earliest banks and financial institutions were dated back to before the 19th century. The Dutch financial centre of Amsterdam used to be an important international financial centre when in the 17th century, but lost importance later. The Amsterdam Stock Exchange as a member of Euronext is the oldest in the world and largest in Europe. Moreover, due to financial crisis, Greece, Spain and Cyprus and Italy struggled for rescue so investors' confidences were deteriorating and the condition led to the swings in the financial markets. Qatar is the leading Middle Eastern Centre; Dubai, and Riyadh follow up it (Xinhua-Dow Jones, 2012, p.16-19). Dubai, Qatar and Bahrain want to establish Islamic financial centres and Dubai is the first exchange for foreign currency transactions in the region. These markets target to attract money not only in Islamic world but also from other part of the world.

4.2.3 Financial Centres in Asia Pacific and Africa

This region covers emerging economies and markets that are in process of fast capital accumulation. Hong Kong, Singapore, Tokyo, Seoul, and Shenzhen are more powerful centres than Kuala Lumpur, Manila, and Jakarta (Long Finance, 2014, p.4). Tokyo is among the world's most important financial markets. Tokyo's status as an international financial centre has been confronting challenges from Shanghai, Singapore, Hong Kong. Hong Kong as a global financial centre participates in various retail and wholesale banking business including deposit taking, trade finance, corporate finance, treasury activities, the trading of precious metals, and security brokerage. Hong Kong has an active foreign exchange with 24 hours' of daily trading with other parts of the world. Additionally, Hong Kong is the only centre in the world where businesses can open and maintain a Renminbi (RMB) account. Singapore is the world's largest foreign exchange trading centre. Singapore is leading in international finance, trade finance, maritime finance, insurance, and fiscal operations and is strong in assets and wealth management in which Singapore develops its role as a regional leader in wealth management. Singapore's financial exchange, SGX, trades both stocks and derivatives and becomes increasingly international. Shanghai is another centre and has the most developed markets of various financial factors and structures in China (Xinhua-Dow Jones, 2012, p.19-21; KPMG, 2009, p.19; The City of London, 2008, p.18). Additionally, the Indian government continues to liberalise the country's financial system and Mumbai comprises its role, as international finance (The City of London, 2008, p.5). In GFCI 15, March 2014, most Asia/Pacific centres have improved their scores and shown a stable performance during last past four years. Seoul has continued long-term positive trend and Shenzhen has shown strong rise over the last year (Long Finance, 2014, p.18).

4.3 FORMATION OF INTERNATIONAL FINANCIAL CENTRES

The concept of financial centre is a multivariate subject; therefore, many researchers investigate the formation of financial centre in various aspects. In this section, we aim to explain theories and thoughts on financial centres that clarify the reasons of the formation process of the financial centres. The historical formation of

financial centres has been studied from various perspectives in previous studies on most of which emphasise the role of banking activities and the competition between financial markets that are based on banking activities and capital markets. Unfortunately, most studies on the financial centres are descriptive rather than empirical. In formation process, micro-level approaches examine the agglomeration forces that pull actors in few places. Besides macro level approaches, try to understand which countries develop financial centres of international importance and links between them.

Each international financial centre is characterized by various features: geographic location, market coverage, legal environment, information generation, subjective image, communication, and transportation infrastructure. Tschoegl discovers that the cost of labour, land and capital give little clue about the location of financial centres. Whereas international politics, political stability, domestic regulation, the development of communications and good location of cities bring about some places more favourable than others do (Tschoegl, 2000, p.9). In financial centres, the financial activities gather in specific space, which is area within an urban agglomeration. Agglomeration of financial activities and linkages can be regarded as a network. A network consists of a set of nodes that are connected by the links. Each node represents a financial centre (Park Y.C., Ito, and Wang, 2005, p.35). In financial centre, financial production process takes place in territories within market segments. Securities, commodities, and derivative markets are financial markets moreover; market segments can be accepted as industry clusters or sectors within these territories. Financial centre's spatial scope is determined by firms and markets located in it. The stock exchange and public listed companies aggregating within the territory form the hinterland of exchange, that represent centre's action place. On the other hand, the financial centres have relation with the worldwide financial institution or spatial organisation of financial institution and markets (Karreman, 2010, p.80-81).

4.3.1 Place Theories and Regional Urban Studies

Place theories use spatial analysis and factors such as geographical clustering and hinterland proximity. In principle, these early theories could be applied to business district within the metropolitan area. Moreover, relational urban and relational

geography studies define linkages between cities and their urban economies. The geography of space explains the formation of financial centres, their size, distribution, and relationship to economic hinterlands that service. Relational urban studies use the ranking tool as comparison to evaluate an IFC's overall position within the global ranking.

In Central Place Theory, Christæller (1966) develops a system to understand the complementary and interdependent cities. He explains urban hierarchies as a function of their inequalities then employs spatial analysis and factors for instance geographic clustering and hinterland to study the formation and development of IFCs. The urban hierarchies result differing efficiencies of goods supplied to the market relative to distance. The supply of basic goods and services are scattered and found in many spaces. The goods have different thresholds values. The specialisation of some goods and services define a central place. The scope of goods relate to the size of the central place. The scope is determined by size and importance of the location; spatial distribution of population, type, quantity and price of goods offered. The higher the value good, the maximum distance customers are ready to travel to acquire the good. The economic distance is determined by the cost of the freight, insurance, and storage. Trading in capital markets and banking activities are goods with high threshold values then the customers want to travel long distances. Consequently, the geographically accessible IFC is formed against economic hinterland .The inverse relation between the threshold of good and tolerance for purchasing them create spatial configuration of urban centres. A size of an urban centre increases, when the volume of high order goods and services produced by the centre increases, but theory ignores economic flows which exist between cities or between regions that are served by the cities (Citation from Jarvis, 2009, p.4-5; Luo, 2012, p.2-3; Wong, 2012, p.77-78; Poon, Eldredge and Yeung, 2004, p.415).

New Economic Geography (NEG), which copes with dynamic developments of agglomeration, is initiated by Krugman. The most striking feature of the geography of economic activity is concentration. This phenomenon is explained by Krugman through the effect of increasing returns. Financial sector's spatial organisation

determined by various dimensions of proximity, for instance cultural, organisational, institutional, or geographic proximity. The unequal international financial centres can be explained by locational attributes and inhomogeneous landscape. On the other hand, unequal sizes can be explained by scale effects and specialisation. In NEG theory, financial centres are considered as the net sum of centripetal and centrifugal forces (Engelen and Grote, 2009, p.691-693).

Unfortunately, New Economic Geography theory is unsuitable for applying them without modification of the financial industry. Agglomerations forces are explained by two linkages, centripetal and centrifugal forces. Economies of low mobility financial activities can be classified as centripetal activities that are dependent on proximity and personal contact. Centripetal forces have assured the dominance of traditional financial centres (Walter, 1993, p.80-81). While economies of high mobility activities can be classified as centrifugal activities. Modern information and IT technologies make it easy to fulfil such activities in remote locations in order to take lower labour and real estate costs. Transaction processing and marketing of financial transactions can be separated in centrifugal activities. Ireland in which low cost of skilled and motivated labour and low rents are is a good example of centrifugal activities. Nevertheless, nowadays, the unbundling financial activities and services increase the centrifugal forces and activities (Walter, 1993, p.80-81). For the centripetal forces, external economies of scale are used, such as a liquid labour market, linkages, and pure technological spillovers. There are immobile factors, increasing rents and negative technological effects for the centrifugal forces (Grote, 2007, p.4). The technology is the primary factor that affects the balance of the centrifugal and centripetal forces on the underlying economies of financial centres. Competition among financial centres is for market-share in centripetal value-added financial activities. Moreover, a battle is to retain as much as centrifugal value-added financial activities (Walter, 1998, p.15-20; Sassa, 2012, p.32-34).The centrifugal and centripetal factors are summarised under Table 9.

Table 9: Centripetal and Centrifugal Factors

Centripetal Factors (centralising)	• Economies of scale • Economies of specialization • Reduced transportation costs • Market size effects • Labour markets
Centrifugal Factors (decentralising)	• High mobility activities • Decreased real estate costs • Decreased labour cost

Engelen and Grote also use two theoretical approaches in economic geography, which are NEG and Comparative Political Economy. NEG predicts first increasing concentration followed by a dispersion of the financial factors over space, a "U-s shaped" pattern of spatial concentration followed by the dispersal due to diminishing of transaction and transportation costs. Geographers has criticised NEG for lack of real-world foundation and lack of originality. The explanations offered by NEG are both general and uncategorized to account for distinct patterns of relocation. For this reason, Engelen and Grote use Comparative Political Economy approach. In Comparative Political Economy, the institutions determine the firm behaviour. In such a framework, the explanatory leverage for behavioural change is in changes in the institutional environment. The decline of second tier IFCs in Europe is explained by this approach owing to limited size and liquidity. The Netherlands with deep, liquid and sophisticated financial markets and internationally oriented banks allow for a stronger interconnectedness with London and Anglo American capital markets than Frankfurt (Engelen and Grote, 2009, p.690-691).

Geography of finance emphasises on service industries as well as information and communication industries. It engages with the location of transactions instead of economic production. All financial centres connect to financial information centres though information centres depend on economic and information hinterlands. Information hinterland theory is applied to explain the relation between economy and development of a financial centre. Information externalities, asymmetric information, and path dependence shape the information hinterland. Porteous (1995) tries to find out why financial activities tend to agglomerate in one particular location rather than another and introduced the framework of path dependence. He emphasises the role of

information flow, which influences the location of financial activities. Porteous also concentrates on three information concepts for the development of financial centres that are information hinterland, information externalities, and asymmetric information (Citation from Wang, Zhao and Wang, 2007, p.102-104; Zhao, Zhang and Wang. 2004, p.5). The financial production adds the value to existing information. Financial centres in general and banking systems in particular rely entirely on information flows and offer IT innovation. A financial centre is an information collector and user that lives on the existence of information and that functions to add high value to that information. The financial sector can be regarded as a value-added' information service industry (Zhao, Smith, and Sit, 2003, p.4).

A city dedicates itself to produce a certain type of information over time. Within information hinterland, valuable information flows first with least cost. In asymmetric information, there are problems in interpreting value, background, or culture of information. All financial centres must be connected to financial information centres that depend on information hinterlands (economic hinterland). Information hinterland refers to the existence of an information rich area, where economic and business activities, for example investment, trade, and corporate actions, occur. Financial information centres that do not involve in production are the centre for services and transaction. On the other hand, information hinterland and information centre explain the relationship between the development of financial centre and economy. Information hinterland theory explains the process of rise and fall of financial centres at the level of regional, national, and global. Firms are located closer in order to find and interpret non-standardized information for making profit (Jarvis, 2009, p.9-10; Zhao, Zhang and Wang, 2004, p.580; p.5-6). Karreman and Knaap depict that financial activity and financial service firms tend to concentrate on environments with high information symmetries (Karreman and Knaap, 2007, p.5).

Information externalities that enlarge in the presence of a collection of existing financial enterprises indicate the spill over effect of information. If the financial firm processes the information more efficiently, it will gain from this than other market participants. The nature of financial production accrues significant value to existing

information, so the information spillover effects from the presence of agglomerated financial enterprises are often significant. Three types of information are important that are trading information (flow of goods), financial information (the flow of capital) and regulatory information (policy information). Information hinterland is measured by information flow and is defined as a region for which a particular core city acts as a regional centre provides the best access point for profitable use of valuable information. The information asymmetry pushes the financial firms closer to information sources in order to find and translate non-standardized information, which can be used by financial firms to make profit (Jarvis, 2009, p.9-10; Zhao, Zhang and Wang, 2004, p.580; p.5-6). In asymmetric information context, there are two kinds of information: standardized and non-standardized information. Standardized data is hard data that is transmitted and localized by common media. Non-standardized data is soft data that are not transmitted and localised by common media such as rumours on corporate mergers and acquisitions. In order to assess the value of non-standardized information, background or culture of such information must be understood (Zhao, Smith, and Sit, 2003, p.5). Laulajainen also emphasises the importance of geography in finance and financial centres. The daily routine of international financial activities forces the 24- hour relay. Information constraints, which appear because of people having limited living area and limited ability to digest information put down the neo-classical efficient market hypothesis useless. A financial centre is an information collector. However, the culture dimension should not be neglected (Laulajainen, 2003, p.2).

However, the position holds when only general and straightforward information, like market price, is needed. Indeed in finance asymmetric information is universal and complex information often costly to secure and elaborate, is needed in order to reduce the cost of moral hazard and adverse selection. Each firm in the financial sector must save at least as good information as competitors, and even short delays can cause big losses. Then, financial firms can improve their competitiveness when locating as close as possible, where information is produced, and processed (Marano, 2000, p.14).

On the other hand, Arthur (1994) who develops path dependence theory explains current equilibrium, such as a firm's organisation or industry location, as a function of early random shock in the decision process that is directed to equilibrium .The equilibrium is conquered when a city has achieved a definite level of financial activity. In this way, a financial centre can maintain this initial advantage over other cities for an extensive time. In this model, only new firms come in and are not allowed to move if their location is chosen. London can be a good example although British economy is in decline; London remains a leading financial centre (Citation from Wang, Zhao, and Wang, 2007, p.104).

Wilson and Pop define industrial district or cluster as agglomeration of industries, in which common products, technologies, markets dominate. Michael Porter (1998) conveys the notion of geographical concentrations and clusters to economics and business literature. He describes the cluster as geographic concentration of the companies and institutions linked together in particular location. A cluster is a geographically group of interconnected companies and associated institution in particular area linked by harmonies. Porter's (1998) competitive advantage approach mainly concentrates on inter-firm competition. Competition imposes pressure on firms and stimulates them to upgrade their activities and innovate in order to compete with their peers (Citation from Sim *et al.*, 2003, p.116). Economic success depends on the degree of rivalry. The sources of competitive advantage are within the industry. The industry is shaped by five competitive forces. The higher the competition is the better the firm's position. Cluster represents an attractive alternative to increase the productivity and innovative capacity of the firm's activities. According to Porter, clustering has a higher importance so it increases product innovation, stimulating new business, and accelerating productivity. The factors are determined to explain competitive advantage of a cluster. Factor conditions gathered in diamond framework are demand conditions, firm strategy and structure, related and supporting industry. Factor conditions compromise human, capital, natural resources and infrastructure. Specialisation of these factors and existence of quality improve productivity. Related and supporting industries are smoothing the transfer of knowledge between firms and this has a positive effect on productivity. Demand conditions are symbolised by local

presence of advanced buyers who encourage innovation. Lastly, firm strategy and competition enforce the firms to produce innovation and improve their productivity. Government and chance events influence on the environment for competitive advantage (Citation from Mollan and Michie, 2012, p.3; Zumbach, 2010, p.2-3; Larreina, 2008, p. 10; Sassa, 2012, p.28-32).

Porter's diamond framework (1990) uses four components, which are factor endowments, demand conditions, related and supporting industries, and firm competitive strategy, organisational structure and rivalry. These components form a shape of diamond. Factor endowments explain all factors used in production process such as human and physical capital. Important factors for cluster cannot be copied or imported without outstanding efforts. Demand conditions are determined by the market. Related and supporting industries are all industries and firms, which decrease costs and increase efficiency. The industries and institutions located in cluster have competitive advantage against other industries and institutions. Firm competitive strategy, organisational structure and rivalry determine the strategy and structure of firms and institutions according to environment (Citation from An, 2010, p.14; Zumbach, 2010, p.5-8).

Doeringer and Terkla describes the reason of clustering as follows; accessing to local factors market, relation with other firm through mutual production channels, and benefits of accessing non-benefit institutions, such as government, regulatory institutions (Citation from Mollan and Michie, 2012, p.3). IFCs first develop to assist industries and increasing trade in their local hinterlands. Over time, their hinterland gets bigger and a regional dimension results in a broadening of financial activities. This situation attracts lenders and borrowers from foreign markets to move toward these centres, afterwards they are consolidation their international status (Kindleberger, 1973, Reed, H. 1980). For instance, Toronto develops as an international financial centre the need for financing its hinterland's mineral resources.

4.3.2 World Cities Theories

Many researchers deal with the world city system and hierarchy in which the distribution of IFC is distinguished between world cities and global cities. By

considering any place or IFC, because of the world city and networks, flows and relations can be better understood in a global system. A global network means that it is a centre for global financial transactions and therefore attracts many of the key global financial institutions and firms. This network reinforces flows of capital, knowledge, trade, people and political influence.

Hall (1966) brings out the concept of Global City Approach and explains the economic function of leading cities. His research covers London, Paris, Moscow, New York, and Tokyo. He studies the trading, financial, education, culture and communication performance of those cities (Citation from Kayral and Karan, 2012, p.219). Friedmann brings forward that the World Cities organizes new international division of labour. These cities accumulate capital and gain specific economic and social structures, and are command economies and markets of the world. In addition to these cities are in the middle of economic activities in the world. There is a concentration on corporate headquarters. He measures the attributes of the world cities, and ranked them, and but did not give the interrelation between cities. He ranks New York, Tokyo, and London as global financial centres, whereas Miami, Los Angeles, Frankfurt, Amsterdam, and Singapore as potential centre in the future (Friedmann, 1986, p.69-83).

Poon explains that a global landscape is dominated number of cities that are differentiated by their higher order functions of control and controlling global economic flows. These cities are responsible for creating value in the global economic chain (Poon, 2003, p.136-137). On the other hand, in Sassen's work (1991), world city is named as more than financial centres, global cities. Sassen (1991) uses producer services such as advertising, accountancy and legal services to rank global cities. Changes in the international finance and the banking are vital in the emergence of her triad. World cities in which agglomeration of financial activities clusters around fewer mega financial centres or global cities are global service production centres. The social and economic activities of host country are first clustered in its global cities and then are exported to global cities in other parts of the world. Sassen (1991) compares the city and according to her findings, 23 cities controlled 83% of world equities. Six or seven

cities head the league. The most important centres are London and New York, Tokyo, Frankfurt, and Hong Kong follow those cities. Those cities are identified as key location for finance and specialist service firms (Citation from Jarvis, 2009, p.5-6; Sim *et al.*, 2003, p.116).

On the other hand, the network model explains the relationship between domestic financial centres with international centres including niche and offshore financial centres. Financial resources are allocated in various regional financial centres, before financial resources are intermediated through single domestic financial centre that can interact with a regional and international centre. Hence, a network wheel between local, domestic and regional and international centres are formed. Big fundraisings, such as syndicated loans or securities offerings, are beyond the capacity of any single intermediary that results in the use of networked structures (Arner, 2009, p.194-195). Parr (1978) explains the role of decentralisation and fragmentation in financial globalisation that causes the increase in tailor-made relationships between similarly size regional financial centres. Regional financial centres become important and they deepen financial intermediation (Citation from Jarvis, 2009, p.7).

According to Reed's international financial model, financial centre emerges so it balances the saving and investment of individual entrepreneurs through time and transfers financial capital from savers to investors. The capital formation stimulates domestic economic activities, which enforce foreign trade activity, which then creates the need for developing international banking infrastructure. The importance of international financial linkages in IFC's development tries to be identified (Reed, H., 1977, p.179).

4.3.3 Scale Economies Theory and Other Studies on Financial and Economic Perspective

Scale Economies Theory explains the formation of IFCs due to financial activities clustering. Because of economies of scale clustered financial activities reduces transaction costs and creates information symmetries. Scale Economies emphasise the role of financial market's size, distribution, capacity, and diversity of their products. IFC's city level features such as capital market development, banking institutions are

the subject of this field of the study. The primary focus of this dissertation lies in the field of scale economies and economic and financial aspect of formation and contribution of IFCs on the financial system.

Due to Marshallian external (agglomeration) economies, many firms of the same industry locate together and that creates better production conditions, reducing costs. Marshall emphasises three main sources of external economies that are the availability of better workforce (pooling labour market) and of joint facilities and intermediate goods and services, and the faster and more efficient technology transfer and learning (technological spillovers) (Citation from Marano, 2000, p.3).

The internal economies of scale means firms benefit from concentrating their activities in one place. The internal economies of scale theory emphasises that when the financial institutions concentrate the financial services in a large establishment in a city than several small establishment in various cities within same area, the cost of production reduces and hereafter profits increases. Whereas external economies of scale enable the financial firms to locate their activities at the same places as other banks do. Financial markets are complex networks in which transaction costs and external economies of scale are truly important so the external economies of scale play a major role in shaping of financial centres. Financial institutions gain from higher liquidity by acting in organized markets and benefit from close business contacts with each other. Moreover, professional services such as legal and management consultancy, accounting and software and programming companies grow around such financial institutions (Wong, 2012, p.81-82). An IFC's city level of economic aspects for example international banking institution, capital market development is the subject of economies of scale. Scale economies with functional specialization explain the contracting size, distribution, and capacities of IFCs (Luo, 2012, p.3-4). Whereas unequal sizes of IFCs can be explained by scale effects and specialisation. For example, London has comparative advantage in international bonds and foreign exchange market over smaller IFCs.

Grilli (1990) highlights thick market externalities based on agglomeration economies of location and information, which stimulate a comparative advantage over

other financial centres. The important externality is the informational mass of international financial centres such as New York. Centre's competitive advantage is based on asymmetry of information and transaction cost. The regulation is one of the transaction costs. The development of Eurodollar market in London leans on regulatory asymmetry. Geographical territory contains different financial territories, which cover stock, commodities, foreign exchange, and derivative markets. If there is a regulatory asymmetry across financial centre, there is also a regulatory asymmetry in across different classes of investors. If the asymmetry of regulation is overcome, the dominance of particular financial centre is intimidated. Consequently, searching of new asymmetries is difficult if the centre is a saturated market, so new products and market niches can maintain advantageous asymmetries in a deregulated market (Citation from Budd, 1995, p.353-354).

Rosenthal and Strange (2001) concentrate on the microeconomic foundations of agglomerations and three elements that are knowledge spillovers, labour market pooling, and input sharing. Financial centre creates an environment, in which economic agents can communicate easily in perspective of knowledge spillovers, labours move within an urban area in perspective of labour market pooling, public infrastructure is provided, and goods are transported in perspective of input sharing (Citation from Wong, 2012, p.81-82). Kuah (2003) uses Porter approach and explains London's success as financial centre in terms of the economies of scope and scale. There is an economic benefit for financial institutions locating in the centre. The existence of supporting industries in the centre can add to value to firm's value chain. The strong links in different industries, which arise from agglomerations of firm, increase economies of scale. Strong concentration of financial services causes a strong demand for competent labour. According to Kuah's findings, financial firms located in London grow faster than other firms located in different British provinces do (Kuah, 2003, p.13-14; Citation from Larreina, 2008, p.15).

According to Parr (1978), regional integration can be supported by regional financial centres. Regional centres gain importance so they expand financial intermediation by connecting regional neighbourhood into a global financial value chain

(Citation from Jarvis, 2009, p.8). Poon, Eldredge, and Yeung highlight that tailor-made relationships between equal-sized regional financial centres emerge due to decentralisation in financial globalisation. Regional financial centres appreciate their own knowledge economies, supplying niche specialisation for needs of the local markets and broker relationship between regional hinterlands and the global three (Poon, Eldredge and Yeung, 2004).

Walter initiates the acronym of CAP-Client, Arena, and Product to describe the space in which a financial institution is occupied. The competitive opportunity set that the banks and other financial firms encounter is explained under this model. There are three dimensions in this model. The type of client, to whom the institutions are served, where in physical space the client are or comes from, and what product the institution delivers to these clients. Clients populate the centre and may be government, financial corporations, and retail customers. In the major centres, clients are mainly firms and governments. Arena is the second dimension in which the centre serves. Arena is not only geographic area but also covers the issues of regulatory and monetary sovereignty. The domestic centre is distinguished from international centre based on where the clients come from. If the clients come from local country, the centre is domestic even if some financial institutions, such as some of the banks, are foreign in the centre. If the customers come from outside the country, the centre is international. Third dimension is product. Products are services that the banks and financial markets provide (Walter, 1993, p.32-33). Tschoegl adds fourth dimension, which is value-added chain, to Walter's framework. Tschoegl's approach shown in Figure 8 indicates four dimensions, which are clients, geographical reach, products, and value-added chains, for classification of financial centres. Clients populate the centre for example governments, financial institutions non-financial institutions, retail customers, number of listed companies at the stock markets. Origins of clients distinguish domestic centres and regional centres from international centre; therefore, second dimension of the Tschoegl's model is geographical reach. Third dimension is the product. The services offered by financial institutions explain this dimension, which covers financial instruments such as securities, insurance, asset management, and financial activities in foreign exchange. Respective financial system, bank, or market driven, and regulatory

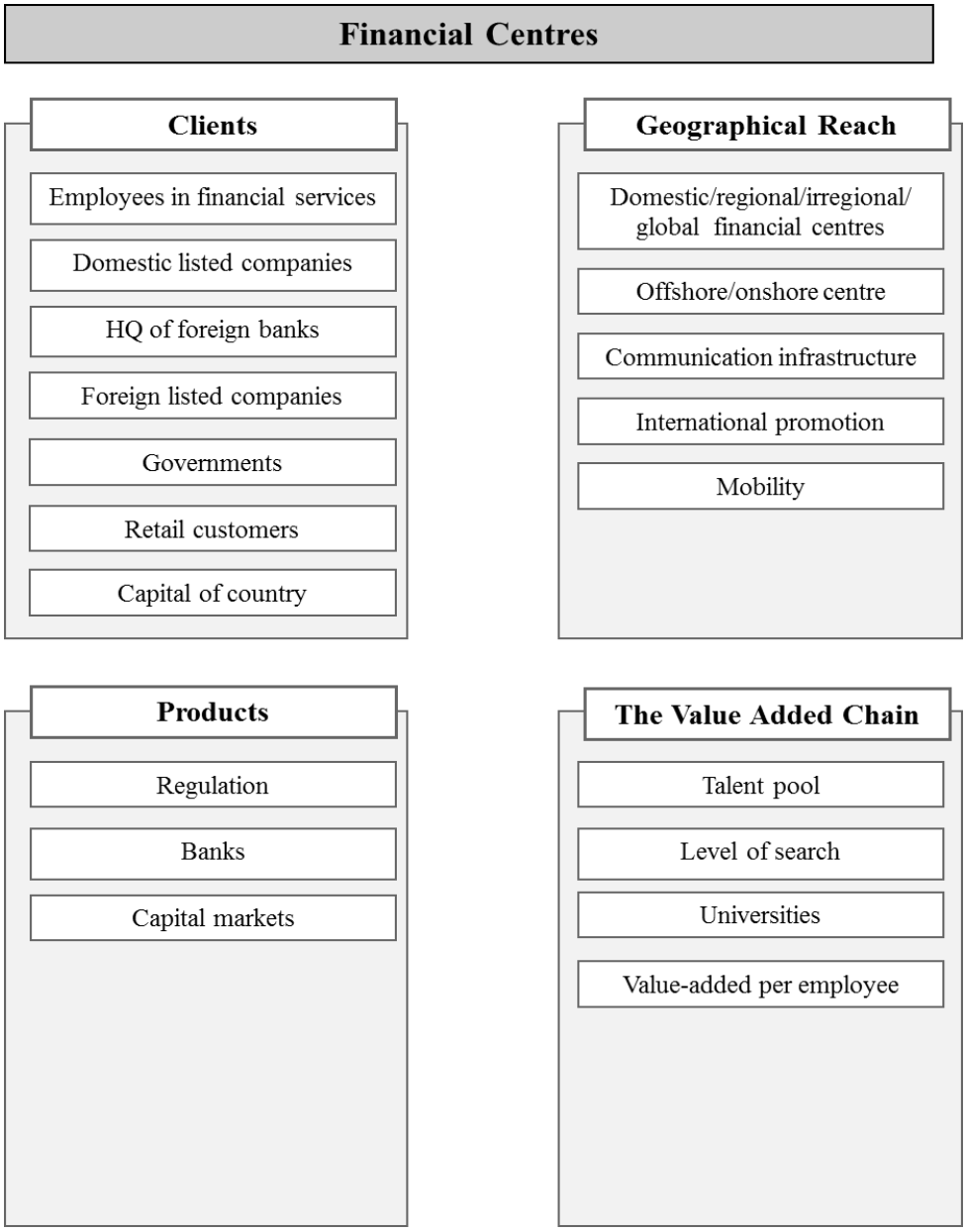

Figure 8: Dimensions of Financial Centres

Source: Tschoegl, A. E. (2000). International Banking Centres, Geography, and Foreign Banks. Financial Markets, Institutions & Instruments.

regime determines the scale and scope of the products. The fourth dimension is value-added chain, which covers value added per employee, talent pool number of universities. The financial centres are complex marketplaces in which clients or buyers choose among service providers. A value added per employee is a crucial ratio of financial centre's efficiency (Tschoegl, 2000, p.3-5; Walter, 1993, p.32-33; Loechel, 2010, p.5). According to Kindleberger, the formation of regional centres is the result of diseconomies. Because of diseconomy, the cost of information gives local institutions

an advantage in dealing with non-multinational firms located in the region. Other centres may discourage from participating on large scale in local markets due to elaborate business culture and unfamiliarity with local personalities (Kindleberger, 1973; Reed, H., 1980, p.22).

Kindleberger's theory outlines six factors, which are necessary to the formation of the financial centre. The first factor is sovereign finance, in which the war activities and personal habits of sovereign are financed. The second factor is commercial finance, in which the trade and commercial activities are financed. The third factor is government finance in which government is financed through issuance of bonds or other activities. The fourth factor is transportation finance. Transportation finance increases trade and give the opportunities the financial firms to lend to highly profitable companies. The fifth factor is industrial finance. The cash management activities of industrial conglomerates are fulfilled and the same conglomerates are financed by the financial firms. The financial firms are co-located with industrial firms. The final factor is personal finance in which financial activities are proportional to population. Financial firms are located around population and personal savings and loans are managed by these financial firms (Kindleberger, 1973, p.87-94; Park J.H., 2012, p.7). On the other hand, Kindleberger describes ten factors in the success of European financial capitals. These are the European currency, administrative capital, central bank, economies of scale, central location, transportation systems, culture, policy, headquarters of multinational corporations and tradition. In addition to the factors explained in Kindleberger's theory, financial competition, government intervention, and financial products innovation and financial development play roles in the formation of the financial centre (Park J.H., 2012, p.7; Kindleberger, 1973, p.87-94).

Furthermore, the classic demand and supply theory is mentioned by Adam Smith (1776) in his famous work, The Wealth of Nations. Financial services play an important role in real economic activities and functions. Demand for financial services state how much financial services are requested, on the other hand, supply for financial services state how much financial services are offered by a significant city or place. The relation between demand and supply stretch outs beneath the allocation of resources so

a significant place or city is chosen either by government policy or invisible hands and there is a fierce competition with cities among countries. In market economy, demand and supply theory allocates the resources most effective way. A growing demand of financial services stimulates the foreign institutions and attracts a development and growth financial market and intermediaries (Citation from Wong, 2012, p.69-70).

Ter Hart and Piersma (1990) focus on the determinants for spatial proximity in the financial sector considering the requirements of financial transactions. These determinants are intensity of face-to-face-contacts, intensity of contact, scale of the transaction and acquaintance with the other party. They use a list of banking transactions ranked by their sensitivity to spatial proximity. The more complex and the closer to the customer the transactions are, more spatial proximity is needed, and the less concentrated financial activities will be. Porteous (1999) provides a list of external economies that are labour market externalities, intermediate services, technological spillovers, informational spillovers, socio institutional and cultural factors. Porteous calls inter-regional attachments that are an access point for financial services for other cities for the pre-eminence of IFC (Citation from Grote, 2000, p.5).

4.3.4 Endowed Capacities Theory

Endowed Capacities Theory focuses on IFC's development on in host country's macroeconomic and political framework. According to this literature, physical, institutional, public policy and knowledge environments support the location decisions and clustering of financial services firms. The international public policy and government support improve the institutional and infrastructural environment that is crucial for the development of IFCs (Jarvis, 2009, p. 8).

Sagaram and Wickramanayake depict factors, which are preeminent for financial centres in Australia, Hong Kong, Japan, and Singapore by taking financial and economic perspective. Five key factors that are a favourable regulatory regime, competitive taxation structure, quality of living environment for attracting and retaining workforce, critical market depth, and sufficient turnover volume and sufficient level of economic activity, influence the location decision of financial services firms (Sagaram and Wickramanayake, 2005, p.21-51; Jarvis, 2009, p.9).

4.3.5 Elimination of Space

Many scholars believe that the economic role of space has become insignificant. In the age of electronic communications and electronic money, the location of enterprises is not important. Therefore, more recent question is the validity of spatially bounded clustering due to advances in communication technologies and the development of dependable real-time telecommunication network. Harvy (1990), Lash and Urry (1994) represent this literature of obliteration or elimination of space (Citation from Jarvis, 2009, p.9-10). New information and IT technology contributes information easily. The companies have no necessity to cluster for sharing information. Because of globalisation and the complexity of financial systems, the relationship between markets, intermediaries, and financial centres is becoming slack. In United States a new private markets are created by intermediaries and competitors on the existing markets such as Cantor Exchange for CBOT products (Ansidei, 2000, p.14 -16). Esparza and Krmenec (1996) explore that the distance is an unimportant factor so financial transactions can be easily transmitted through telecommunication. Sohn supports to some extent the role of information technology in urban decentralisation. Decentralisation tendency is obvious in era of globalisation in which electronic trading system urges trading in various stock exchanges (Citation from Poon, Eldredge and Yeung, 2004, p.415).

O'Brien (1992) explores that deregulation and technologic development in telecommunication brought about "the end of geography" in banking and finance. Information becomes cheap, timely, and available globally and in such conditions firm may not be affected by location choices anymore, which may rather be determined by cost factors, or living standards. Banks and other financial institutions no longer have to be in financial centre (Citation from Tschoegl, 2000, p.1). Tschoegl emphasises that the revolution in communication techniques minimizes the economic significance of distance or space but not likewise reduces the importance of place (Tschoegl, 2000; Furstenberg, 2007, p.23). Wang, Zhao, and Wang emphasise the notion of knowledge economies and the role of soft institutional structure and social network that intermediates knowledge transfer and information flows. This creates an information transparency that is necessary for efficient operation of financial markets in

combination with the formal and regulatory structure (Wang, Zhao, and Wang, 2007, p.114).

According to the study of Blancard and Tadjeddine, technology changes the financial geography. They summarizes the three parts of transformation of financial activities that are the transfer of certain activities to peripheral areas, the delocalisation of certain establishments and the spreading of high value-added jobs. The employees working in finance sector could work anywhere in the world because of electronic exchanges. Certain financial activities gather in a particular area because of low transaction costs and better infrastructure. The new information and communication technology contribute to the circulation of information. Public information reaches with low cost but financial market participants need to cluster to share private information (Blancard and Tadjeddine, 2010; An, 2010, p.15-16).

4.4 TAXONOMY OF FINANCIAL CENTRES

The taxonomy and hierarchical structure of financial centres is an important aspect of financial centres. The distinctive researchers classify the financial centres by using different classification method in their studies. Before given researchers 'classifications through historical time span in Table 10, we want to give a basic and common classification of financial centres. In a broader view, there are five main forms of financial centres can be identified: Global or international, regional, niche, domestic and offshore. The first categorisation is global or international financial centres; they serve the customers from all over the world by providing full range of international financial service. Today it is generally came to an agreement that London (At the time, London is the leading centre for a region (Europe) and a national centre), New York (New York is also major domestic national centre) and Singapore are exactly global centres. They offer a complete range of the markets, products, and services along with elaborated payment and settlement system. The second categorisation is regional centres; they serve their regional rather than their national economies i.e. Shanghai and Dubai. The third categorisation is niche centres that are worldwide leader in certain field of financial activities such as Chicago (exchange traded commodities and derivatives), Bermuda (insurance) and Zurich (asset management). The fourth

categorisation is national financial centres; although the centre provides wide range of international financial services like Paris, Frankfurt, Tokyo, and Sydney. They serve the national economies rather than their regions or the world. Last categorisation is offshore financial centres; they are tax heaven for wealth management rather than providing the full array of international financial services. The offshore and traditional financial centres are the subset of functional centre that generates both income and employment for the host country. According to a different categorisation, in booking centre the financial activities of the firms are very limited, usually covers non-financial by-products. The main activity is usually book keeping. The examples of this classification are Bahamas, Cayman Islands, Seychelles, and Liechtenstein. Alternatively, offshore financial centre offers flexible activities to foreign financial firms through fiscal and tax incentives, soft regulation, and control. The host government's main purpose is to attract foreign institution to its centre. These centres serve foreigners and financial instruments used in the centre are usually denominated in foreign currency. The wealth management and global tax management services are provided rather than full range of financial services. Traditional centres, such as London and New York, are creditors to foreign borrower. Financial activities are mature stage in these centres. Level of economic development and symmetry of regulations obliged by foreign financial firms are criteria, which differentiate traditional centres from offshore centres.

Wasserman (1963) makes a distinction between international financial centres and world financial centres. IFCs assist the flow of goods, services, and securities among nations. Paris, Amsterdam, and Zurich can be named as international financial centres whereas world financial centres offer more extensive facilities than international financial centres. Only London and New York can be classified as a world financial centre. Cheng (1976) uses the regional and international regional centre terminology interchangeably. Johnson (1976) classifies the financial centres as regional and international. The international financial centre is a city in which banking, insurance and other types of financial activities are performed and are served a substantial part of the world. London and New York belongs to this categorisation. Whereas regional financial centres such as Singapore and Shanghai, are largely hosts to foreign financial institutions rather than generating customers in other parts of the region through their

Table 10: Taxonomy of Financial Centre

Researcher	Taxonomy
Wasserman (1963)	• World financial centre • International financial centre
Cheng (1976)	• Regional financial centre • Regional international financial centre • International financial centre
Johnson (1976)	• International financial centre • Regional financial centre
Kelen (1977)	• Offshore financial centre • Tax haven
Reed,H. (1977)	• World international financial centre • Regional international financial centre • International financial centre
Dufey&Giddy (1978)	• Traditional financial centre • Entrepot financial centre • Offshore banking centre
Caouette (1978)	• Deposit centre • Booking centre • Arranging centre • Currency centre
McCarthy (1979)	• Traditional financial centre • Functional offshore centre • Paper offshore centre
Bhattacharya (1982)	• Primary financial centre • Secondary financial centre • Offshore centre
Park, Y. (1982)	• Primary financial centre • Booking financial centre • Funding financial centre • Collection financial centre

Researcher	Taxonomy
Ponischek (1982)	• International financial centre • Offshore financial centre • Entrepot financial centre
Gorostiaga (1984)	• Traditional financial centre • New financial centre
Friedmann (1986)	• Global • Regional • Metropolitan
Jao (1980) (1988)	• Integrated financial centre • Segregated financial centre
Reed,H. (1989)	• Host financial centre • Regional financial centre • Supranational financial centre-second order • Supranational financial centre-first order • Supranational financial centre-at the top of financial centre hierarchy
Begg (1991)	• World market • European market • Second division • Specialist niche market • Third division • Fourth division • Fifth division
Jones (1992)	• Type A: Sub-regional centre • Type B: Regional centre • Type C: Global centre
Campayne (1992)	• Top centre • Regional centre • Host centre
Abraham *et al*.(1994)	• Small and large centre • International and national centre
Johns (1994)	Classification made according to time zone and major on-shore financial centre (4 clusters)

Researcher	Taxonomy
Jao (1997)	• Teleogical • Geographical • Functional
Montes (1999)	• Type A • Type B • Type C • Type D

Source: Categorised by the author

own national size. Regional centres close to their customers because of geographical proximity, and enable safety and ease of operation of foreign banks 'branches (Citation from Reed, H., 1977, p.5)

Reed classifies the financial centres into three categories that are a regional, international and world. A regional international financial centre is a financial centre that broadens its scope to perform its international activities. An international financial centre is a national financial centre in which whose financial institutions have international skills and capabilities. The national economies and international centres cooperates each other. The regional international financial centres and the international financial centres are the satellite of the world financial centres. Conversely, a world financial centre is an international financial centre that has institutional infrastructure to make decisions on the cost of money and the usage of surplus funds. These centres are coordinated using a global strategy as opposed to national strategy (Reed, H., 1977, p.11). Kelen (1977) expresses the difference between tax heavens in which transactions are fulfilled under tax advantages and offshore financial centres where international financial business can be processed in a fiscally neutral way. The intelligent use of foreign exchange control and taxation separate the markets as domestic and international markets. Dufey and Giddy (1978) classify the financial centres according to the type of financial activities they are offered and their stages of development. Financial centres as metropolitan centre has high concentration of financial institution and international financial centres are the extension of domestic centres. The first type of financial centre is the traditional centre that serves as a net creditor to foreign

borrowers through bank lending and provides capital markets activities such as underwriting, placement. In the World War II, London and New York play the role of traditional centre. The second type of financial centre is the financial entrepot-full service financial centre. Entrepot is an old word, which means a place where good or money are collected, stored, and distributed. In entrepot financial centres, most of cross-border and financial services are offered to both foreign and domestic investors. The foreign borrowers and lenders use the infrastructure of the domestic financial markets. Since the rise of Eurocurrency market, London plays this role. The third type of financial centre is the offshore banking centre. The offshore centre is outside of the country centre. These centres offer financial intermediaries function for non-resident borrowers and depositors. The domestic financial sector is isolated form the offshore sector by restriction (Citation from Choi, 1984, p.21-28; Jao, 2003, p.5-6; Wong, 2012, p.64).

Caouette (1978) divides the IFC's according to functions that are deposit, booking, arranging, and currency (Citation from Choi, 1984, p.24). McCarthy (1979) makes a classification based on traditional centre, paper centre and functional centre. A paper centre is a booking centre and there are little or no financial activities in the centre. Bahamas, Jersey the Cayman Islands and Bahrain are the examples of this category. A functional financial centre is the centre, in which financial services and transactions are fulfilled for host country. All types of financial activities are undertaken by financial institution in the centre. The important point is the financial activities are concentrated at a specific space or location. The examples of functional centres are London, New York, Tokyo, Frankfurt, Amsterdam, Paris, Zurich, and Luxembourg (Citation from Wong, 2012, p.62-63; Goldberg, E., 2008, p.39). Jao classifies the financial centres into two groups, integrated and segregated. An integrated centre integrates financial services provided to both onshore and offshore market. There is no restriction for financial institution to engage in both onshore and offshore activities. Transactions can be conducted in both local and foreign currencies, without restriction. On the contrary, in segregated centres authorities make clear distinction between onshore and offshore markets. Institutions on offshore markets have no access or restricted access to the onshore sector (Jao, 2003, p.5).

Park Y.S. classifies financial centres according to whether they act as primarily as a source or a destination of funds into four types: primary, booking, funding, and collection. In primary centre, sources and uses of funds are served worldwide clients. London, New York and Tokyo are the good examples of a primary centre. A booking centre facilitates the collection and distribution of funds of non-residents, for example Cayman Islands and Bahamas. A funding centre channels offshore funds from abroad to host country for local uses. Park gives the example of Singapore, Bangkok, Brussels, and Seoul as funding centre. On the contrary, a collection centre, for example Amsterdam, Jakarta, Kuala Lumpur, channels excess domestic funds to the user outside the country (Park Y.S. and Essayyad, 1989, p.4-5; Citation from Jao, 2003, p.6; Choi, 1984, p.24; Liu and Strange, 1997, p.654).

Bhattacharya (1982) uses the primary centre, the secondary centre, and the offshore centre classification. A primary centre is equivalent to traditional centre. A secondary centre is created in developing countries, whereas an offshore centre invents in the absence of or low level of taxation on profits and the absence of exchange controls on offshore financial activities. Ponischek (1982) classifies the financial centres the same manner as Dufey and Giddy. Entrepot financial services mean an assistance of financial transaction between foreign entities that are servicing to foreigners and domestic. There are two types of offshore centres, either the shell centre that works as location of record or the functional centre where the financial transactions are fulfilled (Citation from Choi, 1984, p.24; p.27-28). Gorostiaga (1984) classifies financial centres using imperial/colonial model. London, New York, and Frankfurt are traditional IFCs that have developed based on domestic capital. These IFCs are acting as international banking centres for their colonies and depositors for the reserves of those countries. Traditional IFCs have capacity to generate capital based on domestic savings and international trade. On the other hand, new financial centres such as Hong Kong, Bahrain and Singapore are located in emerging countries. They do not have enough financial autonomy, they are the extension of traditional centres, and intermediate regional centres but operate in different time zones (Citation from Liu and Strange, 1997, p.654).

Friedmann explains the spatial polarization in three scales. The global express widening in wealth, income, and power between peripheral economies. This scale is the heart of the capitalist world. The second scale is regional in which regional income slope is relatively smooth and the difference between high and low-income region is greater 1:3. Third scale is metropolitan where poor inner-city ghettos, suburban peasant housing and ethnic working class enclave (Friedmann, 1986, p.76). Reed, H. (1989) classifies the international centres into supranational, international, and host centres. Accordingly, he classifies New York and London as supranational financial centres, and likewise classifies Amsterdam, Frankfurt, Paris, and Tokyo as international financial centres and Hong Kong, Singapore as host financial centres. In national financial centre**,** financial intermediaries and other parties are local and the foreign financial sector is insignificant. According to Reed, financial centre should be first national centre then be an international centre. The evolution of financial centres is explained through five stages. In the first stage, host IFC such as Shanghai begins to serve the lowest economic and political layer of a nation, for instance cities, countries, or provinces. In the second stage, an IFC serves a geographical area larger than its very close environment, but smaller than the nation itself for instance, Bahrain and Moscow. In the third stage, when the centre becomes dominant within the nation state, supranational financial centre of second order, such as Amsterdam, Chicago, emerges. A Supranational financial centre is leading in finance, communications, and management. A supranational financial centre manages large amount of financial assets and liabilities, works closely with large number of industrial corporations, and establishes the organisational and operating norms that govern internationally dynamic organisations. In the fourth phase, supranational financial centre of the first order such as New York offers services to its country as a whole and to other nearby countries. In the fifth phase, a supranational financial centre such as London is at the top of financial centre hierarchy comprising all other financial centres. The significance level of financial firms is measured in terms of these firms asset size or the number of foreign financial firms. If the financial firms are not interested in centre's activities and the centre does not attract these firms, or these firms do not reach the markets in the centre, this centre is a national centre. In national centre, In Tokyo, Frankfurt, Amsterdam, Paris, and Milano, international financial services are offered for the national economies rather than their regions or the world. On

the other hand, regional financial centre, financial centres outgrow outside national border. These centres serve the regional economies rather than their national economies. Dubai and Hong Kong, Europe can be given as an example. The final formation of financial centre is the international one. In an international financial centre, the foreign financial sector is significant. The international financial business is attractive and local market is reachable. Instead, global financial centre is similar to international financial centre but is much smaller and global financial centre constitutes an international financial centre. The activities of global financial centre spread out all over the globe and this centre connects international, national, and regional financial services directly. Transactions are done with other countries by bypassing financial intermediaries in that country. London and New York are global financial centres (Park, Y.S. and M.Essayyad, 1989).

Begg uses a mix of product, client, function and other characteristics to classify European financial centres into seven classes that range from retails centre to global financial system. The first category is world markets, such as London, Tokyo, and New York. The second category is European market, such as London, Paris, and Frankfurt. The third category is second division that covers mainly national markets with linked international business but lacking mass financial activities, such as Amsterdam, Brussels, Madrid. The fourth category is specialist niche market, such as Dublin and Luxembourg. The fifth category is third division that is mainly regional markets, such as Naples and Glasgow. The sixth category is fourth division that is smaller cities with local services provision plus major institutions located there for historical reason, such as Halifax. The seventh category is fifth division that is local retail services in the towns and regions (Begg, 2006, p.33-34; Tschoegl, 2000, p.6).

Jones (1992) divides the financial centres into 3 folders. Type A is sub-regional centre that is between a national centre and regional centre representing a territorial area larger than country, Asia can be given as an example. Type B is the regional centre for instance Sydney and Singapore can be categorised under this folder. Type C is the global centre, such as New York and London (Citation from Wong, 2012, p. 65). Campayne (1992) distinguishes between centres and activities and then linked them.

The centres such as London, Tokyo, and New York are grouped into at the top; those are followed by regional centres, and then followed by host centres in which foreign banks serve their multinational corporate customers (Citation from Tschoegl, 2000, p.7).

Abraham *et al*. (1994)'s classification is based on the nature of activity in IFC categorised into three environments: productivity, artificial and regulation. Productivity factors cover accumulation of capital, human resource quality, geographical location, transportation, and communication quality, number of financial institutions or entrepreneurs. Artificial environmental factors involve a system of controlling macro economy and finance, technology, financial markets and innovation. Finally, regulatory system covers various rules and financial regulation on foreign exchanges or stock markets. All IFCs are international so there are inward and outward flows of goods, services, capital, and information between domestic economies and the rest of the world. Moreover, all IFCs supply financial services and instruments, small or larger range (Citation from Liu and Strange, 1997, p.655; Park J.H. 2012. p.8-9). Johns (1994) classifies financial centres into four clusters according to relationship between time zone and major onshore centre. The Caribbean-Central American centres serve the North and Latin American economies within New York's time zone. The European centres include continental European financial centres and various island offshore centres within London and Continental European time zone. In Middle East, some Mediterranean and Gulf Region financial centres serve Middle-Eastern oil-surplus countries. In the Asia-Pacific region, Hong Kong and Singapore on one side, Vanuatu and Nauru on other side serve within Tokyo's time zone (Johns, 1994, p.27-28; Park Y.S., 2011, p.5).

Jao (1997) explains the three typologies of financial centres in three perspectives: teleological, geographical, and functional those are summarized in Figure 9. In geographical perspective, financial centres are classified according to the scope and their activities. The smallest financial centres in the certain region of the country are named as sub-national centres, for example Shenzhen in China. Whereas, the largest

financial centre of a country can be expressed as national financial centre, for example Tokyo in Japan, Sydney in Australia, Shanghai in China. When the country finds

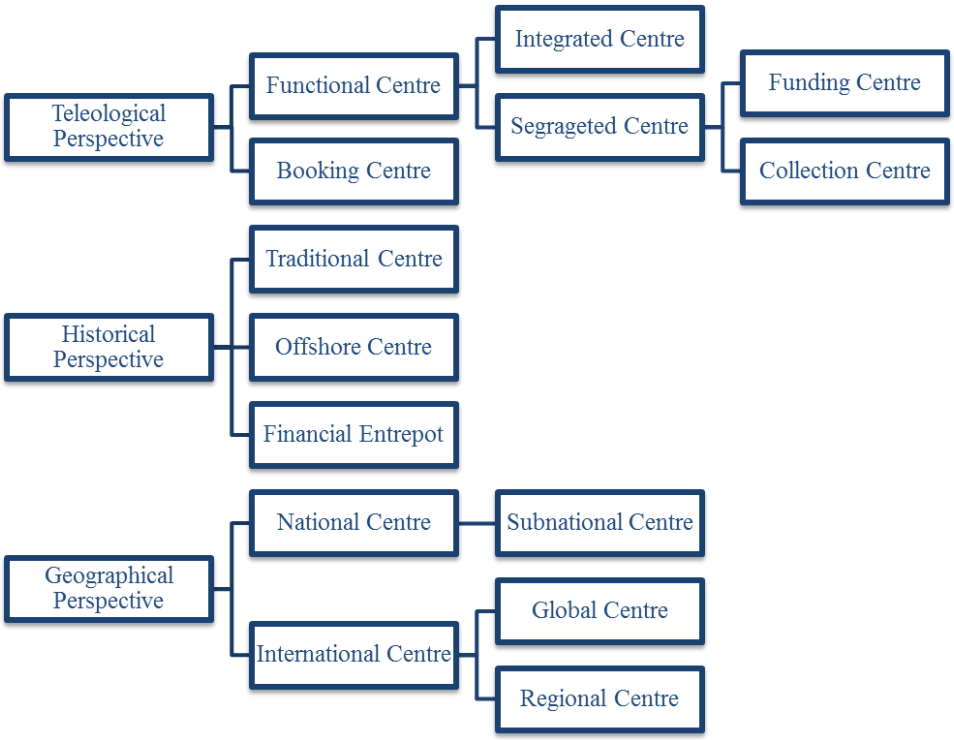

Figure 9: Classification of Financial Centres

Source: Jao, Y. C. (2003). Shanghai and Hong Kong as International Financial Centres: Historical Perspective and Contemporary Analysis. School of Economics and Finance Hong Kong University.

suitable to centralize its financial activities in geographically adjacent urban centre, regional banking, and financial centres arise. In other word, the financial centre outgrows its national boundary then it becomes regional financial centre. Afterwards, regional financial centres outgrows its regional boundary, it will be a global financial centre, for example London, New York and Tokyo. In historical perspective, the classification is made based on traditional, financial entrepot and offshore centre. Traditional centre serves as a net capital exporter to world either by banking sector capital markets. The financial entrepot centre offers the services through its financial institutions and markets to both domestic and foreign residents. In teleological perspective (specialised perspective), Jao classifies the financial centres as integrated and segregated financial centre. In integrated financial centre, financial institutions involve both on-shore and offshore business without any restriction. The examples of

these financial centres are Hong Kong, Tokyo, and London. On contrary, in segregated financial centre, i.e. Shanghai and Kuala Lumpur, there is a clear distinction between on-shore and offshore market or local and foreign currency denominated businesses (Jao, 1997, p.130-131; Jao, 2003, p.4-5; Wong, 2012, p.61-63).

Montes (1999) classifies the financial centre into four categories shown in Table 11 based on the capital intermediation role they fulfil. Type A is least sophisticated financial centre. An IFC must display at least some features pertaining to types B to types D Hong Kong and Singapore have type D features while New York and Tokyo have type B features. On other side, Shanghai has type A features, dealing with domestic suppliers and users of capital (Citation from Luo, 2012, p.10-11).

Table 11: Montes's Classification of Financial Centres

Type A Centre	Domestic to Domestic	Intermediaries between domestic providers of capital and domestic users of capital
Type B Centre	Domestic to Foreign	Intermediaries between domestic providers of capital and foreign users of capital
Type C Centre	Foreign to Domestic	Intermediaries between foreign providers of capital and domestic users of capital
Type D Centre	Foreign to Foreign	Intermediaries between foreign providers of capital and foreign users of capital

Source: Luo, R. (2012). Shanghai as an International Financial Centre - Aspiration, Reality and Implication. *Undergraduate Economic Review.* 8.1.p.11.

4.5 DRIVERS FOR DEVELOPMENT OF FINANCIAL CENTRES

Various academicians have studied the drivers, which have influence on the development of international financial centres. Each international financial centre has unique characteristics and features. Financial centres differ from each other in terms of economic, financial, and physical structure. Their features can be exemplified as follows: geographic location, economic and financial structure, physical infrastructure, communication, image, market image, and legal environment. Centres should serve differently to their foreign financial firms. Some centres offer favourable legal and fiscal packages to their entrants. Some centres have excellent financial system. The

basic conditions and drivers required to build an international financial centre can be summarized in the following sections.

Cassis declares the following conditions that are necessary for the development of international financial centres. These are stability of policy institutions, strength of currency, savings that can be easily invested abroad, powerful financial intermediaries, light tax burden, skilled workforce, efficient means of communications, reliable information, firm state supervision (Citation from Arner, 2009, p.196). According to Choi (1994), the necessary factors are classified as geographical factors and service level. Geographical factors involve large-scale markets. Financial services include accounting, taxes, transportation and communication infrastructures etc. (Citation from Park, J.H. 2012, p.8). For Onda (1995), scale is important so financial centre is a time-zone location. Rose (1994) gives the importance on the concentration of offices of foreign financial institution and of cross-border transactions of different kinds. An IFC must have a good reputation for creditworthiness and liquidity. The creditworthiness of country is necessary for high liquidity. The determinants of liquidity and creditworthiness are political and social stability, foreign exchange reserves, stability of local currency and amount of foreign financial liability existing in the IFC (Citation from Liu and Strange, 1997, p.653). Researchers generally concentrate on the growth patterns of financial centres, especially IFCs. Lee and Vertinsky highlight that the development of financial centres can be either demand-driven as natural backup to economic and trading growth in a specific region or supply driven with policy initiatives by government to promote the emergence of financial centre within the country (Lee and Vertinsky, 1988, p.151-172).

4.5.1 Economic Drivers

Economic drivers that cover macro and micro economic factors in conjunction with the efficiency of financial sector affect the development of IFCs. In economic factors, most attention is paid to economic activities with a cross border or cross currency elements, that are balance of payments, international trade, foreign direct investments and economics of scale. In terms of macroeconomic factors income level, sound macroeconomic policy, growth rate and high trade and investment intensity are

important for the formation of an IFC. Conversely, microeconomic factors that are mainly lower business costs, domestic market and growth potential, human capital, political and economic freedom influence the opportunity cost of doing business in one city versus another.

The economic stability is important for financial centres so the economic instability disrupts the smooth flow of capital within financial centres. Dufey and Giddy (1978) emphasise that the strong economic activity is prerequisite for financial centres. If low economic activities are conducted within the centre, the institutions located there only for taxation purposes will soon move to other centres that have more economic activities. According to Montes (1999), the financial centres with high economic activities stimulate financial products and market innovations. In addition to that, the markets improve themselves through market and product innovation. The foreign investment increases with higher economic growth rate. Financial services firms place at centres with lowest cost and highest productivity. The lowest costs are subject to tax rates and incentives (Citation from Sagaram and Wickramanayake, 2005, p.27-28).

Foreign direct investment is directly related with economic growth and development of financial centre. Goldberg and Saunders point out that foreign direct investment is an important factor to determine the level of international banking activity in the USA. Conversely, restricted foreign direct investment in Japanese and other countries affect the position of New York International Financial Centre adversely (Walter and Saunders, 1991, p.31). Countries with sound foreign direct investment inflows through acquisitions increase their chances of developing into financial centres. In Table 12, foreign direct investment amount as percentage of GDP of leading financial centres in 2011 are summarized. In compliance with the results of table, Turkey is in 37th place, whereas Asian emerging countries, Singapore and Hong Kong, are the top of the in the ranking.

International trade is also a strong determinant of financial centre's growth. Countries open to international competition and trade are able to develop financial centres than countries with closed-economies. Since the volume of financial services demanded is high (Laurenceson and Kamalakanthan, 2004, p.14).

Table 12: Foreign Direct Investment (Percentage of GDP 2011)

Rank	Country	Ratio (%)
1	Hong Kong	34,18
2	Singapore	24,63
17	Malaysia	4,29
24	The Russian Federation	2,86
31	Canada	2,36
34	The United Kingdom	2,23
36	The United Arab Emirates	2,13
37	Turkey	2,04
40	India	1,88
41	China	1,70
45	The United States	1,50
46	France	1,47
60	Japan	-0,03

Source: WEF. (2012). Financial Development Report 2012. USA.p. 380.

Nadler finds that foreign trade activities important for IFCs. Kindleberger (1984) states that the larger country's participation in international trade, the greater the size of the financial sector. The volume of import and export transactions increases the demand of financial services (Citation from Walter and Saunders, 1991, p.31). According to Goldberg, Helsley and Levi findings, imports are positively associated with financial sector development, whereas exports are negatively associated related to the size of financial sector. Moreover, the greater volume of international trade through a financial centre the greater amount of financial services is required (Goldberg, Helsley and Levi, 1989, p.87).

Moreover, the emergence and maintenance of financial centres is usually based on external and internal economies of scale. Economies of scale involves that the companies gain from concentrating their activities in one place, however in external economies of scale firms can be profitable only when they locate their activities at same place as other banks. The more effective and efficient financial sourcing and allocation can be attained with the larger scale of the financial industry. Furthermore, the existence of several sellers of similar but not identical services in one specific location can reduce search or information costs for buyers. In order to understand the development of financial centres, the relation between external economies of scale and centrifugal

structure should be taken into consideration. However, the research done on this area is very rare. Choi, Park and Tschoegl work on the dynamic condition of international financial service and financial centres, and find that the attraction of financial centre is determined by economic scale, total number of financial institutions, present scale of stock market, bilateral trade relation (Choi, Park and Tschoegl, 2002 ; Zhang and Chen, 2013, p.71).

The efficiencies of centralized location reveals cost advantages by large scale of production and consumption of financial services through economics of scale. The knowledge and services of complementary and competitive institutions can be easily accessed. On the other hand, clearing and exchange process of checks, securities and drafts, enhanced risk management, administration functions, integrated product development, information sharing are achieved. On the demand side, potential of lower transaction costs, lower product prices due to more fierce competition are ensured. Borrowers access large and cheaper of amount of capitals and lenders have greater liquidity (Claessens, 2002, p.13; Reed, H., 1980, p.20).

According to Jarvis, clustering arises from efficiency gains and reduction of transaction costs that are associated with financial agglomeration where density of financial service firms reduces barriers and creates information asymmetries and knowledge economies. Clustering generates allied markets and agglomerates workforces in financial management that reduces industry costs and enables competition because of market size and specialisation. Competitive financial markets provide larger and cheaper securities issues for the lender and borrower of capital. Scale economies permit commoditisation of risk that is sold on between agents, and reduce transaction barriers. The effects of economies of scale associated with functional specialisation are used to explain distribution, capacity, and sizes of IFCs. There are scale advantages in foreign exchange, international bonds, and the depth of their capital markets in London and New York. Jarvis leans on a mix of economies of scale and endowed capacities theories as the primary explanation of the growth of global and regional financial centres. On the other hand, Jarvis points out the attraction of economies of scale and specialisation have a limitation so there should be fewer but

bigger global centres. He also emphasises that the existing trading hubs of Hong Kong, Shanghai, and Singapore provide natural sources of business for these financial centres for example foreign exchange activities, issuance of financial instruments (Jarvis, 2009, p.9; Elliot, 2011, p.4-5). Davis (1990) searches the agglomeration of financial firms in his analysis. For financial firms, external economies of scale are important in addition to regulation and technology. A significant deterioration in market condition paves the way for relocation (Citation from Goldberg, E., 2008, p.34-35). Davis (1990) also explores that the higher degree of asset turnover increases the efficiency and liquidity of a financial centre (Citation from Loechel, 2010, p.29).

Dufey and Giddy (1978) emphasise specialisation and economies of scale, while Kindleberger (1973) draws attention to the number, size, and internationalisation of bank in the IFC formation process (Citation from Walter and Saunders, 1991, p.28-29; Kindleberger, 1973). Goldberg and Hanweck's study examines the effects of domestic financial centres over time and Goldberg, Helsley and Levi aim to determine the local factors that affect a domestic centre's national market share at any time. They find a positive relation between regional centre importance and the following variable that are personal income of each state as a measure of economic activity, imports from abroad, a number of non-bank multinational firms and the number of employees of non-bank foreign firms. The presence of foreign firms has a positive affect for the local financial activity (Goldberg, Helsley and Levi., 1989, p.88).

4.5.2 Financial Structure, Financial Products and Efficiency Drivers

Low transactions costs, international standard of accounting, large volume, and variety of financial products and services affect the development of IFCs. Ragazzi emphasises the importance of the existence of broad and efficient financial markets in the creation of IFC (Ragazzi, 1973, p.471-498). Goldberg, Helsley, and Levi discuss the major factors influencing the level of financial development in their study. Their study confirms the derived demand of financial intermediation in the development of the IFC rather than supply advantages. The important variables in the emergence of international financial centre are as follows: (a) the level of overall economic development (b) the level of international trade (c) the extent of financial intermediation

(d) rigidity of financial regulation. They also test the size of IFC by using three factors that are the size of the financial sector, the foreign asset held by domestic banks and the portion of total employment in financial sector. The independent variables used in their study are per capita GDP as a measure of economic development, merchandise import, and export as a measure of financial intermediation, national saving rate, and outstanding public, and private debt, investment flows as a measure of degree of financial regulations, the average reserve ratio of the banks as a measure of tax heaven. According to their findings, the size of imports GDP per capita, saving rate and offshore banking are significantly and positively, related to the size of financial sector, and the development of IFC. Conversely, the amount of exports is significantly and negatively, correlated with the development of an IFC. In addition to this, the financial imbalances are created by trade deficits provided the momentum to the growth of a financial centre (Goldberg, Helsley and Levi, 1989, p.86-88; Grote, 2000, p.6). Sassen (1999) depicts that national consolidation of financial activities, financial markets and financial liberalisation, i.e. free capital flows and financial services openness is the most important attribute for transforming a an ordinary city into a global financial centre (Citation from Zhao, 2010, p.3).

Financial services are important means determining GDP growth. Leung and Unteroberdoerster analyse the pre-eminence of certain financial centres over others. In doing so, they identify special country factor i.e. foreign direct investment, portfolio investment and banking activities and linkages in certain financial centres. They find that the country's share in international capital flows rises with GDP. In addition to this, the level of GDP development correlates with supply side factor such as skill base and strength of institutions. However, the increase in GDP share is less than proportional increase in its share in global capital flows, for each 10% increase in per capita GDP, a country's share in capital flow increases by about 12%-14%. The comparative advantage of internationalisation of financial centres is more sensitive to such factors at higher levels of development and regional integration (Leung and Unteroberdoerster, 2008, p.4; p.16).

The sophistication of financial products increases the development of financial system and financial risks are evaluated more effectively so the information asymmetry decreases. Financial centres provide financial products/services across borders. Fund raising is one of the most valuable services provided by financial centres. Financial centres raise funds for corporations, individuals, and governments. An efficient and cost effective fund raising in IFCs requires deep, liquid and globally connected financial markets (Ministry of Finance Government of India, 2007, p.53).

Conversely, financial structure basis drivers and factors can be listed as follows; (a) financial innovation and competitive financial intermediaries; (b) well-established securities market, free capital flows, futures exchange, clearing system and solid market infrastructure; (c) economically strong and reputable banks; (d) free entry of foreign banks; (e) easy to access to domestic and international markets (f) sound foreign currency and monetary framework; (g) strong and stable exchange rates (Deutsche Bank, 2010, p.6). In addition to these conditions listed above, Fakitesi (2009) adds that the financial centres are encouraging to conduct the international financial business profitably (Citation from Moosa, Li and Jiang, 2013, p.3). According to industrial organisation theory, an IFC survives market competition if its borrowing-lending spread is narrow and an IFC is more efficient than other competitors are. Relative efficiency can be measured by the concentration ratio of banks operating at a particular IFC. The higher the concentration ratio, the more competitive IFC is (Park Y.S and Essayyad, 1989, p.13). Pakhomov (2011) explains that a sound financial system, in which there is a liquid market, no barriers between various market segments, adequate financial governance and control, is the pre-condition for the development of a place into financial centre (Citation from Wong, 2012, p.93).

Campayne (1992) distinguishes between centres and activities then makes connection with them. The activities cluster into four groups. The highest order activities such as investment banking activities take place only in a few centres, i.e. top centres. The lowest order activities such as commercial banking take place in many locations i.e. lower rank financial centres. Asset management and portfolio diversification are other groups. Global, regional, and national asset managers including

insurance companies, pension funds, investment, and mutual funds conduct asset management and portfolio diversification activities. Whereas personal wealth management involves the management of personal assets of high net worth individuals, personal wealth management usually takes place in specialised IFCs such as Cayman Island, Switzerland, Mexico (Citation from Tschoegl, 2000, p.7).

Financial products have spatial formation of information in their design. The creation of new financial instruments requires freedom so the financial instruments are transferred from jurisdiction to another. Broader range of specialized financial products demand is greater in international markets rather than in domestic markets. Financial innovations in international financial markets gain importance for various reasons. Those can be listed as follows: multinational regulatory environment, differentiation of the characteristic of competition, riskiness of exchange rates. On the other hand, the process and products innovation in financial system have four advantages, which are reduction agency and information costs, completion the market, reallocating and reduction risk, reduction transaction and settlement costs (Fair and Raymond, 1994, p.15).

Mainly three categories of products are taken into account in financial sector: business financing products, investment products, foreign exchange, and risk management products. Business financing products cover basic bank loans, direct market finance, and foreign sources of funds (Lynch, 1996, p.16-17). Conversely, Clarke and O'Connor (1997) classify financial product in three categories that are transparent, translucent, and opaque based on information content and specification of product traded. In national financial centres, translucent products are traded but opaque products are traded in sub-national financial centres, finally transparent products are traded in international financial markets (Citation from Schulz and Walther, 2010, p.5-6). Price considerations and economies of scale determine the localisation of trading in transparent financial products. Trade in these types of products, such as buy and sell transactions, can take any place such as London and New York because of large number of traders located there. There is no need of insider interpretation and the determining price of property is unimportant. Trade in commodities, foreign exchange, blue chip

stocks and bonds are an example of transparent products. The more transparent process of a financial product, the high accessibility of product information is required to monitor the product itself and its supplier. Translucent products are classified under intermediate category. Well-known global products are varied to create geographically unique product. Standard properties of the products are well known at the global level but whose specific characteristics are only known, is the local markets. Credit based derivatives, asset backed securities, and hedge funds can be given as an example, and are benefited from economies of scale in IFCs. To trade those products require knowledge and risk of products are unknown. In opaque products, there is a deep information asymmetry. To become a successful trader, crucial information should be reached. Private equity, shares of small and mid-cap firms can be given as an example. Small financial centre are specialized in opaque products. Faulconbridge *et al*. state that international financial centres retain their competitive advantage by developing their intermediation capacity and by transforming transparent products into translucent product. The IFC creates opportunity for skilled traders by developing intermediation capacity and local knowledge and by transforming transparent products into translucent products (Faulconbridge *et al*., 2007, p.286; Schulz and Walther, 2010, p.5-6).

Global and regional corporate treasury management involves fund raising, liquidity investment, asset-liability and risk management through traded derivative products and insurance. On the other hand, highly developed exchange traded and tailored derivatives such as swaps, options, futures, caps and collars are used in global and regional risk management and insurance operations. All exchanges provide facilities for 24x7x365 trading of all listed securities. Capital markets play crucial role to enable the companies' innovation and growth at national, regional, and global levels. Global M&A advisors provide cross border support for companies who complete acquisitions, company sales, buy-outs and buy-ins and fund raising. Broad range of financial services, i.e. banking services, securities are critical for financial services. Product innovation comprises the creation of new financial instruments such as futures, caps, floors, swaps by bundling existing ones or imitating the instruments or creating a new financial aspect by re-bundling existing financial instrument. In contrast, process innovations involve financial contract design such as cash settlement, future contracts,

settlement methods and trading, and techniques of margin calculation. As well as a cost is associated with innovation (Walter, 1993, p.12).

4.5.3 Regulatory, Political and Legal Drivers

The role of national regulatory factors is an important attribute to determine an IFC's success; additionally regulatory reforms increase the attractiveness and competition of financial centres among them. The government related conditions and drivers are strong commitment of government and political independence of the government and stable political environment is important for an IFC. Regulatory, political, and legal drivers can be listed as follows; (a) efficient, strong, stable regulatory and supervisory structure; (b) strong legal system and bankruptcy processes, soft tax environment (Deutsche Bank, 2010, p.6). Political and economic freedom affects the opportunity cost of doing business in one city versus another. Several political factors have impact on the development and structure of IFCs. Some of these factors can be listed as follows: the type of governmental system, the level of the host country's military power, foreign aid, military, foreign intelligence experience, and perception of political continuity and predictability.

The regulatory and tax environment, which are offered to foreign financial institutions may or may not be the same as the environment to which domestic institutions are subject therefore the effects of regulation, taxation, and political factors on the level of activity in financial centre should be considered. An example of regulatory environment is the Bund-future market, primarily based on German federal bonds, but initially traded and regulated in London because of the prevention of derivatives trading in Germany until 1990. After re-regulation, the Bund-future market trading moved to Frankfurt because of the advantages of the German electronic trading system, especially its cost-efficiency. After the merger of the London Stock Exchange (LSE) with NASDAQ (National Association of Securities Dealers Automated Quotations), the LSE came to fall under the over restrictive regulation of the U.S. Security Exchange Commission (SEC). The growing share of IPOs went to London's LSE Alternative Investment Market (AIM) instead of New York's NYSE because of NYSE's corporate governance regulation under the U.S. Sarbanes–Oxley legislation.

Even in a neoliberal world, regulatory differences can still play a role in explaining the differential distribution of financial activities over space (Faulconbridge *et al.*, 2007, p.284). In addition to that, international politics eases the development of financial centres. A good example of this is London as a centre for the Eurodollar market.

The regulation can impose a set of taxes and subsidies. Tax environment has vital importance for structuring and selecting location of financial centre. Regulatory competition is curbed by the international standards, prudential supervision, and the increased awareness of risk. Tax competition, especially corporation and income tax, affects the positions of financial centres (Ansidei, 2000, p.11). Taxation enters into the financial centres in two ways. First way involves the taxation of the capital income. The second way involves taxation of financial transactions and earning of financial intermediaries. Goldberg (1991) emphasises that tax environment is important for the cost structure of companies. According to Montes (1999), financial companies choose to locate a place with at lowest cost. Lowest cost case is derived from low tax burden (Citation from Sagaram and Wickramanayake, 2005, p.28). International tax treaties and tax law cover global tax management and cross-border tax liability optimisation. Multinational businesses are affected by tax law, legislation in IFC. The burden of reserve requirements, interest ceiling, financial disclosure requirements increase the cost of financial intermediation. On the other hand, subsidies stabilize financial markets, and reduce the risk of systematic risk and reduce the cost of financial intermediation. The difference between taxes and subsidy elements of regulation is called net regulatory burden (NRB). The financial market participants are very sensitive to changes in NRB between competing financial centres. Profit maximizing financial firms prefers the financial centre where the NRB is lowest under all other economic factors is constant. Moreover, some countries such as Japan and the United States are subject to activity limitation and conventional forms of fiduciary and stability-oriented regulation in financial services industry. The high degree of restriction decreases the growth potential of financial centre (Walter and Saunders, 1991, p.36-42; Walter, 1993, p.52-53).

The maintenance of a centre's comparative advantage depends on an asymmetry of information and transactions costs one of which is regulation (Budd,

1995, p.353). Legal system affects the development of financial centre. There are two legal systems, which are Anglo-American System and the Continental European, in the world. Most countries in East Asia and Japan adopt Continental European Civil law system. In international financial centre, the market should function properly and guarantee the interest of all participants. The financial markets governed under Anglo-American law system are flexible but they may stimulate hasty financial innovations. On the other hand, the rigid Continental European system develops dogmas that encumber market development. Financial centres under Anglo-American system are directed by securities markets, whereas financial centres under Continental European system are usually bank-based. La Porta *et al.* (1997) examine 49 countries and find that common law countries, such as London, New York, Hong Kong, Toronto, Singapore, have the developed capital markets, whereas code law countries, such as Tokyo, Paris, Frankfurt, have less developed capital markets. La Porta *et al*. (2008) emphasise that the differences between Common Law and Civil Law have impacts on the distribution of global financial centres. From this perspective, the global financial markets are controlled by the Anglo-American system (Citation from Zhao, 2010, p.12-14). Four leading global and international financial centres, London, New York, Hong Kong, and Singapore ranked by the GFCI have Common Law jurisdictions. Nonetheless, Paris, Frankfurt, Zurich, Tokyo and Shanghai, do not have common law system (Arner, 2009, p.199).

4.5.4 Infrastructure and Other Drivers

The infrastructure of financial system affects its interregional, local, and international activities. The infrastructure comprises following factors: (a) the number of employees in local financial services sector (b) time zone of the city (c) the age of the city (if the city is older, its stock of capital i.e. roads and subway is worse.) (d) status of the city (as a measure of political influence) (e) communications (e) the cost and availability of building and office space and property prices. Finally, other drivers can be listed as follows: (a) widely reachable and low cost information system; (b) easy access to financial and related professional services; (c) qualified and multilingual human resources, good telecommunication infrastructure, quality of life (competitive cost, commercial rents high quality social infrastructure) (Deutsche Bank, 2010, p.6).

In Goldberg, Helsley and Levi (1989) study, the relative size of the 31 world financial centres (including New York) is examined. The most important finding is that the more service-oriented city working population, the greater the financial activity of the city. In addition to that, the time zone of city has high statistical significance whereas neither the age of city nor the status of the city seemed to signify very much. Reed, H. (1981) proves that the high quality of international communications centre plays an important role in achieving and maintaining the status of international financial centre. Moreover, the high quality of local management services allows a financial centre to achieve high degree of autonomy and power (Citation from Walter and Saunders, 1991, p.32-33). Based on Reed's view, information and communication infrastructure is accepted as an important factor for and international financial centre (Kuah, 2003, p.6).

If the larger number of financial firms exists in the centre, the greater the volume of financial activity is as well as the larger the percentage of the skilled workforce. Furthermore, good after hours trading capabilities is crucial for financial centre to attract whole business. The different institutional structures and practices and oligopolistic market enable even in a deregulated environment advantageous asymmetries by new products and market niches. The government infrastructure doings can change the effective distances by building roads and enhancing transportation facilities (Elliot, 2011, p.4).

4.6 GLOBAL RANKING MODELS OF INTERNATIONAL FINANCIAL CENTRES

Global ranking models categorize the cities and explore their role in driving financial system and economy. Each model or index is calculated by different evaluation indicators or dimensions that are summarized in Table 13.

Table 13: Evaluation Dimension of Each Global Ranking Model

Index	Dimension or Areas of Evaluation
Global City Index	• Business activity • Human capital • Information exchange • Cultural experience • Political engagement
Global Financial Centre Index	• Human capital • Business environment • Infrastructure • Financial sector development • Reputational and general factors
KPMG-Overall Competitiveness Index	• Industry opinion • Industry performance • Capability measurement
Xinhua-Dow Jones International Financial Centres Development Index	• Financial market • Growth and development • Supporting industries • Service levels • General environment
World Competitiveness Ranking	• Economic performance • Government efficiency • Business efficiency • Infrastructure

4.6.1 Global City Index

The index has been calculated since 2008 every two years, the ranking for last 3 periods are shown in Table 14.The metropolitan cities are ranked using 25 metrics across five dimensions. For two centres, New York and London, the ranking has not been changed since 2008. Istanbul ranking is at 37th place, rising five places in 2012, but falling nine places from 2008 to 2010 period Focus of this index is mainly business activity and human capital of which weight is 30 percent. The dimensions shown in Figure 10 are used in the Global City Index that is business activity, human capital, information exchange, cultural experience, and political engagement (ATKearney, 2012, p.3; p.10-11).

Table 14: Global City Index-Trends

City-Ranking	2012	2010	2008
New York	1	1	1
London	2	2	2
Paris	3	4	3
Tokyo	4	3	4
Hong Kong	5	5	5
Los Angeles	6	7	6
Chicago	7	6	8
Seoul	8	10	9
Brussels	9	11	13
Washington	10	13	11
Singapore	11	8	7
Sydney	12	9	16
Vienna	13	18	18
Beijing	14	15	12
Boston	15	19	29
Toronto	16	14	10
San Francisco	17	12	15
Madrid	18	17	14
Moscow	19	25	19
Berlin	20	16	17

Source: ATKearney. (2012). 2012 Global Cities Index and Emerging Cities Outlook. USA. p.3.

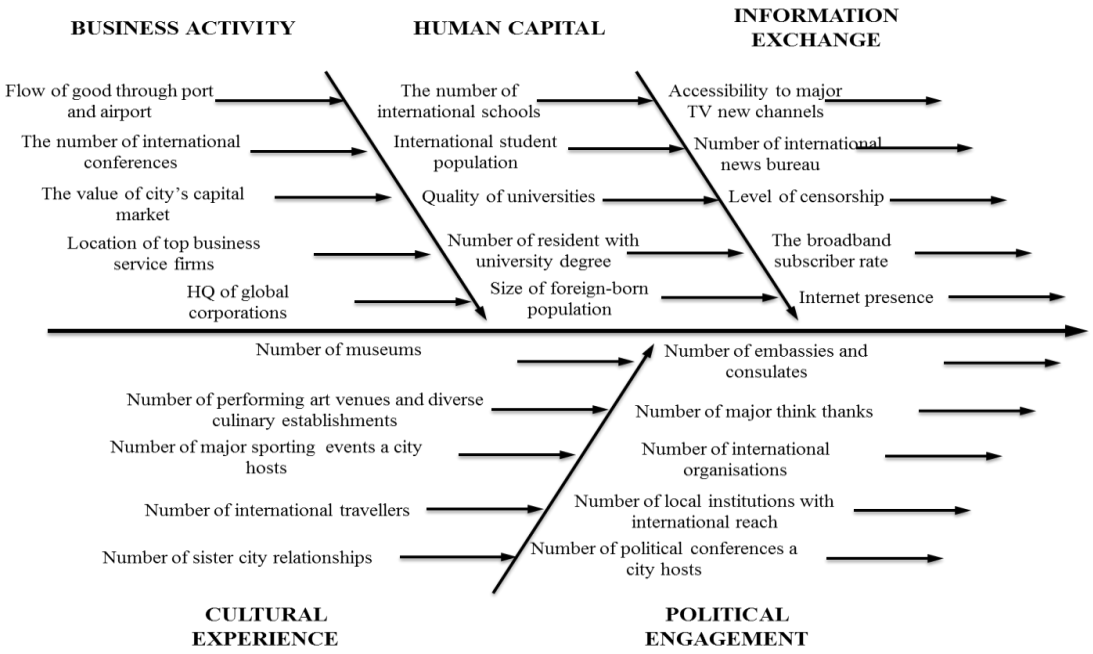

Figure 10: Global City Index Variables

Source: ATKearney. (2012). 2012 Global Cities Index and Emerging Cities Outlook. USA. p.10.

4.6.2 Global Financial Centres Index (GFCI)

GFCI index published by City of London in corporation with Z/Yen Group, which provides ranking and rating for 83 centres, has been calculated every six months since March 2007. There are two separate sources of data, instrumental factors published by international research institutions i.e. OECD, World Bank, and online survey answered by financial professionals. In the model, 103 instrumental factors are used and these factors designate the performance and competitiveness of financial centres in five broad areas: business environment, financial sector development, and infrastructure, human capital, reputational, and general factors, shown in Table 15.

Table 15: Instrumental Factors and Indicators of GFCI

Instrumental Factors	Evaluation Indicators
Human Capital	• Graduates in Social Science Business and Law • Gross Tertiary Education Ratio • Visa Restrictions Index • Human Development Index • Citizens Purchasing Power • Quality of Living Survey • Happy Planet Index • Number of High Net Worth Individuals • Personal Safety Index • Homicide Rates • World's Top Tourism Destinations • Spatial Adjusted Liveability Index • Average Days with Participation per Year • Human Capital • Global Talent Index • City Wide CO^2 Emissions • Healthcare • Global Skills Index
Business Environment	• Business Environment • Ease of Doing Business Index • Operational Risk Rating • Real Interest Rate • Projected City Economic Growth • Global Services Location Index • Corruption Perceptions Index • Wage Comparison Index • Corporate Tax Rates • Employee Effective Tax Rates

	• Personal Tax Rates • Bilateral Tax Information Exchange Agreements • Total Tax Receipts (as % of GDP) • Economic Freedom of the World • Banking Industry Country Risk Assessments • Government Debt as Percentage of GDP • Political Risk Index • Global Peace Index • Financial Secrecy Index • Institutional Effectiveness • City GDP Figures • Number of Greenfield Instruments • Open Government • Regulatory Enforcement
Financial Sector Development	• Capital Access Index • Securitisation • Capitalisation of Stock Exchanges • Value of Share Trading • Volume of Share Trading • Broad Stock Index Levels • Value of Bond Trading • Volume of Stock Options Trading • Volume of Stock Futures Trading • Domestic Credit Provided by Banks (% GDP) • Percentage of Firms Using Bank Credit to Finance Investment • Islamic Finance • Total Net Assets of Mutual Funds • Net External Position of Banks • External Position of Central Banks (as % GDP) • Liner Shipping Connectivity • Commodity Options Notional Turnover • Commodity Futures Notional Turnover • Global Connectedness Index • City GDP Composition (Business/Finance)
Infrastructure	• Office Occupancy Costs • Office Space Across the World • Global Property Index • Real Estate Transparency Index • Digital Economy Ranking • Telecommunication Infrastructure Index • Quality of Ground Transport Network • Quality of Roads • Roadways per Land Area • Railways per Land Area

	• Connectivity • Physical Capital • IT Industry Competitiveness • Energy Sustainability Index • City Infrastructure • Urban Sprawl • Metro Network Length • Global Information Technology • The Web Index
Reputational and General Factors	• World Competitiveness Scoreboard • Global Competitiveness Index • Global Business Confidence • Foreign Direct Investment Inflows • FDI Confidence • City to Country GDP Ratio • GDP per Person Employed • Global Innovation Index • Global Intellectual Property Index • Retail Price Index • Price Levels • Global Cities Index • Global Power City Index • Number of International Fairs & Exhibitions • City Population Density • Innovation Cities Global Index • City Global Appeal • Global City Competitiveness • The Big Mac Index • City Global Image • City's Weight in National Incoming Investments • Sustainable Economic Development • Global Enabling Trade Report

Source: Long Finance (2014). Global Financial Centres Index 15. p.51-55.

Online surveys are filled by finance sector professionals. Rating and ranking are calculated using a factor assessment model. If an indicator is a country level, the score of indictor is used for all financial centres in that country; moreover, if the city level data are available, nation based data are not used (Long Finance, 2013, p.2; p.41; Park J.H., 2012, p.10). Long Finance also calculates the financial sector sub-indices. The results of industry sector sub-indices are shown in Table 16. In 2012, London is in the first ranking all financial subsector except banking (Long Finance, 2012, p.32).

Table 16: GFCI Industry Sector Sub-Indices Top 10

Ranking	Banking	Insurance	Investment Management	Government &Regulatory	Professional Services
1	New York	New York	New York	London	London
2	Hong Kong	London	London	New York	New York
3	London	Singapore	Hong Kong	Hong Kong	Hong Kong
4	Singapore	Hong Kong	Singapore	Zurich	Singapore
5	Seoul	Seoul	Tokyo	Singapore	Zurich
6	Zurich	Zurich	Boston	Geneva	Tokyo
7	Tokyo	Chicago	Zurich	Tokyo	Geneva
8	Shanghai	Boston	Toronto	Seoul	Chicago
9	San Francisco	Geneva	Geneva	Frankfurt	Toronto
10	Geneva	Tokyo	Chicago	Toronto	Washington

Source: Long Finance (2014). Global Financial Centres Index 15. p.31.

GFCI index is subject to some limitations and drawbacks. GFCI index is not connected to economic theories and there is no transparency selection of instrumental variables and indicators. There is no control in filling of questionnaire process; hereafter the validity of responses is in doubt. The GFCI only measures the competitiveness of global financial centre and concentrates on key factors that contribute to the development of international financial centres. Finally, GFCI does not focus on the historical development and background of each financial centre in their model (Wong, 2012, p.100).

Istanbul continues progress and its ranking is 44, increases 13 places in March 2013, and raising 1 place from 2010 to 2011 period. Istanbul has significant increases in its ranking while other centres fall slightly. Istanbul is well supported by respondents located in Middle East/Africa, Asia/Pacific, and North America but lower supported by respondents located in Europe, Latin America and offshore financial centres. On the other hand, GFCI questionnaire asks the respondents which centre they consider are likely to become more significant in the next five years. Istanbul is among ten centres that are considered likely to become more significant. Moreover, Turkey would appear

to have best prospects after Qatar and the UAE (The United Arab Emirates) in Middle East (Long Finance, 2013 and 2011, p.5-7).

4.6.3 KPMG Overall Competitiveness Index

KPMG develops a score model combining the scores of three pillars that are industry opinion, industry performance, and capability measurement to test the overall competitiveness of a financial centre. Industry indicator comes from GFCI index, capability measurement comes from Dubai International Financial Centre capability measurement, finally industry performance comes from World Economic Forum Financial Development Report. Capability factors or immediate benefits are leading indicators, whereas performance factors or historical results are lagging indicators. Financial competitiveness and capability are governed by three factors. These three factors are business environment, cost of doing business, and cost of living. Eighty-one leading indicators are used to evaluate capability measurement of a financial centre. The three scores of each pillar are weighted to offset the effect of indicator of overlaps when the overall competitive assessment score is calculated. The main ranking is based on the overall competitiveness score (KPMG, 2009, p.6-7; p.38-43).

4.6.4 Xinhua-Dow Jones International Financial Centres Development Index

Xinhua-Dow Jones International Financial Development Index (IFCD) is developed by Xinhua News Agency and Chicago Mercantile Exchange Group in 2010. The index measures and values the development of financial markets by considering complex environment of cities, countries, and regions. The system is based on indicator method and subjective method (questionnaire method). Financial market, growth and development, supporting industries, service levels, and general environment are used as evaluation indicators shown in Figure 11 (Park J.H., 2012, p.10-11, Xinhau-Dow Jones, 2012, p.3-4). Index is developed with subjective questionnaire surveys that cover both the objective examination and subjective appraisal over international financial centre. The index covers 45 selected cities and data is collected from third-party international authorities. Index value is calculated after the completion of four level analyses. The first level of analysis is the comprehensive evaluation of each city based on different index scores. The second of analysis is to test the strength and weaknesses of each of

each financial centre by breaking down of IFCD Index. The third level of analysis is to test the impact of regional characteristics on the role of financial centres. The last level of analysis covers the Brazil, Russia, India, China and South Africa (BRICS countries) by reviewing the world's economic development (Xinhau-Dow Jones, 2013, p.4-5;p.33-34). According to IFCD Index in September 2013, Tokyo, Hong Kong, Singapore,

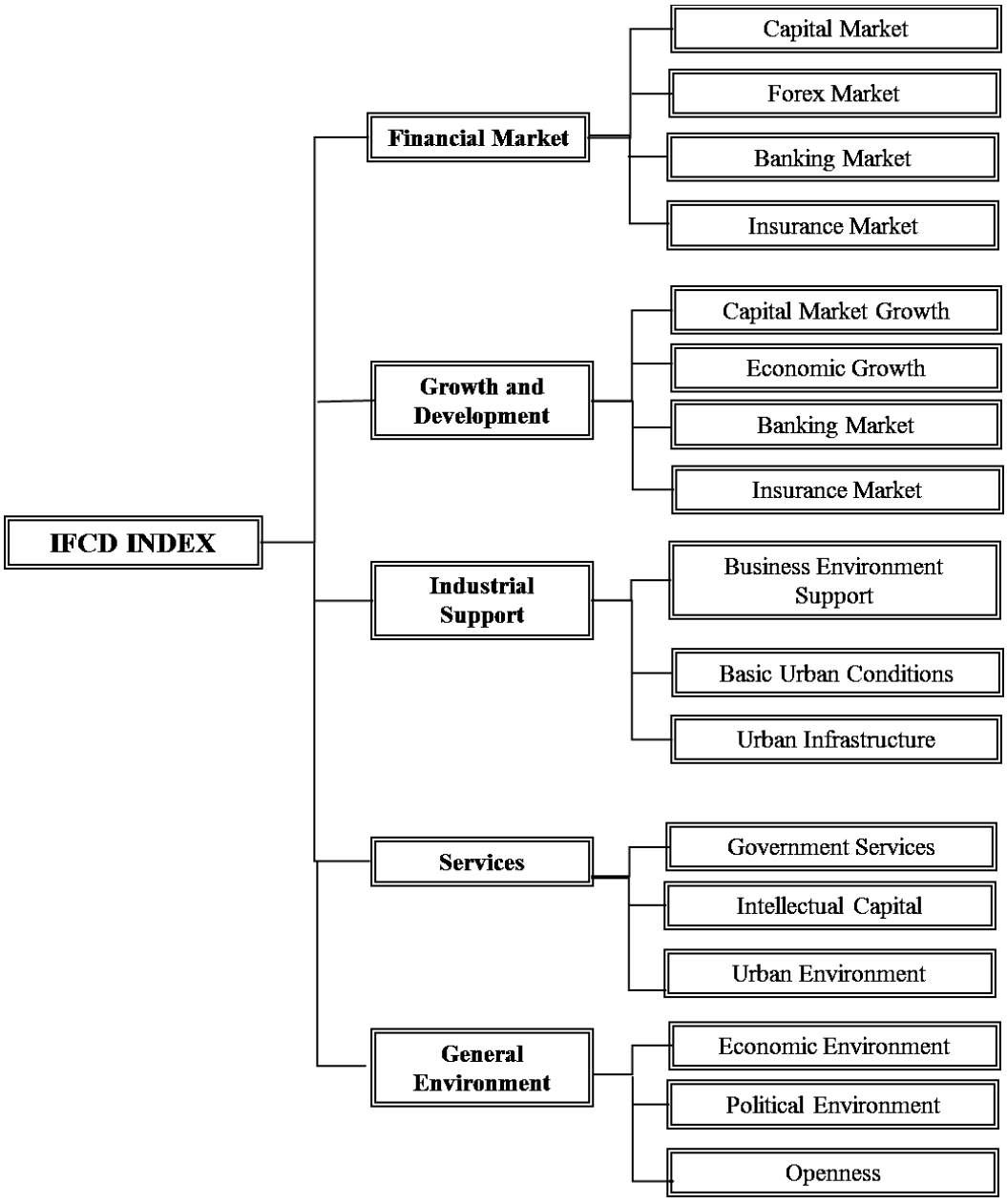

Figure 11: Evaluation Dimension and Indicators of IFCD Index

Source: Park, J.H. (2012). Comparative Study on Asian Financial Capitals' Competitiveness: Focused on Strengths and Weaknesses of The City Of Seoul. Master Thesis. California: University of Southern California. p.19.

Shanghai, Sydney are ranked as the market top 10 in Asia Pacific region based on financial elements.

4.6.5 World Competitiveness Ranking

IMD International Ltd. (IMD) measures the competiveness of nation instead of a city. Ranking covers the 60 economies, which are ranked from most to the least competitive and the results from previous year's scoreboard. The world competitiveness ranking divides the national environment into four main factors shown in Table 17.

Table 17: Sub-factors of the World Competitiveness Ranking

Economic Performance	Government Efficiency	Business Efficiency	Infrastructure
Domestic Economy	Public Finance	Productivity	Basic Infrastructure
International Trade	Fiscal Policy	Labour Market	Technological Infrastructure
International Investment	Institutional Framework	Finance	Scientific Infrastructure
Employment	Business Legislation	Management Practices	Health and Environment
Prices	Societal Framework	Attitudes and Values	Education

Source: IMD. (2014). World Competitiveness Yearbook 2014.

Economic performance, government efficiency, business efficiency and infrastructure and then these main factors are divided into 20 sub-factors, which comprises more than 300 criteria and have the same weight in the consolidated result. Criteria can be hard or soft data. Hard data can be taken from international organisation such as IMF, World Bank, and OECD. Soft data or survey data are collected from top and middle management through assessing questionnaire. IMD ranking provides good indicators to measure competitiveness of the nations. The attributes used in the ranking are not built specifically to analyse the development of international financial centres. IMD ranking is not a forward-looking index thus it does not give the hint about the perceived development of a financial centre (Wong, 2012, p.95-96; IMD, 2014). In Table 18, Turkey's position considering various criteria is given between 2010 and 2014.

Table 18: Turkey's Position in World Competitiveness Ranking

Ranking Criteria	2010	2011	2012	2013	2014
Overall Ranking	48	39	38	37	40
Economic Performance	50	46	34	41	45
Government Efficiency	47	34	39	28	39
Business Efficiency	37	30	30	29	29
Infrastructure	45	44	44	43	46

Source: IMD. (2014). World Competitiveness Yearbook 2014.p.21.

4.7 COMPETITIVENESS OF FINANCIAL CENTRES

Competition between financial centres is not a zero-sum game. Smaller centres can be exist and specialized at niche services. There is a harsh competition between financial centres because policy-maker desire to upgrade regional financial centre to international financial centre. There are several researches to measure competitive advantage of financial centres and to compare each other. These researchers often cover analysis from national statistical basis because of inefficiency of comparable data and unclear geographical concepts.

Financial centres can be ranked according to various criteria and geographers divide the financial centres into three major group: (1) world financial centres such as London, Tokyo, and New York (2) second-tier financial centres such as Paris, Frankfurt, Amsterdam, which are regional (3) sub-centres such as Munich, Geneva, which develop special competencies. Many scholars are interested in the first group. Thrift (1994), Taylor *et al.* (2003), Roberts (2008) are interested in London, whereas Schwartz (1992), Longcore and Rees (1996), Pohl (2004) are interested in New York and Grote (2008), Faulconbridge (2004), König *et al.* (2007) and Schamp (2009) are interested in Frankfurt (Citation from Schulz and Walther, 2010, p.4). Cross-border listing requirements, uniform standards, co-operation, on-going supervision, accounting, and disclosure standards are important for smooth functioning of financial centres.

Linkages between financial centres within time zone can depict the benefits of integration.

The degree of competitiveness of international financial centres is determined by various factors. Some of these factors are human resources, market accessibility, infrastructure, quality of life, regulatory environment, and access to international financial markets (Young *et al*., 2009, p.20). According to Walter, competitiveness among financial centre can be determined by various factors one of which is the high volume of international trade. The country opens to international trade and competitiveness have higher opportunity developing into financial centre. Second factor is GDP growth. Financial services are important inputs in production of national real output; accordingly high-growth economies develop into important financial centres. The third factor is political and economic stability. Strong fiscal and monetary policies sustain low inflation and currency stability and convertibility. The fourth factor is foreign direct investment. Countries with strong foreign direct investment inflows through acquisitions increase the chance of developing into financial centres. The fifth factor is the cost. Comparative cost of financial transactions, labour, and real estate in relation to comparable costs in alternative places is an important point. The sixth factor is labour force. Quality, motivation, and availability of skilled labour are critical in the success of financial centres. The seventh factor is transparency and fairness. The transaction in financial centre should be undertaken in fair and open marketplace. In addition to, the firms should develop the access to clients and market. The eighth factor is net regulatory burden. NRB is important factor in the determining the competitiveness of the firms in the global financial services industry. The firms agglomerate in the place where NRBs are lower (Walter, 1993, p.82-84).

According to Budd competition and complementarity between financial centres depends on the concepts of competitive advantage and territorial competition. The competition between financial centres come untied the connection between the financial institutions and their location because of the effects of financial globalisation and technological development. The competition between financial centres is a battle for economic gains in the global economy. The competition takes various forms (Budd,

1995, p.345-360). Kerr (1965) uses four factors in order to identify the importance of financial centre. These measures are employment in financial sector relative to total employment, assets of financial institutions, the ratio of check cashed, the turnover of stock exchange.

Reed, H. selects 20 centres and classifies these centres based on sixteen variables using cluster analysis. He finds out that there are only five upper tier international financial centres, which are termed world financial centres, such as London, Frankfurt, New York, Tokyo, and Paris. Brussels, Amsterdam, Zurich, Toronto, and Milan are termed swing group that appears as definitional IFCs. The ten lower tier IFCs have underdeveloped money market infrastructures, considerable discrimination against foreign banks, less foreign lending and deposit activities and smaller amounts of foreign trade (Reed, H. 1977, p.12; p.16; p.180). The hierarchical rank among financial centres can be determined by the following factors: high volume of international trade, stable and strong currency, high levels of international reserves, and the number of large and active banking institutions (Reed, H., 1977, p.16).

A more systematic approach of classification is developed by Reed, H in his study of organisational structure of IFCs and of requirements for development. He collects nine financial and banking variables for 76 cities and uses discriminant analysis to identify those variables, which are significant for distinguishing and to rank them. His research method provides insight into the importance of international financial linkages. The other study made by Reed, H. on the rise of Tokyo, he examines the evolution and development of seventeen Asian IFCs in 10 countries from 1900 to 1975 (a period of 76 years). A cluster analysis is used to determine what factors rank the centres. Besides cluster analysis, additionally multiple discriminant analysis is used to test the adequacy of the group structure. Nine banking variables listed in the Table 19 are used. According to Reed's findings, Tokyo is the Asia's preeminent banking centre in 1960 and preeminent financial centre in 1965. Tokyo, which is capable of providing a wide range of financial services and products, is the international financial centres of first order; Osaka, Hong Kong, and Singapore are second order. The status of second

order of financial centres is determined by their relation with international centre of the first order (Reed, H., 1980, p.19, p.24, p.26).

Table 19: Reed's Study-Banking and Financial Variables

Banking Variables	Description
Local Bank Headquarters	Large internationally active commercial banks headquartered in the international financial centre
Local Bank Direct Links	Foreign international financial centres with direct links to the international financial centre through the large internationally active local banks headquartered in the international financial centre
Private Bank	Private (merchant or investment) banks with an office in the international financial centre
Foreign Bank Office	Large internationally active foreign commercial banks with an office in the international financial centre
Foreign Bank Direct Links	Foreign international financial centres with direct links to the international financial centre through the large internationally active foreign banks with an office in the financial international centre
Foreign Financial Assets	The total amount of foreign financial assets of the international financial centre
Foreign Financial Liabilities	The total amount of foreign financial liabilities held in the international financial centre
Local Bank Representative/Branch Direct Links	Foreign international financial centres with direct links (that is, branches and representative offices) to the international financial centre through local banks
Foreign Bank Representative Office	Large internationally active foreign commercial banks with branches or representative offices in the international financial centre

Source: Reed, H.C.(1980). The Ascent of Tokyo as an International Financial Centre. Journal of International Business Studies.11.3, p.25.

In the next research, Reed, H. (1989) extends his dataset to 16 variables of which the most significant variables are the amount of international currency clearings, the size of Eurocurrency markets, the amount of large international commercial banks and foreign financial assets. Afterwards, he classifies 25 IFCs into supranational centres (New York and London), international centres (Amsterdam, Frankfurt, Paris, and Tokyo), and host centres (Hong Kong and Singapore). On the other hand, Abraham *et al.* (1994) apply the same methodology to Reed on his study of competitiveness and magnitude of the activities of European international financial centres; nevertheless, they use factor analysis to rank financial centres using data for 1990. The first study covers London, Paris, Frankfurt, Luxembourg, Zurich, and Brussels then they analyse the position of Amsterdam, Copenhagen, Madrid, Milan, and Brussels. They use a list of 47 characteristics of financial centres, which are categorised into factors of production (foreign direct investment), man-made environment (bank secrecy), regulatory framework (organisation of stock exchanges), and fiscal regulation (tax rates). In their study, nine financial and explanatory variables are used. Abraham *et al.* find that three sets of factors that are openness to abroad, internalisation via domestic banks, and representative presence of foreign banks determine the position that is success or failure of medium sized financial centre. London is at top for openness to abroad, followed by Hong Kong. Tokyo is at top for internalisation via domestic banks. They also categorize the financial centres into three environments: productivity, artificial enviromental, and regulation. Productivity factors cover accumulation of capital, human resource quality, geographical location, transportation, and communication quality, number of financial institutions or entrepreneurs. Artificial environmental factors involve a system of controlling macro economy and finance, technology, financial markets and innovation. Finally, regulatory system covers various rules and financial regulation on foreign exchanges or stock exchanges (Citation from Liu and Strange, 1997, 651-661).

Goldberg, Helsley and Levi (1994) test the competitiveness of financial centres with strength of international financial services industry. They depict that the growth of international financial services industry is determined by international trade, international financial intermediation, and industrial organization factors. These factors

correlate with strength of IFC (Citation from Goldberg, E., 2008, p.48). Goldberg also compares Hong Kong and Shanghai using fourteen factors and aims to predict the financial performance of these financial centre performances by using a model by the City of London. He uses a Spearman Ranking test to depict the correlation between financial centres overtime. The main finding is that Shanghai will be an IFC if China continuous to liberalize its financial system and its economic policies and Shanghai improves its infrastructure (Goldberg, E., 2008, p.1-90). Afterwards, Porteous (1995) adds Kerrs's approach another four factors that are number of merging firms, volume of telecommunications, and presence of foreign banks and head offices of large multinational non-financial corporations. He creates Financial Centre Index (FINDEX) to measure the significance of financial activities and relative importance of financial centre at city level based on factors. Those factors are employment in financial centre, national bank loans, national bank clearings, percentage of total bank assets, percentage of total value of stock exchanges, number of foreign banks and financial institutions (Citation from Zhao, Zhang and Wang, 2004, p.588-589; Wang, Zhao and Wang, 2007, p.114-117).

Liu and Strange rank 12 IFCs, that are Bangkok, Hong Kong, Jakarta, Kuala Lumpur, Manila, Seoul, Shanghai, Singapore, Sydney, Taipei, Tokyo and Wellington, in Asia-Pacific Region with data for 1994. They use two statistical techniques, hierarchical cluster analysis, and principal component analysis, to generate three explanatory factors that are internalisation (international integration), openness to foreign banking, and creditworthiness. They provide guidance in how each of major IFCs may improve their status in the future. Twelve explanatory variables shown in Table 20 are used by Liu and Strange (Liu and Strange, 1997, p. 658-660; Bindemann, 1999, p.26-36; Tschoegl, 2000, p.7).

Beaverstock, Taylor, and Smith investigate 122 cities and 55 centres. They classify cities under the titles of alpha, beta and gamma cities by taking consideration into accounting, legal procedures, and recognition data. Alpha cities are graded 10 and over, beta cities are graded between 7-9, gamma cities are graded between 4-6. Istanbul

is rated with 4 and classified as gamma cities (Beaverstock *et al*., 2000, p.43-63; Kayral and Karan, 2012, p.6).

Table 20: Variables of Liu and Strange's Study

Variables	Purpose
Foreign financial assets of domestic deposit banks in the centre	It indicates the performance of the domestic deposit banks but also the wealth of the IFC.
Foreign financial liabilities of domestic deposit banks in the centre	It indicates the creditability and accountability of the centre.
The number of large internationally active banks headquartered in the centre	It indicates the bank concentration in a centre.
The number of large internationally active foreign banks with offices in the centre	It indicates a centre's financial and economic power.
The number of domestic banks ranked in the world top 1000	It indicates IFCs capabilities to participate in international financial activities.
The total amount of international bonds issued in domestic currency	It indicates the capability of an IFC for raising capital and the reputation of the currency in world financial markets.
Total value of shares traded in the centre's stock exchange	It is a measure of the scale and performance of the stock market, and an indicator of the country's industrialization and capitalisation.
Market capitalisation in the centre's stock exchange	It is a measure of the scale and performance of the stock market.
The number of domestic companies listed on the centre's stock exchange	It is a measure of size of stock market.
Foreign exchange reserves of the country	It is an indicator of liquidity and creditworthiness of an IFC.
Exports of the country	International trade is linked with international financial activities.
Imports of the country	International trade is linked with international financial activities.

Source: Liu, Y. and R. Strange (1997). An Empirical Ranking of International Financial Centres in the Asia-Pacific Region. International Executive. 39.5, p. 658-659.

Dietl *et al*. (1999)'s indicators listed in Table 21 cover financial centres' functions and explain the dynamics of competition which result from institutional changes. Bindemann (1997) conducts empirical research in several financial centres and develops a set of criteria specified by respondents that helps choosing a financial place. The criteria shown in Table 21 are categorized as follows: factors of production, man-made development, regulatory framework, and fiscal regulation (Citation from Kruse, 2003, p.7-9).

Table 21: Criteria for Competition Analysis of Financial Centres-Bindemann and Dietl *et al.* Study

Indicators of Dietl *et al.* Study (1999)	**Indicators of Bindemann Study (1997)**
• Listing requirements • Size of markets and liquidity • Stock exchange settlement system • Regulation • Regulation of takeovers • Human capital • Tax system • Life quality • Information and communication technology • Legal form of stock listed companies • Insider regulation • Price manipulation restrictions • Stock exchange trading system • Currency • Reputation • Pension system • Economic stability	• Diversity / size of markets • Volume of transactions • Settlement of transactions • Fiscal regulation • Market regulation • Human resources • Commissions • Bank secrecy • Circulation of information • Presence of international banks • Diversity of financial products • Financial tradition • Automatic continuous system for transactions • Strength of currency • Political stability • Infrastructure • Economic growth of host country • Independence of central bank • Operation costs • Availability of capital • Innovation • Banking sector • Language

Source: Kruse, C.(2003). When Form Follows Function-Financial Centres as Starting Points for Researching the Interrelationship Between Financial Intermediaries and Management Firms. ERSA Conference. Jyvaskyla, p.8.

Jin analyses the competitiveness of Singapore financial services sector and he applies a two-tier test. In the first-tier of his study, capital resource and human resource

category is tested. Furthermore, capital resource category is subdivided into two categories, which are the quality of basic infrastructure in the country and the level of technology. The factors in the first tier can be easily reached with right policies and resources. On the other hand, second-tier factors are advanced factors, which are regulatory regime and natural characteristics. Natural characteristics can be changed and are the features of the economy such as small domestic market. These factors are required to become a key player in the market or in financial cluster (Jin, 2003, p.1-28).

Zhao, Zhang and Wang test the strength and weaknesses of Beijing and Shanghai by using the similar approach with Porteous. The higher FINDEX value indicates the higher financial status of the city. The Financial Centre Index (FINDEX) is constructed for Beijing and Shanghai in order to show the relative importance of Beijing and Shanghai in 1990's. Beijing is continuing its leading position as national largest financial centre and Beijing is ranked as number one in financial competitiveness. Whereas, Chinese government makes an excessive effort for Shanghai being promoted as China's first ranking financial centre. The analysis tells that the full story is not explained by the single indicator (Zhao, Zhang and Wang, 2004, p.588-589).

Faulconbridge analyses Europe's financial centre network by taking London and Frankfurt as an example. Complementary functions and interdependence of financial centres are highly emphasised rather than placing the centres in a hierarchical network according to their attributes for instance financial turnover. London and Frankfurt form a network other than hierarchy, nonetheless Frankfurt cannot be a London because of global connectivity, denationalized and offshore structure, and flexible regulation, presence of skilled workforce and capability of financial services to provide (Faulconbridge, 2004, p.235-244). Cheung and Yeung explore the determinants and relative ranking of various financial variables or indicators across IFCs and a concentration index of different financial activities is developed. The size of different IFCs are compared by using six different factors: turnover of stock market, turnover of foreign exchange market, turnover of derivatives market, size of bond markets, funds raised by IPOs in the stock market, size of banking sector measured by bank assets and liabilities. The study is constructed for 25 OECD countries including Singapore, Hong

Kong, and Shanghai. Three alternative measures, that are invert international investment position, export of financial services, and inward direct investment in financial sector, are constructed to evaluate the importance of Hong Kong as an IFC relative to the other major economies. The comparison using the USA as a benchmark is made at country level due to the limitation of data availability. The first finding is that the importance of an economy's position as an IFC enlarges with its share in financial market activities in the world. The second finding is that Hong Kong is one of the leading centre for inward financial sector direct investment and export of financial services (Cheung and Yeung, 2007, p.1-8).

Du, Xia and Wei apply non-equilibrium statistical method to analyse the development of Shanghai International Financial Centre. They select 19 factors and divide into three categories. The first category is the subject of financial centre, which covers employees in financial sector, saving deposit balance of financial institutions, saving deposit balance of foreign funded financial institutions. The second category is the object of financial centre of which covers turnover of securities, renminbi transaction in interbank market, turnover of future, turnover of Shanghai gold exchange, cash income of banks, premiums income. The third category is environment of financial centre of which covers resident of population, GDP, value-added of tertiary industry, total value of imports and exports, utilized foreign capital, infrastructure investments, total expenditure on science and technology, average compensation of employees, volume of freight handled in ports, legal professional qualification obtain by law firms. The empirical results show that the overall economic development of Shanghai should be sustained by developing financial market, especially, especially gold, futures and securities market (Du, Xia and Wei, 2012, p.703-710).

Kayral and Karan analyse 57 financial centres with different significance degree in order to detect the factors that influence being in the first 20% group of financial centres, logistic regression is applied. In order to determine ranking GFCI value as dependent variable is used. They find a positive and significant relation between the labour force participation rate and being in the first 20% group of financial centres. In addition to that, there is a positive and significant relation between strength

of legal rights and environment and being in the in the first 20% group of financial centres (Kayral and Karan, 2012, p.217-238).

4.8 DETERMINANTS OF SUCCESSFUL INTERNATIONAL FINANCIAL CENTRES

In the light of previous researches findings, the success factors could be categorised in three main headings that are macroeconomic, institutional that is microeconomic business environment and financial sector prerequisites, including intrinsic factors such as time zone, geography and underlying size of the market, cost and ease of doing (Barton, 2009, p.4). The successful financial centres contribute to real economic gains of the nations.

Nadler *et al.* (1955) emphasise the seven factors that are the prerequisite for a successful IFC. First, the currency system of the country should be sound and stable. Second, there must be constant and substantial demand for and supply of country's currency. Third, the balance of payment account must be adjusted in order to prevent sudden shifts in the demand and supply of country's currency. Fourth, the centre has domestic financial institutions that have capable of processing international financial transactions. Fifth, foreign institution's domicile branches or agencies must not be imposed on legal discriminations and restrictions in other words, country's financial system should be liberal. Sixth, there must be specialized financial institution that process foreign financial transactions in the commercial banking system. Seventh, the centre is the domicile of the principle office of host country's central bank. Wasserman agrees with Nadler's list but he emphasises on the centre abilities to supply the world investment capital, having its principal currency held by reserve currency, having well-developed foreign exchange, money, and capital markets. On the other hand, Kindleberger gives great importance to number, size, and international sophistication, capital formation, and expertise of local banks for building up reputation of an IFC. The variables that are particularly important for the development and sustainability of IFCs are used by Kindleberger, Nadler, Wasserman, and other scholars summarized in Table 22 (Citation from Goldberg, E., 2008, p.46; Liu and Strange, 1997, p.653; Park Y.C., Ito and Wang, 2005, p.14; Reed, H., 1977, p.18-19).

Table 22: Variables Used by Various Scholars for Development and Sustainability of International Financial Centres

Variables	All Literature	Kindleberger	Nadler	Wasserman
Merchandise exports	☑			
Service exports	☑			
Merchandise imports	☑			
Service imports	☑			
International reserves			☑	
Total foreign trade	☑			
Capital formation		☑		
Foreign assets of deposit money banks	☑			
Foreign liabilities of deposit money banks	☑			
Large deposit money banks	☑			
Discrimination against foreign banks			☑	
International capital markets		☑		☑
Money market infrastructure	☑			☑
Capital market infrastructure	☑			
Inflation				
Currency strength	☑		☑	

Source: Reed, H.C.(1977). Economic Measures of International Financial Centres: A Cluster and Discriminant Analysis with Special Reference to Tokyo. PhD Thesis. Washington: University of Washington.p.21.

Vernon (1960) emphasises the derived demand for financial intermediation obtained by international trade production and investment creating surplus funds and borrowing needs, whereas Giddy (1983) points out transferability of IFC funds, free movements of banks and availability of net regulatory burden differences that are

essential in a well-developed IFC (Citation from Park Y.C., Ito and Wang, 2005, p.14-15).

Tan and Vertinsky analyse the conditions and circumstances under which alternative strategies an IFC is feasible and effective. They find out the following results: (1) an aggressive policy requires a flexible and centralised financial system; (2) product innovation and sensitive adjustment to changing market environments are the important conditions for the success of pro-active strategies; (3) marginal modification of supply advantages may shift the distribution of financial transaction within the national economy and affect the national pace of growth of international financial activities (Tan and Vertinsky, 1987).

According to Laurenceson and Kamalakanthan, three categories shown in Figure 12 that are macroeconomic environment, microeconomic business environment, and financial sector efficiency affect the development of IFCs (Laurenceson and Kamalakanthan, 2004, p.18).

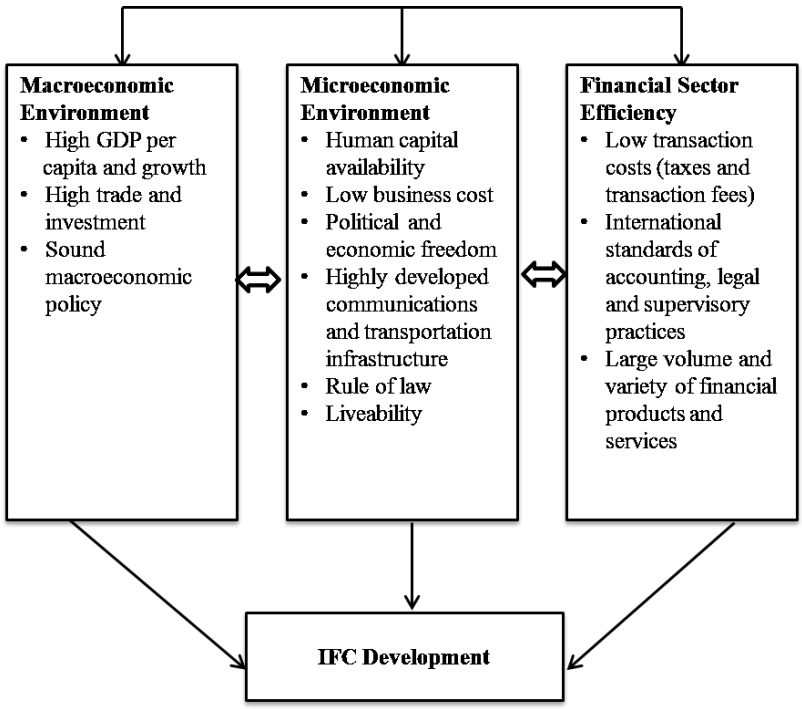

Figure 12: A model of IFC Development

Source: Laurenceson, J. and A. Kamalakanthan (19-20 July 2004). Emerging Financial Centres in Asia: A Comparative Analysis of Mumbai and Shanghai. 16th Annual Conference of the Association for Chinese Economic Studies (Australia). Brisbane ,p.18.

Essayyad emphasises availability of a developed financial infrastructure such as telecommunication, air transportation, expertise in international banking, finance, accounting, the structure of the centres' banking market as prerequisites for a successful IFC (Park Y.S. and Essayyad, 1989). The criteria shown in Figure 13 summarize macroeconomic, institutional, and human capital, and financial sector prerequisites, which are required for international financial centres and financial services (Furstenberg, 2007, p.5).

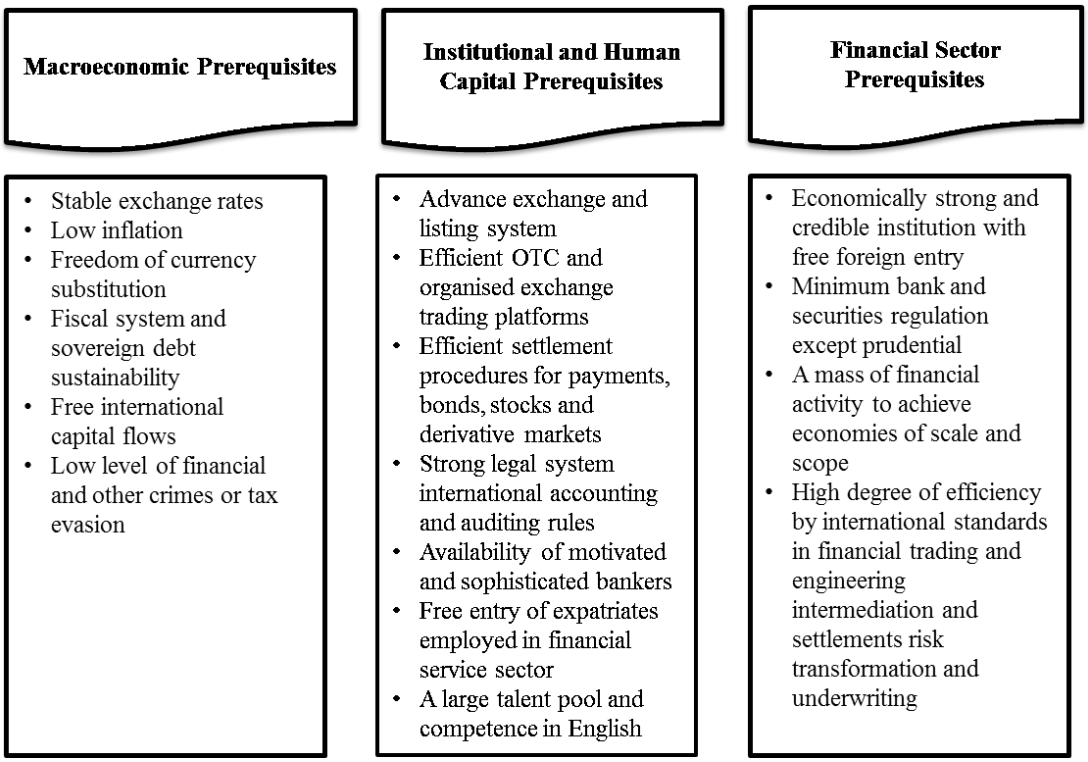

Figure 13: Requirements for Successful IFCs

Source: Furstenberg, G. (2007). Assessing the Competitiveness of International Financial Services in Particular Locations: A Survey Methods Perspectives. Centre for Applied, p.5.

Le Porta *et al*. (1997) emphasise that the legal system is key success factor in successful financial development. Kim (1999) classifies the decisive factors into four classes: political and economic, financial, infrastructure and regulation (Citation from Park J.H., 2012, p.8-9). Lee (2003) highlights human resource, language, diversity and scale of the market, diversity financial commodities, political stability, transportation, and communication and financial prudence for the success of IFCs (Citation from Park J.H., 2012, p.9).

Finally, an IFC must have good reputation for liquidity and creditworthiness so as to providing confidence that is essential for the successful financial institutions and markets. Liquidity enables to decrease transaction costs and rapid execution of large orders. The creditworthiness of country is essential for high liquidity. The main determinants for liquidity and creditworthiness are political and social stability, foreign exchange reserve, stability of exchange rates.

4.9 THE IMPACT OF INTERNATIONAL FINANCIAL CENTRES ON THE ECONOMY

All international financial centres stimulate economic development and social progress. The financial development enhances economic growth by effective diversification of risk and allocation of capital. Well-diversified and competitive financial system is necessary for long-term economic development. On the other hand, the risks in the economy are perfectly distributed among the various sub-sectors. The goal of national government and financial authority should develop a competitive, sustainable, and dynamic financial system with best practices. A successful capital varies economic effects on the regional economy. An advanced financial system enables the flow of funds between financial institutions and companies that result in enhancing the economy.

On the other hand, IFCs contribute local and regional economies. IFCs encourage mobilisation and allocation of savings and enable regional and international integration of financial markets, which have positive effects on the host's country economic growth. The local financial system becomes more efficient and full-bodied. Especially for the country having scarce capital, typical developing country, an IFC can be ancillary until the development of host country's domestic financial market. Location of an international financial centre in a developing country stimulates the growth of modern financial infrastructure. The presence of many international finance professionals in the centre enhances the financial skills of local financial institutions, as a result more efficient and higher-quality service to their domestic clients as well. The domestic banking and financial industries are modernized because of the transfer of sophisticated international finance techniques and experience. Latest techniques of risk

management can be more easily transferred to local markets through IFCs. On the other hand, the establishment of IFCs encourages the development of ancillary sectors such as software, legal, consultancy, accounting, telecommunication sectors (Park Y.S, 2011, p.6-7).

Schumpeter (1911) is the first scientist to emphasise the importance of financial development as a contributing factor of economic growth. Levine (2004) reviews the empirical evidences on financial development and economic growth. He finds that the financial development is the good estimator of future rates of economic growth, capital accumulation, and technological change (Citation from Palmberg, 2012, p.5-6). With IFC, without substantial investment in high-fixed cost plant and equipment many countries create the high value added. Small investments in fixed capitals in IFCs are offset by large investment in human capital, unfortunately human capital is highly mobile (Kaufman, 2000, p.3).

The financial centres generate real economic gains for their national economies in the form of increased employment and income, higher capital and labour productivity. At the same time, economic growth and fiscal contributions are enhanced. IFC encourages foreign investment in host country either in form of joint ventures or other direct investments. Valuable information on finance and commerce comes from outside the host country. Hence, foreign investment and flow of valuable information stimulates the internalization of the host economy (Park Y.C., Ito and Wang, 2005, p.5-6). A financial centre with advanced regulatory system and business environment attracts globally competitive companies afterwards financial system of the region is upgraded and financial institutions and companies become more competitive.

Johnson (1976), McCarthy (1979), Hodjera (1978)‘s main focus are the benefit of the host economy across real income and tax revenue. Hodjera (1978) finds that the Asian Currency Market to Singapore’s economy attributed about 1 percent of country’s GDP. Johnson (1976) and McCarthy (1979) find the limited impact of international centres on the economy (Citation from Choi, 1984, p.41). Hines (1995) points out that the real per capita incomes of IFCs grew by 3.3 percent since 1982. Standard economic theory indicates that the greater income earned by one part of the economy redounds to

the benefit of all other parts of the economy. The high rate of IFC economic growth has the effect of sustaining the world economy. Conversely, a small growth in elsewhere depresses the economic activity in IFC economies (Hines, 2009, p.35). Jianhui and Huanmin (2006) investigate the financial innovation, risk mitigation, and operating efficiency advantage of financial cluster that stimulate regional economic development. Hong (2008) states that through financial aggregation, the higher rate of growth are attained in the core area of financial cluster, on the other hand, the neighbourhood area can also take advantages of those by means of encouraging technical progress, increasing capital accumulation, promoting transformation from savings to investment. Dalei (2010) proofs that total industrial output value, financial employees, and gross domestic product can stimulates the formation of financial cluster. Yi (2010) affirms that the interactive relationship between financial industry cluster and regional economic growth in long term and also finds that banking industry cluster has higher elastic coefficient to economic development (Citation from Zhang and Chen, 2013, p.70).

On the contrary, the effect of financial industry agglomeration is high centralisation of financial resources in some developed cities. The effect of financial agglomeration on economic growth can be divided into two sections, one is the growth effect in core area, and other is the radiation effect in marginal zone. The finding of Zhang and Chen's study for Beijing depicts that financial industry cluster does not have growth effect on local economy growth and does not have radiation effect on neighbourhood economy growth. Shanghai's financial cluster has growth effect, but does not have radiation effect in surrounding areas. Shenzhen's financial cluster has growth effect and radiation effect in surrounding areas (Zhang and Chen, 2013, p.76).

The global financial crises in 2000s put forth gigantic negative effects on the real economy and depicts the inadequacy of the regulatory framework in financial sector on the other hand crisis had enormous native effects on the real economy. The weight of the financial centres in developed countries' economies and the consequences of the 2007-2010 crises are very significant. Principally, London, New York and Dublin have seen a drastic drop in hiring and employment in the financial industry. On the

other hand, tax heaven financial centres, such as Luxembourg and Cayman Islands, hit because the reduction in international volumes and the expectation of stricter regulations. Conversely, the financial crisis contributes to the reshaping of the financial geography. A large bundle of activities named as toxic assets, which causes the crisis, is created by financial companies in financial centres.

In the USA, financial deregulation allows the emergence of a shadow banking system with investment banks (such as Bear Stearns, Goldman Sachs, Lehman Brothers, Merrill Lynch, and Morgan Stanley). The investment banks are major buyers of mortgages and asset-backed securities from mortgage originators and other banks; inventors of collateralised debt obligations (CDOs) and credit default swaps (CDS). They were also major sellers of CDOs to institutional investors around the world and major investors in these assets. All of the key investment banks involved are headquartered in New York with major offices and operations in London (Wojcik, 2013, p.7).

Financial institutions collapse, merge, or bring out on national level. The governments initiate rescue packages in order to bail out the banking sector. In financial centres, counter party credit risk spread quickly. The traditional financial centres in USA and Europe retain their dominance. On the other hand, key segments of the markets decline temporarily besides market participants disappear from the market place. Policymakers try to regulate market and to make reform in order to sustain the financial markets. All of these aspects influence the competitiveness of financial centres. On the contrary, the financial crisis highlight the interrelated of financial markets across national and regional boundaries. Many market participants cut back their foreign operations and cross-border transactions due to reducing risk exposure. They chose more safer and familiar territories for lending and funding.

The global financial crisis and debt crisis cause many banks in advanced economies to weaken. On the other hand, in emerging markets many banks have jumped class in the global size rankings. Commercial Bank of China (ICBC) is the world's biggest bank in terms of market value and banks from China, Brazil, and Russia are among the top 25 banks (WEF, 2012, p.9). The Economists seriously think about

financial centres. Financial deregulation at the root of the crisis is led by the USA and the UK. The ending of Glass Steagall Act allows deposit-taking banks to develop investment-banking business. Moreover, the Commodity Futures Modernization Act of 2000 left derivatives and OTC markets unregulated in the USA (Wojcik, 2013, p.7).

Kaminsky and Reinhart test how financial turbulence in emerging market countries can spread across borders. A financial turmoil can be transferred from one periphery country to another via a financial centre country. Wall Street could be carrier of Russian viruses in 1998 because of asymmetric information and liquidity problems in the financial centres. When Russia that represents a periphery country defaults on its bonds, the investors hold those bonds in the centre country such as in New York faces margin calls and is required to increase liquidity. Schmukler and Frankel (1998) also find that the crisis in Mexico in 1994 expended into other markets in Latin America through New York. Kaminsky and Reinhart (2000 and 2001) concentrate on the role of commercial banks lenders in the centre country. They emphasise that following the initial losses due to a crisis in a periphery country, banks must rebalance the overall risk of their asset portfolio, and centre banks deepen the original crisis by calling loans and drying up credit lines to the crisis country. By recalling loans elsewhere, they spread the crisis to other countries. The debt crisis in the early 1980s and the Asian crisis in 1997 are two clear examples of the result of this mechanism. On the other hand, there is the transmission of symmetric shocks from centre to periphery. A good example of this situation is that a change in US interest rates affects capital flows to Latin America in the beginning of 1990s. Other examples are changes in interest rates in financial centre country and regulatory changes in financial centres. Kaminsky and Reinhart also find that financial centres are at the core of "systemic" problems (Kaminsky and Reinhart, 2003, p.3-4).

According to Clark and Wojcik (2003), financial centres play an important role in herd behaviour that stimulates financial crisis. On the other hand, Lang explores the attractiveness of financial centres and the empirical evidence shows that the assessment of the attractiveness of financial centres varies significantly over time. He analyses the relation between the location factors and the quality of micro business environment over

time. The locational attractiveness of financial centres before, during, and after the financial crisis is tested. The empirical results show that government support strongly determines the attractiveness of financial centre for financial institutions whereas taxation and a specialised pool of labour are statistically less significant. Location factors are persistent. If domestic market is strong, financial centre is strong during crises in contrast to offshore financial centres. On the other hand, investment fund companies price the attractiveness of financial centre more than banks and insurance companies. Countries most attractive before the crisis recapture their position after crisis .Consequently; the countries with high financial exports such as London and Luxemburg and with very specialized financial centres have competitive advantage (Lang, 2012, p.1-37).

Wojcik investigates the role of New York London in global financial crisis. The term of New York and London axis is used due to the relation and connectivity between the two global centres, London and New York. The crisis originates in this axis so these centres are the main place for shadow banking, irrational enthusiasm in housing markets and financial deregulation. Existing reform plan of global financial system consider little attention for the role of financial centres and no perception of London-New York connection (Wojcik, 2013, p.2736-2752).

4.10 THE IMPACT OF BANKING ON INTERNATIONAL FINANCIAL CENTRES

Financial centre are a place in which the banking sector is well developed and attracts foreign banks because external economies of agglomeration. Banking and financial centres performs a medium of exchange function and store of value function for investors and savers. The banking sector in financial centre is well developed, additionally attracts foreign banks due to stable legal and regulatory environment, adequate infrastructure for physical and electronic communications. Banks located in financial centres create linkages across space, with their headquarters, with foreign offices abroad.

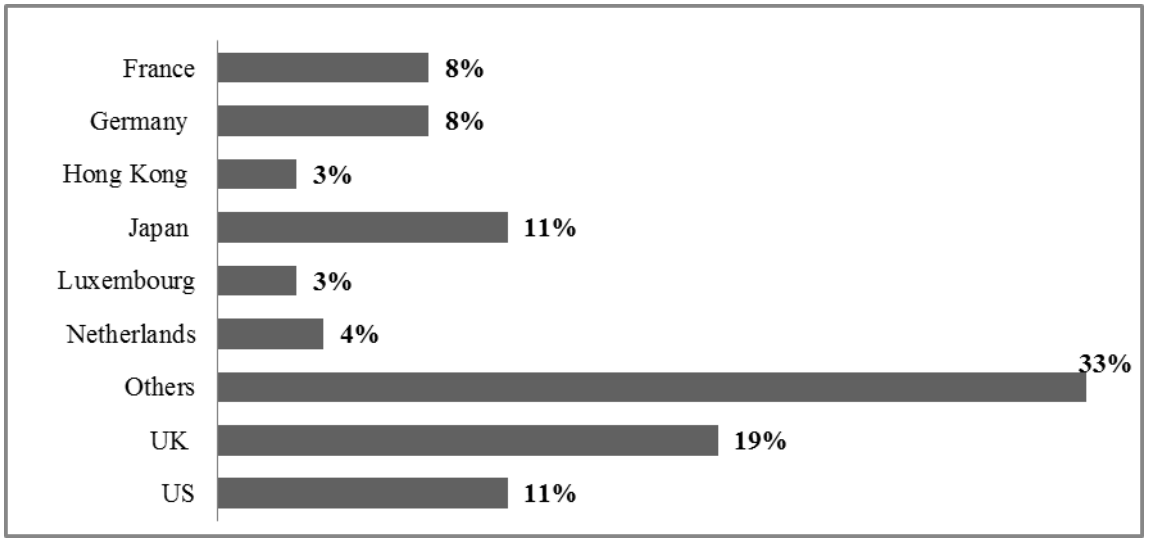

Chart 18: International Bank Lending (September 2012)

Source: The City of London. (2013). Key Facts about the UK as an International Financial Centre. UK. p.7.

Two thirds of global banking assets are in financial centres, especially in the US and Europe (Deutsche Bank, 2010, p.2). Chart 18 shows that the UK is the largest centre for cross-border banking with 19% of the outstanding value lending in September 2012. New York, Paris, and Frankfurt follow the UK (The City of London, 2013, p.7).

The question is why banks cluster in a specific region or centres. There are two possible answers. The first answer is simple, banks go where the business and financial activities are, for the reason each bank is located in a centre so it is profitable. The second answer is the banks go, where there are other banks hence the other banks operate. The banks react to each other (Tschoegl, 2000, p.15). Banks and other financial institutions develop IFCs to benefit from economies of scale and to reduce search costs in their global operations. When foreign banks come into a specific financial centre, functions of this specific centre improve in terms of both prices and range of services and all enhance economic growth in the region the centre serves (Tschoegl, 2000, p.21). The development of financial centres is interconnected with evolution of banks and banking. Banks from foreign countries set up their offices in a financial centre. Choi, Tschoegl and Yu (1986), Kindleberger (1973) and Reed, H. (1980) emphasise the importance of international banking links. International economic links can be measured by the country's import and export performance, and by the amounts of inward and

outward investment. International banking links measured by the amount of foreign financial assets held in a IFC, the number of large foreign banks with offices located in a IFC, and the number of large internationally active domestic banks.

Stuart (1995) points out that a bank enters the centre to increase the number of competitors for the existing market and the total size of the market (Citation from Choi, Tschoegl and Yu, 1986, p.53). According to Gehrig findings, international banking networks corporations supply additional services to existing customers such as increased mobility and improved information and banks can improve their services by networking, they may increase the price pressure on local banks so they can offer lower quality services (Gehrig, 1998, p.405). Multinational banks take into consideration financial centre as the place in which they can interact with other banks (Curi and Lozano-Vivas, 2013, p.96). The level of banking activity is important for IFC's capital formation and trading activity nonetheless a strong and vivid domestic economy offer most of the financial resources, which banks employ internationally (Reed, H., 1977, p.93). Banks from foreign countries set up their offices in a financial centre to participate in broad range of international banking activities and to trade in the financial markets. The linkages between banks are regarded as a network that consists of a set of nodes connected by these links. Each node represents a banking centre in which the set of banks are located in particular country or jurisdiction (Peter, 2007, p.35). Local banks benefit from foreign banks through transferring knowledge. They increase business efficiency, and productivity (Choi, 1984, p.43). Agglomeration of banks facilitates the emergence of activities that are related to foreign exchange, money market trading, deposit taking, lending, syndicated loans, management of Eurobond issues and derivatives (Gulamhussen, 2007, p.508).

Fattouh (2000) debates that the banks located in a financial centre enable to access the financial markets in the centre and gain from the various externalities such as more liquid money markets, highly competent employees generated by the centre (Citation from Choi, Park and Tschoegl, 2002, p.4). An increase in bank asset affects the importance of financial centre as clearing market for interbank transactions and as a major source of funds in the region in which the financial centre locates (Sagaram and

Wickramanayake, 2005, p.43). If the banks launch innovative financial products such as syndicated loans, Eurobonds, portfolio management and derivatives, they accumulate reputation. Size acts as an important indicator for clients that want to buy these sophisticated products at financial centres. Ursacki and Vertinsky (1992) find out a positive relation between capitalisation ratio (capital to asset) and scale of foreign banks offices in Tokyo. Brealey and Kaplanis (1996) could not clarify the abnormal scale of foreign bank in financial centre on the level of trade, foreign investment, and market size of financial centre. The unclarified issue is that why banks set up large operations in financial centres (Citation from Gulamhussen, 2007, p.510).

Kindleberger argues the importance of the banking in the development process of financial centres. Kindleberger purports staple theory of finance to explain the evolution and impact of banking on the size and shape of financial flows. The theory states that banking serves the needs of the nobles and sovereigns and develops in connection with commerce. Geographical configuration of banking is linked to commerce. At a central place, the specialized functions of international payments and foreign lending and borrowing can be easily performed. The lending and borrowing activities start locally then extend to the national centres and finally become international. The banks develop their roles as intermediaries in insurance, mortgages, consumer finance, and factoring. Today's literature also supports the importance that Kindleberger attributes to banking (Kindleberger, 1973, p.6-13; Reed, H., 1977, p.8).

Crocco, Calvente, and Castro (2006) work on the role of financial system and liquidity preferences in the construction of region centrality, which plays an important role in banks' location decision. The banks will centralise in the areas in which the companies are hunger for liquidity or financial needs (Citation from Wong, 2012, p. 79). Schenk and Cochrane provide the understanding why the banks decide to agglomerate to the city. Schenk emphasises the importance of local banks in the development Hong Kong as an international financial centre after 1945. Local institutions are crucial to the operation of international banking activity. The dominance of local banks in foreign exchange market due to exclusion of larger banks (including branches of foreign banks) from direct access to this market creates an important link

between foreign and domestic banking sector. In the later 1970 and through 1980, banking system in Europe, America, and Japan is relaxed, capital controls is eased. The pace of financial innovation accelerates and the activities of IFC diversify (Cochrane, 2009, p.2; Schenk, 2002, p.338-339). The location of international banking centres is not random so the historical process determines the location of banking centre. International and domestic policies are playing role. The banks cluster in the cities due to the clients cluster in addition to this they benefit from economies of scale. Foreign banks compete with domestic banks for domestic customers and they compete with other foreign banks too. Foreign banks must offer greater expertise, service, and efficiency. If the foreign banks serve the domestic customers abroad, they will add only little value to the host economy. This feature of international banking contributes to real economic growth and the financial system of host country (Tschoegl, 2000, p.23, p.1).

An international financial centre must be facilitated by extending direct finance through issuing and underwriting activities. The banks gain revenues the activities in financial centre. Agglomeration of the banks enables the activities related to foreign exchange, money market trading and other trading activities such as deposit taking, management of Eurobond issues, derivatives. The cluster structure is extremely important for the banking sector. The retrieval of the high-skilled human resources, financial innovation, and networking is the essentials for financial success. If the banks enter the financial centre, it increases the competition. Consequently, buyers' search costs decrease. Location economies are important for international banks. Financial centres should be near or in countries whose economies are developing and dynamic and accordingly requiring extensive borrowings.

Reed, H. (1981) uses five banking sector variables, which distinguish between international banking centres and international financial centres. The first of two variables measure the number of locally headquartered banks and their international links. The other three variables count private and foreign banks located in the centre. The pre-eminence of financial centres depends on micro factors such as language, legal system, infrastructure, and proximity to markets. He analyses nearly 50 centres between the period of 1900 and 1980. He put London and New York in the top position. He finds

that the international banking centre leads the development of international financial centre. Even though, the banking structure of a centre is important, the power usually comes from centre's global portfolio management activities (Citation from Leung and Unteroberdoerster, 2008, p.3-4; McCauley and Chan, 2007, p.2-3).

Goldberg and Saunders (1982) find that the long-term regulatory consideration is more important than short-term profitability in determining a foreign location for new associates. Long-term considerations that are regulatory factors and foreign direct investment of host country in the foreign market play an important role in location decision-making process of multinational banks (Citation from Choi, 1984, p.80). Choi, Tschoegl, and Yu also analyse the location pattern of offices of the world's largest 300 banks and interconnectedness of financial centres in banking perspective, using data for period of 1970 and 1980 by using regression analysis. According to findings of this study, they accept 14 IFCs worldwide. London, New York and Tokyo are the most important IFCs. The degree of interpenetration has increased when the size of offshore grows. The attractiveness of the centre is related to the economic size of the centre, which is measured by per capita gross national product multiplied by the population of IFC and to the amount of financial activity, which are measured by the number of banks. Foreign bank presence in an IFC is related to an increased propensity by domestic banks (Choi, Tschoegl and Yu, 1986, p.61-62; Liu and Strange, 1997, p.655-656).

Choi, Park and Tschoegl depict some of their earlier findings and identify some changes in the behaviour of international banks. According to their findings, the interconnectedness of financial centres holds steady between 1990 and 2000. Number of offices in financial centres reduces due to the mergers between the parent banks; however, the number of banks in the centre is still major indictor of the attractiveness of the centre. Between 1990 and 2000, London and New York remain in the top rank and Asia is split between Tokyo, Hong Kong, and Singapore while European Centre falls into third tier (Choi, Park and Tschoegl, 2002, p.16-19). Rose and Spiegel (2007) explore that commercial banks with nearby IFC have lower interest spread, which is a competition indicator in banking sector, than other commercial banks. If the commercial

banks close to IFC, the monopolization effect in banking sector would decrease. On the other hand, the financial markets near IFC extend more credit to private sectors (Citation from Hines, 2009, p.24-25). Derudder *et al.* (2011) verify that there is an emerging shift of international banking centres from "West to East" (Citation from Wojcik, 2013, p 2738).

The literature on the performance of foreign bank in the financial centres is limited. Rime and Stiroh (2003) investigate the performance of the banks in Switzerland. They find large profit and cost inefficiencies for mid-sized and small banks and little gains from diversification economies for the universal banks in Switzerland. Kwan (2006) analyses cost efficiency of commercial banks in Hong Kong and finds that the banks move closer to the frontier over time. Sufian and Majid (2007) analyse banks efficiency in Singapore. They find that mergers increases efficiency and bank profitability has positive effect on bank efficiency whereas poor loan quality has negative effect. Rouabah (2002) analyses banks in Luxembourg over 1995-2000, using parent bank home country, bank size and some socio-economic variables. There is a positive effect on efficiency of some socioeconomic variables and significant technological progress, whereas there is no evidence of economies of scale. Guarda and Rouabah (2007) find that efficiency changes dominated technological changes. None of these studies takes the differences between host and home country characteristics that could explain bank efficiency into consideration (Citation from Curi *et al*., 2013, p.368-382). Curi *et al.* determine the efficiency differences between foreign banks that are defined by home/host country differences in regulations and other home country characteristics by using Luxembourg Banking System's data over the period of 1999-2009. Per capita GDP and business cycle calculated for home country are used as economic indicators. Capital requirements, private monitoring, and official disciplinary power, restrictions on bank activities are used as regulatory indicators, which define home-host country characteristics. According to their findings, branch banks are more efficient than subsidiary banks whereas larger banks are more efficient than small-size banks. Higher regulation does not increase the efficiency of foreign banks in Luxembourg. There is no significant effect of higher capital requirement while powerful supervisory agency negatively affects the banking efficiency. Macroeconomic

conditions at home country do not affect foreign bank efficiency in Luxembourg. Organisational form of foreign banks (subsidiary or branch) does not play an important role in bank efficiency, whereas geographical origin of parent bank is important. In terms of bank specific characteristics, the ratio of equity to total assets has positive effect on efficiency. Finally stronger disclosure requirement has negative effect on banking efficiency. These results support the necessity that the national authorities should review the current home-host model of banking regulation (Curi *et al*., 2013, p.368-382).

Clare, Gulamhussen and Pinheiro analyse the continuation of a foreign bank's operations in the City of London. They hypothesize the relation between the continuation of operations and bank characteristics (initial organizational form, experience, and size), home-country characteristics (distance, regulatory quality, and presence of domestic competitors); global market conditions (agglomeration of other multinational banks, global GDP, and its volatility). Their findings indicate that banks that established locally licensed operations show higher probability of continuing operations. Local experience and size of local operations also significantly influences continuation. Banks that established operations integrated into the parent demonstrates lower probability of continuation in the market. Banks from distant countries also demonstrates a lower probability of continuing in the market. World demand and volatility increases continuation, but the volatility of world demand interacted with size exhibits a higher probability of continuation of large operations. Having information flow advantages in internalization is considered as an important driver of bank entry. However, this advantage plays a secondary role for operation continuation in overseas. Consistent with Basel I practices, the regulatory authorities may focus on the behaviour of foreign banks and they regulate more closely the activity of subsidiaries and locally licenced banks because these banks are more possibility of continuing. These foreign banks also seek central bank funding alternatives rather than parent bank's support (Clare, Gulamhussen and Pinheiro, 2013, p.750-759).

4.11 THE IMPACT OF CAPITAL MARKETS ON INTERNATIONAL FINANCIAL CENTRES

Stock markets are key financial structure of many financial centres and are connected to the development of national or international financial centres. Two thirds of global stock market capitalisation is in the global financial centres (Deutsche Bank, 2010, p.2). Improvement in information technology eases the centralization of information resources in financial instruments trading and market forecasting at financial centres.

In addition to this, the gradual disappearance of regional stock markets has been observed in Western countries. The creation of Euronext (2001) and then its merger with the NYSE (2006), as well as the grouping of Northern European stock markets under OMX Group, then its purchase by the NASDAQ and the Dubai stock market is main examples (Blancard and Tadjeddine, 2010, p.16). More than 70% of debt securities and 80% of interest rate derivatives are in the traditional financial centres in the USA and Europe (Deutsche Bank, 2010, p.2). Liberalisation of financial markets enhances mobility of capital and raises the volume of the international capital flows. Financial centres become more international as a result, this the stock markets bare foreign competition. Financial centre competition is stronger in capital and stocks markets. Geographical clustering of financial activities is vital in international exchanges due to scale economies although virtualisation of stock exchanges increase the reachability of financial markets. The development of financial markets causes the investors to search for other markets, especially developing ones in order to diversify their portfolios and receive higher return on their investments. Clustering causes that the firms and agents in capital market can decrease high transactions cost through exchange of information. According to Kindleberger, firms for new issues or primary markets do not require locating in the same place; on the other hand, secondary market requires concentration to eliminate searching costs over wide distances for price information (Kindleberger, 1973, p.87).

The virtualisation of stock exchanges has improved the reachability of financial markets, and this causes investors to explore other markets in order to diversify their

portfolios and to investigate higher returns on their investment. As a result, multinational firms list their shares on developed exchanges to satisfy their increased financial needs (Karreman and Knaap, 2012, p.901-902). Additionally, NYSE and NASDAQ located in the USA offer low transaction costs, strict financial reporting standards and better shareholder protection standards therefore these markets attract more foreign and domestic listing and investors than London Market. In contrast, national centre, which benefits from economies of scale, concentrates on specific financial territories for instance, commodities, foreign exchange, and derivatives markets (Grote, 2000, p.5; Karreman and Knaap, 2007, p.9). The benefit of centralizing access to financial knowledge or large amount of capital provided by capital markets means that large multinational companies are linked to IFC in higher ranking. Hereafter the dominance of international distribution of cities in capital markets is determined by size.

Gehrig tells that trades in informational sensitive securities are probable to be geographically concentrated at a specific region in which the information on those securities are communicated and aggregated. The balance of centrifugal forces (decentralising) versus centripetal forces (centralising) determine the extent of agglomeration in the financial sector (Gehrig, 2000, p.417). According to Grote and Lo (2002), location is important for traders. Conversely, Engelen and Grote argue that stock market virtualisation that is a replacement of traditional trading systems by computer based trading system such as NASDAQ has significantly assigned to the decline of Amsterdam and Frankfurt (Engelen and Grote, 2009, p.682). Moreover, the virtualisation of stock exchanges improves the reachability of financial markets, and this causes investors to explore other markets in order to diversify their portfolios and to investigate higher returns on their investment. As a result, multinational firms list their shares on developed exchanges to satisfy their increased financial needs. The issues of decentralisation of stock exchanges and stock exchange virtualisation give hints to understand the increasing international competitive pressures between international financial centres (Karreman and Knaap, 2012, p.902-903). The closeness allows for cheap and easy exchange of information other market participants (Engelen and Grote,

2009, p.682). Sophisticated foreign stock exchanges are preferred to list their shares by multinational firms (Engelen, 2007).

O'Brien (1992) underlines the listing of the foreign firms on foreign exchanges (Citation from Scholten, 1992, p.259). In parallel, trades in standardized securities are less geographically concentrated. Faulconbridge *et al.* analyse the relation between the various products traded in a specific financial centre and stock exchange organisation and provides detailed accounts of decline of Amsterdam as a financial centre because of shift of investment and securities trading to larger financial centres, for instance London, New York and Paris (Faulconbridge *et al.*, 2007, p.280). Policy makers in advanced economies want to enlarge their national territories by developing their financial centres as supports for derivatives markets. Policy makers seek to constrain the growth of OTC markets and channel the trades into regulated exchanges located in host cities in order to sustain the economic position of these cities. If the policy makers impose heavy regulation on exchanged located in host country, financial activities could shift to the OTC markets which are less territorial (Budd, 1995, p.357).

Although in the literature there is no clear evidence on why firms prefer to list particular stock exchange located in particular centre and how the listing decision of the firms reflect the competitive advantage of the a financial centre. Pagano *et al.* (2001) emphasise that the stock markets compete for listing than rival exchanges in financial centres, because the decision of firms for listing reflects the competitive advantage of a financial centre. Firms listing strategy can be used to assess the competitiveness of financial centres (Citation from Karreman, 2010, p.5). However, the listing decision of a firm is not only affected by characteristics of a specific of stock exchange, i.e. market size and liquidity but also by the institutional features of the country and the corresponding financial centre in which the specific stock exchange is located due to non-tradable hidden form of localised information. There exist large differences between specific financial centres concerning these characteristics. Not all financial centres are equally adaptive to market conditions. If the financial centre enhances its competitive position in the market segments and geographical areas, it can attain superior position in the competition. In liquid market, individual transaction causes only

minor price changes. On the other hand, in illiquid markets, even small amount of transactions may significantly shake prices. Risk-averse investors prefer liquid market so the shock of individual trader is lower. Liquid markets enable the firm a lower cost of capital. Due to scale economies, liquid markets are found in financial centres with high number of traders and market size. On the other hand, a firm has more prestigious if its securities are listed on a reputable stock exchange located in preeminent financial centre (Karreman and Knaap, 2007, p.3-4; Karreman, 2010, p.79-83). The trend of migration of stock exchange activities make difficult for smaller emerging stock exchanges to survive. For that reason, smaller emerging exchanges will merge with stock exchanges located in developed countries. This consolidation of trading system is stimulated by technological advances (Claessens, Klingebiel and Schmukler, 2002, p.18).

Brennan and Subrahmanyam (1996) explain that the benefits of listing are rest on the size and liquidity of stock market. In liquid market, individual transactions cause minor price reactions and the firms burden lower cost of capital. Stock markets in developing countries have liquidity problems; a foreign listing is a feasible option for to overcome this problem in domestic exchange. La Porta *et al.* (1998) underline the importance of legal environment so the firms want to be listed in a country with high standards of investor protection, strict disclosure requirements relative to their domestic market. Efficient bureaucracy increases the attractiveness of stock market for investor. Although the characteristics of the host market determine the attractiveness of listing market over another market, the decision of listing may be given based on closeness or proximity preference. Edison and Warnock review the advantages of cross-listing for firms that are multiple; lower information and transaction costs for investors, more informative financial reporting and higher firm valuation in emerging markets (Citation from Karreman and Knaap, 2012, p.902-903).

Poon applies cluster analysis for 43 capital cities to test the spatial organisation of financial centre and stock exchanges between 1980 and 1998 and finds out hierarchical tendencies. During this era, there is a dominance of London and New York as global financial centre. He uses various financial variables that are stock market capitalisation, value of shares traded, number of companies (foreign and domestic)

listed, dividend yield, and number of shares traded, in his research. In his research time, market and share concentrations do not exist for many cities and the host stock exchange of some world cities is not well developed and not very large. Market capitalisation and value of shares traded are the size indicators, which determine the productivity of the financial markets. Nevertheless, market and trading volume concentration are important so they provide an indication of the number of companies and its securities that dominate the stock exchange. Capital markets in top tier cities such as London and New York are less concentrated and trading of stock is spread over large number of firms, larger average company size, and lower risk rating. He also finds that Tokyo's top position as financial centre is replaced by London so London is excellent position in international bond markets and foreign exchanges. Tokyo's weaknesses depend on over-dependence on the banks as source of funds and on concentration of funds on real estate. Cities are developing competitive advantage, at the same time are showing the trend of spatial hierarchical tendencies and differentiation. According to Poon, the competition of the financial centres is expected to be deeper in securities and bond markets (Sagaram and Wickramanayake, 2005, p.29; Poon, 2003, p.140-152). Poon, Eldredge and Yeung investigate the characteristics of international financial hierarchy by examining 45 cities on capital market perspective, period of 1980 to 1999. They also want to assess the extent to which inequality within the financial hierarchy has decreased or increased over time with the rise of regional financial centres. Spatial organisation of international finance is determined by a trend of merging with regional centres growing relative to global centres (Poon, Eldredge and Yeung, 2004, p.412-428). The standardized primacy index developed by Walters is used to test the nature of inequality among capital markets. Using rank size model, international inequality can be decreased over time. According to findings of his research, Tokyo and most cities' stock markets are regional rather than international centres. Only London, New York, Singapore, Zurich are open to foreign participations (Walter, 1998).

According to Wojcik, the geography of stock exchange activities is based on two dimensions, which are proneness to concentration in a financial centre, and proneness to international consolidation. Trading system and distribution of standard

information are not prone to concentration in a financial centre but prone to international consolidation and likely to concentrate in international financial centres for relationships with international actors, whereas activities relying on non-standard relationships are likely to concentrate in national financial centres, for relationships with domestic members, issuers, and investors. The value added of a financial centre lies not in offering a location for computers, but in the circulation of information (Wojcik, 2007, p.220).

Cassis (2006) analyses Paris's position as a financial centre and highlights that Paris a major player in long-term capital issues (Citation from Cochrane, 2009, p.2). According to Klagge and Martin (2005), the information about listed firms on exchanges with a national focus is not easily accessible and generally interpretable (i.e. the information is unstandardized) in contrast to financial centre, which may occur due to the increases of information asymmetry. The listed firms located within close proximity to financial centres could lead to distinctive market advantages as compared to the listed firms located in peripheral area. If a sectorial specialisation exists, the attractiveness and comparative advantage of financial centres will increase (Citation from Karreman and Knaap, 2007, p.11; Karreman, 2010, p.84-85).

Cetorelli and Peristiani assess the relative ranking of financial centres around world by using social network analysis method for 45 stock exchanges during 1999-2006. They try to evaluate whether the United States 'financial markets have lost their leadership and the extent of competition that other centres have boosted over period. The sample consists of all companies, which are issued stock in their host (domestic) market and are raised capital for stated periods. Stock exchange dominance is measured by total market capitalisation and trading volumes. Openness, real GDP, country's consumer price index, freedom score, government score, and investment score (free flow of capital, especially foreign capital) are used as explanatory variables. Openness is measured by exports plus imports divided as percentage of GDP. Freedom score is measured by weighted average of country's regulation, trade, fiscal government, monetary, investment, financial, property rights, corruption, and labour force. Government score is measured by the total amount of government spending at all levels

as a portion of GDP. They find that US stock exchanges (NASDAQ and NYSE) a leader in global equity activity throughout the entire sample period. US stock exchanges continue to attract companies from other prestigious locations. London Stock Exchange, the Deutsche Börse and the Hong Kong Stock Exchange continue their high prestige position, but other locations Australia, Singapore, and Taiwan have made significant improvements in the ranking (Cetorelli and Peristiani, 2009, p.1-30).

Cipriani and Kaminsky analyse the correlation between the volatility of issuance by the periphery, both mature and emerging economies, and the volatility of issuance by the financial centre in the United States. The correlation between the volatility of issuance of all the regional groups and the United States is mostly positive and high. Shocks in financial centre imply a large share of volatility of mature economy issuance in international markets. Controversially, most of the volatility of the emerging periphery issuance in international markets is explained by domestic factors. This result agrees with the finding of significant literature on financial crises that declare that financial turmoil in emerging markets is triggered by domestic and financial weaknesses. Issuance volatility is highly correlated in the bond market than in equity market. For mature economies, higher volatility in equity prices drives turbulence in both bond and equity market issuance (Cipriani and Kaminsky, 2006, p.7, p.11).

Finally, Karreman and Knaap examine the competitiveness of financial centres in China and Hong Kong for equity market perspective. Financial market sophistication and international positioning of Hong Kong are the important drivers. However, Shanghai and Shenzen provide services for smaller and domestically oriented firms. They also find that geographical characteristics of stock markets may not be sufficiently informative and the pressure of competition declines, conversely the importance of specialisation and functional complementarity of two financial centres increase (Karreman and Knaap, 2012, p.901-902).

SECTION THREE

5. EMPIRICAL STUDY AND MODEL

This study is the first model to explain the formation and the development of financial centres and the nexus between the financial characteristics of the financial system and the size of the financial system in the financial centres around the world and Turkey. The characteristics of the financial system are depicted for banking sector and stock markets and the relation between two are tested both banks and stock markets in the financial centres. These characteristics are also used in literature as financial system development indicators. The characteristics of financial systems are financial depth, financial globalisation, financial efficiency, financial stability, and financial access. The financial centres are classified into three main financial centres categories that are compared in pattern. The aim is to test how financial size or depth, financial globalisation, financial efficiency, financial stability and financial access of the banking sector and stock markets affect to the size of the financial system across different financial centres groups.

5.1 MODEL AND HYPOTHESES

There is currently no unique study the focusing on the determinants of the size of financial sector considering the characteristics of the financial system in host countries in which the financial centre is located. In the shied of Kindleberger's (1973), findings, financial competition, financial products, financial innovation, and financial development play crucial role in the formation of a financial centre, thus Istanbul Regional Financial Centre should be formed in finance perspective. An efficient domestic financial system is one of the benefits of hosting an international financial centre. The regional or sectorial monopolies are eliminated by the consequences of the international financial centres due to the competitive market conditions. Additionally, financial development of the country also stimulates the development of a significant IFC. Competent or well-developed financial systems encourage competition, reduce transaction costs, and improve resource allocation within the economy, leading to the development of a balanced financial system. However, the impact of banking sector and

stock market on the size of financial sector and the development of an IFC are very remarkable. In developing countries, financial systems are small and generally reflect a little their GDP: The banking system constitutes the largest part of the financial system in many countries, especially in emerging and developing countries. The small size of banking system in most developing countries hampers the achievement of economies of scale and scope and tends to reduce the competition. Similarly, capital markets are small in developing countries and generally reflect little their GDP, costs are high, legal and accounting frameworks are weak. Many developing countries do not have a market for government bonds. Without a government bond market, having an efficient private bond market and commercial paper market are hard. Trading costs are high in small markets due to low transaction volumes. The deeper the financial markets are the greater the liquidity for financial instruments. The larger the types of the financial instruments are the broader the market is. The greater depth and breadth of the financial system increases the efficiency of the financial centres. Borrowers face lower interest rate and better availability of funds. Lenders are able to issue larger loans and trade the securities on a broader securities market.

The starting point of this empirical model is Levine, King, Beck and Kunt's financial development and growth studies. Four broad characteristics or dimensions of financial system are financial depth; financial efficiency, financial stability, and financial access developed by Beck, Kunt and Levine (2009) and Beck *et al.*(2008) to measure the financial development and economic growth nexus. Most researchers also have analysed the relationship between financial market development and macroeconomic variables. The most famous one is King and Levine (1993) who study 80 countries from 1960 until 1989 using cross-country regression to determine whether the level of financial development predicts long-run economic growth, capital accumulation, and productivity growth. In this dissertation, a new dimension is added to King and Levine's the characteristic of the financial system, which is the level of financial globalisation.

The size of the banking sector and the stock market represent financial depth dimension of the financial system. The efficiency of the banking sector and the stock

market in providing financial services represent efficiency dimension of the financial system. The stability of the banking sector and the stock market represent stability dimension of the financial system. The degree to which the participants of the stock market and banking sector can use the financial institutions and the financial markets represents the access dimension of the financial system. The financial depth, the financial access, the financial stability, and the financial efficiency might not be fully portrayed by all features of the financial system in financial centres, nevertheless they reveal some features that can be helpful for emerging, or developing countries like Turkey. In this dissertation, a new characteristic of the financial system that is the level of financial globalisation is added as a fifth dimension.

Both financial intermediaries and financial markets play a crucial role in the development of sound financial system in turn financial centres. Due to this reason, the foremost focus of this dissertation is the effect of the characteristics or features of the financial system on the size of the financial system that cover banking sector, stock and bond market in financial centres located at various parts of the world. Based on Tschoegl (2001) and Walter (1993) perspective, products of a financial centre, i.e. banks and stock markets are the focus point. In this dissertation, the another aim is to understand the determinants of the size of the financial system, whether banking sector characteristics indictors or stock market characteristics indicators have more significant power on the size of the financial system by using cross-country regression to draw causal inferences in the world. In order to depict the contributors of the size of the financial system five different hypotheses and models are formed. In each model, a specific feature or characteristic of the financial system is tested for banking sector and stock market of the group of the financial centre. All models describe which financial subsector, i.e. banking sector or stock market, has more power on the designation of the size of the financial system. Due to the low coverage of non-banking financial institutions and derivatives markets by data, the focus is highlighted on banking sector and the stock markets. There are large differences across countries and the group of financial centres, therefore the data in the models are in terms of GDP per capita except for ratios.

The cross-border analysis covers 64 financial centres and 45 countries including Turkey and Istanbul. Furthermore, a comparison is made between the countries categorised under three distinctive groups of financial centres that are global, regional, or transnational, and national. The development phase of financial centres conveys the characteristic of the financial system for the reason this categorisation is used. Next, these country groups are compared with Turkey. Although Turkey is categorised under national financial centre group, it is excluded from national financial centres data set in order to analyse Turkey separately. Finally, based on the results of this empirical model carried out, the current position and potential of Istanbul that is the most preeminent financial centre in the country as international financial centre is discussed, since Istanbul is the most preeminent financial centre in the country.

5.2 DATA AND MODEL VARIABLES

The cross-border analysis covers 64 financial centres and 42 countries including Turkey and Istanbul. United Arab Emirates, Bahrain, and Qatar are excluded from the list because of insufficient data set. GFCI ratings and rankings published by Z/Yen Group in September 2013 is the starting point for grouping the financial centres. GFCI provides ratings and rankings for 83 financial centres, drawing on two separate sources of data that are instrumental factors and responses to online survey filled by finance sector professionals. Instrumentals factors explain in detail under section 4.6.2. of this dissertation point out the competitiveness of the financial centres. Offshore financial centres are excluded from the analysis so those centres are out of the scope of this dissertation so Istanbul is not positioned as an offshore centre. Due to a poor availability of comparable data, unclear geographical concept, and country-based reporting standard of financial sector, the country-based dataset is used. The same methodology is also applied in the global international financial centre-ranking models such as GFCI, Xinhua-Dow Jones IFCD Index. Additionally, if there is more than one centre in a country i.e. the USA, Canada, Japan, the country categorisation is based on the highest ranked city.

Grouping the financial centres is based on the GFCI 14 ranking and grades shown in Table 23.

Table 23: Categorisation of Financial Centres

Category	Country	Financial Centre
Global	United Kingdom	London
	United States	New York-Boston-San Francisco-Chicago-Washington
	Hong Kong	Hong Kong
	Singapore	Singapore
	Japan	Tokyo-Osaka
	Switzerland	Zurich-Geneva
	Germany	Frankfurt Munich
	South Korea	Seoul
	Canada	Toronto-Montreal-Vancouver-Calgary
	Australia	Sydney-Melbourne
Regional	Malaysia	Kuala Lumpur
	China	Shanghai-Shenzhen-Taipei-Bangkok-Beijing
	Austria	Wien
	Norway	Oslo
	Italy	Rome-Milan
	Brazil	Rio de Janerio
	France	Paris
	Israel	Tel Aviv
	New Zealand	Wellington
	Sweden	Stockholm

National	Indonesia	Jakarta
	Turkey	Istanbul
	The Netherlands	Amsterdam
	Argentina	Buenos Aires
	Saudi Arabia	Riyadh
	Finland	Helsinki
	Denmark	Copenhagen
	Russian Federation	Moscow-St Petersburg
	South Africa	Johannesburg
	Panama	Panama
	Mexico	Mexico
	Poland	Warsaw
	Philippines	Manila
	Ireland	Dublin
	Belgium	Brussels
	Czech Republic	Prague
	Spain	Madrid
	India	Mumbai
	Portugal	Lisbon
	Hungary	Budapest
	Estonia	Tallinn
	Iceland	Reykjavik
	Greece	Athens

The first group includes first 15 financial centres, having a grade between 794 and 692 points, which are called as global financial centres. Ten countries are

categorised under this group. The second group includes the financial centres with ranking between 16 and 43, having a grade between 690 and 636 points (above Turkey's ranking), which are called as regional financial centres. Ten countries are categorised under this group. Finally, the third group includes the financial centres with ranking 44 and 83, having a grade between 633 and 496 points, which are called as national financial centres. 22 countries are categorised under this group. Although Turkey is among national financial centres based on GFCI 14 ranking and rank rating, it is analysed separately.

Due to the categorisation of financial centres based on GFCI index ranking are made, country's specific classification such as developing, developed, underdeveloped or emerging are not taken into consideration.

To test the hypothesis, the variables are selected from Beck, Levine, Kunt and King's studies (1993), (1997), (1999), (2008), (2009), (2010), (2012), and (2013) and from well-known global financial centre ranking models. Data of model variables are taken from World Bank Global Financial Development Dataset and World Bank Development Indicators Dataset. The Global Financial Development Database is constructed by Beck, Kunt, and Levine (2000, 2010) and data originally are collected from the Database on Financial Development and Structure that also combines data from the Financial Access Survey and the Global Findex. Due to reporting differences of each country, using a unique dataset prepared by a reputable institution-World Bank eliminated country's reporting bias or obstacles. Additionally, internal World Bank comparisons with individual country data increase the reliability of the data and eliminate certain measurement errors. Most of the countries 'financial sector data started to be reported from 1992 to 2011, which is 20 years period except some specific indictors or variables of which beginning period can be changed. The indictors used in the models cover the annual time series.

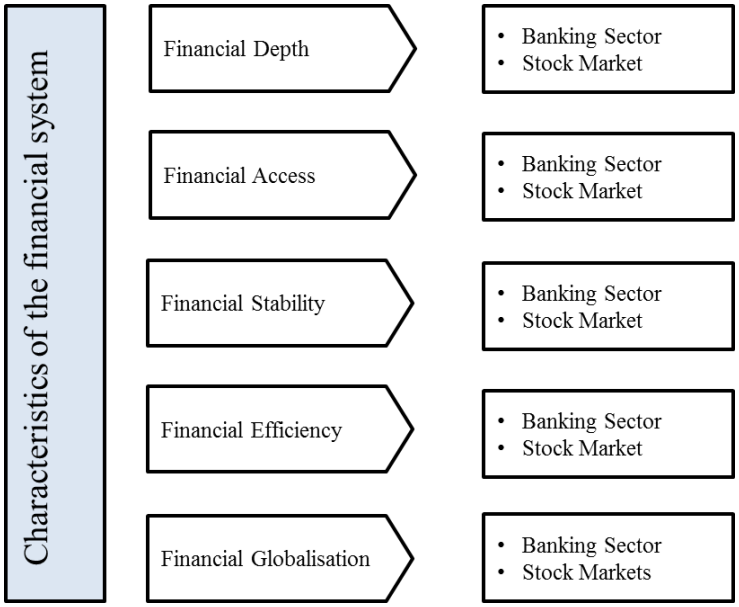

Figure 14: Characteristics of the Financial System

In the empirical study, the characteristics of the financial system are tested by using financial development indicators created by Levine, Kunt and Beck. The main component of the financial system is shown in Figure 14. Five broad components or dimensions of characteristics of the financial system that includes in banking sector and stock market are financial depth, financial efficiency, financial stability, and financial access and the financial globalisation.

All variables used in the models are listed in Table 24.

Table 24: List of Model Variables

Variable (Abbreviated Name)	Variable (Description)	Source
FINSIZ	Financial sector size	World Bank Global Financial Development Dataset and author calculation
PRVCRD	Private credit by deposit money banks to GDP (%)	World Bank Global Financial Development Dataset Original Data: International Financial Statistics (IFS)
STOVAL	Stock market total value traded to GDP (%)	World Bank Global Financial Development Dataset Original Data: Global Stock Markets Factbook and supplemental S&P data, Standard & Poor's
INTDEB	International debt issues to GDP (%)	World Bank Global Financial Development Dataset Original Data: Bank for International Settlements (BIS)
LOANRE	Loans from non-resident banks (net) to GDP (%)	World Bank Global Financial Development Dataset Original Data: Bank for International Settlements (BIS)
BANEFF	Bank efficiency	World Bank Global Financial Development Dataset and Author calculation
STOTUR	Stock market turnover ratio (%)	World Bank Global Financial Development Dataset Original Data: Global Stock Markets Factbook and supplemental S&P data, Standard & Poor's
BANZSC	Bank Z-score	World Bank Global Financial Development Dataset Original Data:Bankscope, Bureau van Dijk (BvD)
STOVOL	Stock price volatility	World Bank Global Financial Development Dataset Original Data: Bloomberg
BANBRA	Bank branches per 100,000 adults	World Bank Global Financial Development Dataset Original Data:Financial Access Survey (FAS), International Monetary Fund (IMF)

Variable (Abbreviated Name)	Variable (Description)	Source
STOLIS	Number of listed companies per 1,000,000 people	World Bank Global Financial Development Dataset Original Data:Global Stock Markets Factbook and supplemental S&P data, Standard & Poor's
INFRAT	Inflation rate	World Development Indicators (WDI), World Bank
GDPPER	The growth of GDP per capita	World Development Indicators (WDI), World Bank

Financial sector size (FINSIZ) is derived by aggregating commercial banks and Central banks' assets plus stock market and bond capitalisation as a share of GDP: FINSIZ as an independent variable explains the overall size of the banking sector and capital markets. Deposit money banks cover commercial banks and other financial institutions that accept transferable deposits, such as demand deposits. Total assets held by deposit money banks include claims on domestic real nonfinancial sector, which includes central, state, and local governments, nonfinancial public enterprises, and private sector. Central bank assets are claims on domestic real nonfinancial sector by the Central Bank.

The market capitalisation is known as market value. The market capitalisation ratio equals the share price times the number of shares outstanding of the listed companies on the country's stock exchange at the end of the year. Listed companies do not include investment companies, mutual funds or other collective investment vehicles. The market capitalisation as a percentage of GDP measures the size of the domestic stock market. Liu and Strange (1997) use market capitalisation in the financial centre's stock exchange. Poon (2003) uses market capitalisation as a percentage of GDP to test the spatial organisation of financial centres. The market capitalisation as a percentage of GDP is a measure of the scale and performance of the stock market. Bond capitalisation as a share of GDP is calculated by adding up private domestic bond market capitalisation and public domestic bond market capitalisation as a share of GDP: Private

domestic bond market capitalisation to GDP measures the domestic debt securities issued by financial institutions and corporations as a share of GDP. Public domestic bond markets capitalisation to GDP measures the domestic securities issued by the government as a share of GDP: The sum of these three variables provides a rough indication of relative size of the capital market in financial centre.

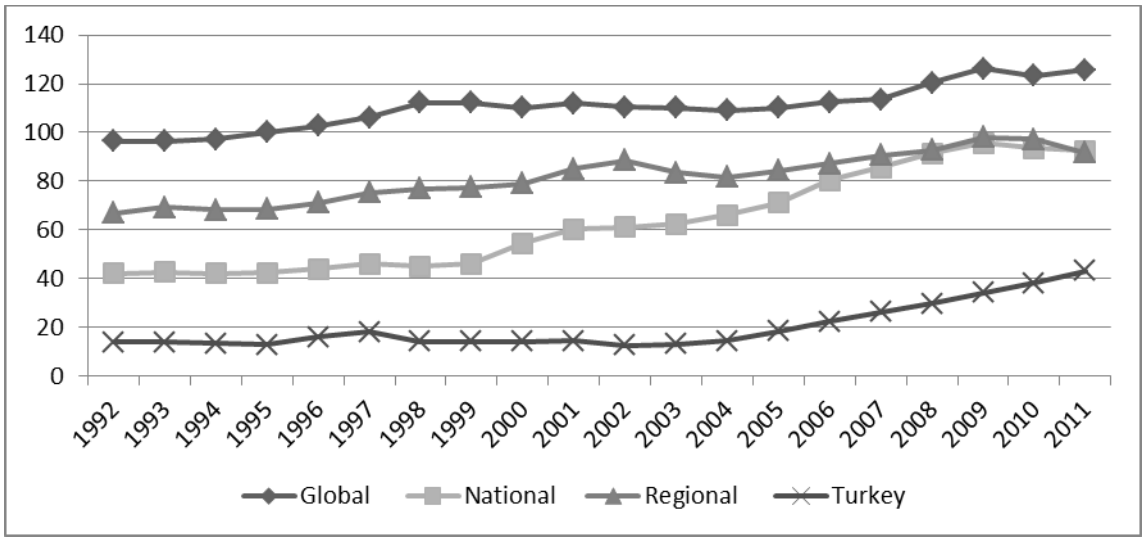

Chart 19: Financial Depth-Banking Sector in Financial Centres

(1) Domestic private credit to the real sector by deposit money banks as a percentage of GDP.
(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1992-2011.
Source: World Bank. World Bank Global Financial Development Database.

The ratio of private credit by deposit money banks to private sector as a share of GDP (PRVCRD) focuses on the intermediary claims on the private sector and measures the main activities of banks. GFCI also uses the ratio of private credit by deposit money banks to private sector as a share of GDP indicator in their global international financial centre's ranking model. PRVCRD variable excludes credits to the public sector, central and local governments, as well as public enterprises. PRVCRD variable also indicates the contribution of the banking system to improvement of total economy efficiency. Additionally, PRVCRD variable reveals the advantageous role of commercial banks in relation to central bank and measures the activity of financial intermediaries. Private credit by deposit money banks to private sector as a share of GDP ratio varies widely across countries, and it correlates strongly with income level. It is assumed that the financial system allocates more credit to private firms providing risk management services, mobilising savings and smoothing transactions than the financial

system simply channels credits to governments sector (Levine, 1997, p.705). Economies with deep financial systems have higher private credit to GDP ratio. Chart 19 proves this result for financial centres. The countries with global financial centres have higher private credit to GDP ratio than the countries with regional and national financial centres. On the contrary, Turkey's ratio is lower than all groups. The average of private credit to GDP in Turkey is at least three times lower than in global financial centres group in 2011. Nonetheless, a high ratio of private sector credit to GDP is not necessarily desired. Chart 19 also shows that this ratio was raising trend between 1994 and 2009 in all groups except Turkey, but the effects of banking crisis are obvious in 2009.

Stock market total value traded ratio (STOVAL) equals the value of domestic equities traded on domestic exchanges divided by GDP. STOVAL measures the depth of the stock market. GFCI also uses stock market total value traded ratio in their financial centre's global ranking model. Stock market total value traded is calculated by the total number of shares traded multiplied by their respective matching prices. The value-traded ratio is used to measure stock market size or depth so it also measures market trading relative to economic activity. STOVAL is also an indicator of country's industrialisation and capitalisation. In developed countries, capital markets play an important role relative to the size of the economy. Porteous (1995) uses stock market total value traded ratio in his FINDEX Index to rank financial centres (Citation from Zhao, Zhang and Wang, 2004, p.588-589).

Poon (2003) uses stock market total value traded ratio to test the spatial organisation of financial centres. Liu and Strange (1997) also use this variable as the scale and performance of the centre's stock exchange. Chart 20 proves this result for financial centres. The countries with global financial centres have higher ratio than the countries with regional and national financial centres. On the contrary, Turkey's ratio is nearly the same trend with regional and national financial centres, but the average of stock market total value traded to GDP in Turkey is at least three times lower than in global financial centres group in 2011.

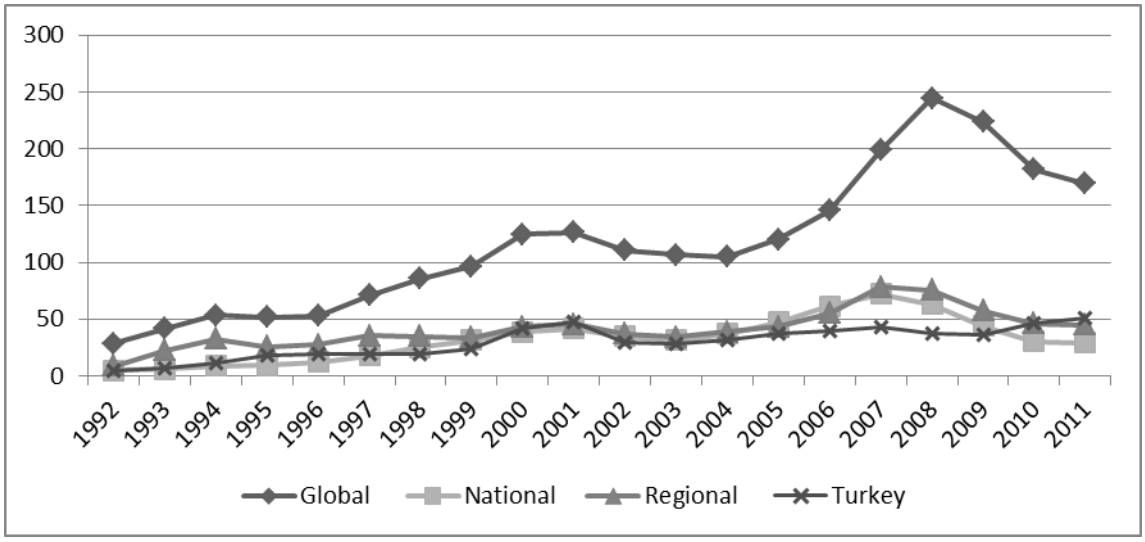

Chart 20: Financial Depth-Stock Markets in Financial Centres

(1) Stock market total value traded as a percentage of GDP.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1992-2011.

Source: World Bank. World Bank Global Financial Development Database.

Loans from non-resident banks (net) to GDP (LOANRE) is the ratio of country's loans of Bank for International Settlement reporting banks to the country's economic activity. LOANRE variable is chosen to test the level of financial globalisation in the banking sector. Although international loans increase in high-income countries, Chart 21 shows a very fluctuating and unstable trend for all financial centres group and Turkey over time.

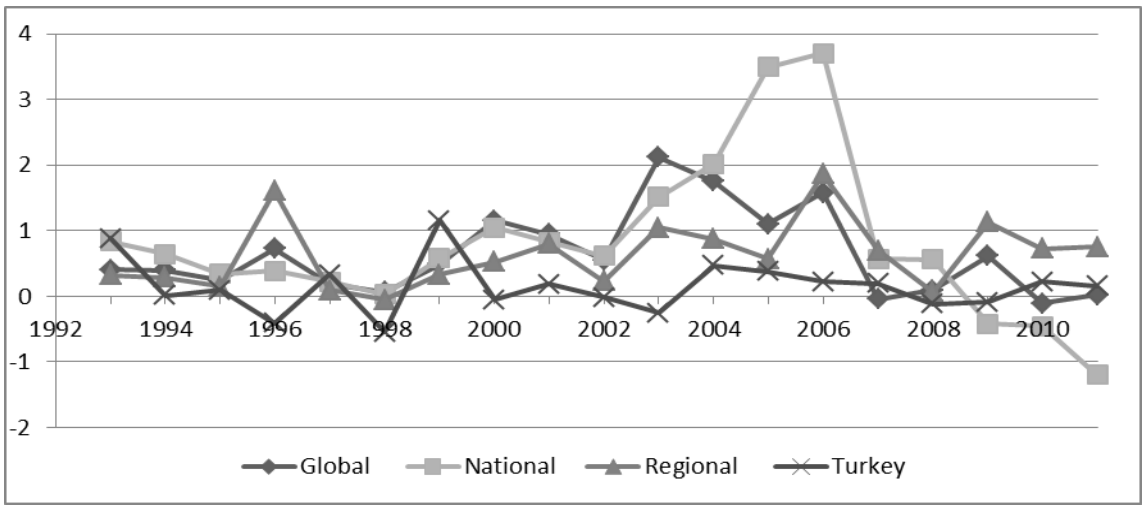

Chart 21: Financial Globalisation-Banking Sector in Financial Centres

(1) Loans from non-residents bank (net) to GDP.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1992-2011.

Source: World Bank. World Bank Global Financial Development Database.

INTDEB International debt issues comprise total value of outstanding international debt issues both public and private, as a share of GDP. INTDEB variable is chosen to test the level of financial globalisation in the stock markets. International debt issues to GDP measures the net flow of international bond issues relative to a country's economic activity. Both outstanding and new issues of international debt increase with country's income level. As seen in Chart 22, national centres group has higher ration than others are; on the contrary, Turkey's ratio is smaller than all groups. The average of international debt issues to GDP in Turkey is at least ten times lower than in national financial centres group in 2011. It can be said that Turkey's linkages to international financial markets is very small due to low amount of international debt issues.

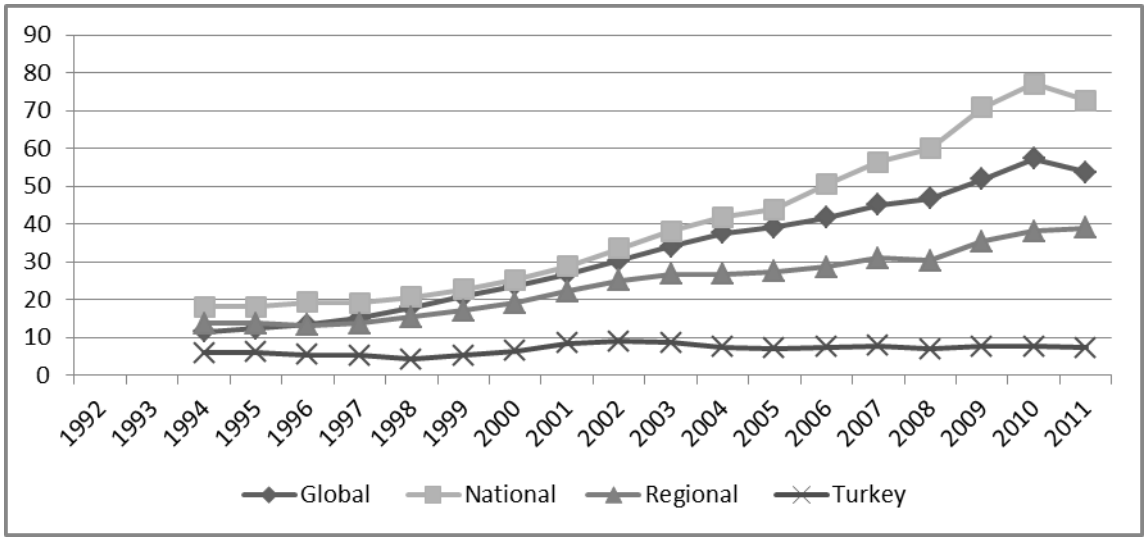

Chart 22: Financial Globalisation-Stock Markets in Financial Centre

(1) International debt issues as a share of GDP:

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1992-2011.

Source: World Bank. World Bank Global Financial Development Database.

Bank efficiency ratio (BANEFF) is iterated as the average of the sum of banks' personnel expenses or overhead costs to total asset ratio in banking sector and net interest margin. The overhead costs to total assets is the ratio that operating expenses of a bank as a share of the value of all held assets. Total assets include total earning assets, cash, and due from banks, foreclosed real estate, fixed assets, goodwill, other intangibles, current tax assets, deferred tax, discontinued operations, and other assets.

Lower overhead costs can be interpreted as a sign for efficiency; in contrast, very low overhead costs may be interpreted as inefficient competition, therefore overhead cost is not a clear measure of efficiency. The interest margin is the accounting value of bank's net interest revenue calculated by subtracting bank interest income from interest income as a share of its average interest bearing (total earning) assets. Although many factors can influence interest margin, smaller interest margins represent efficiency and competition. In order to increase the significance of variable the average value of bank interest margin and overhead costs to total asset is calculated. Chart 23 shows the trend of the bank efficiency variable. The countries with global financial centres have lower ratio than the countries with regional and national financial centres in parallel to the level development of their financial systems. On the contrary, Turkey's ratio is very high and floating because long-lasting banking crisis in the country.

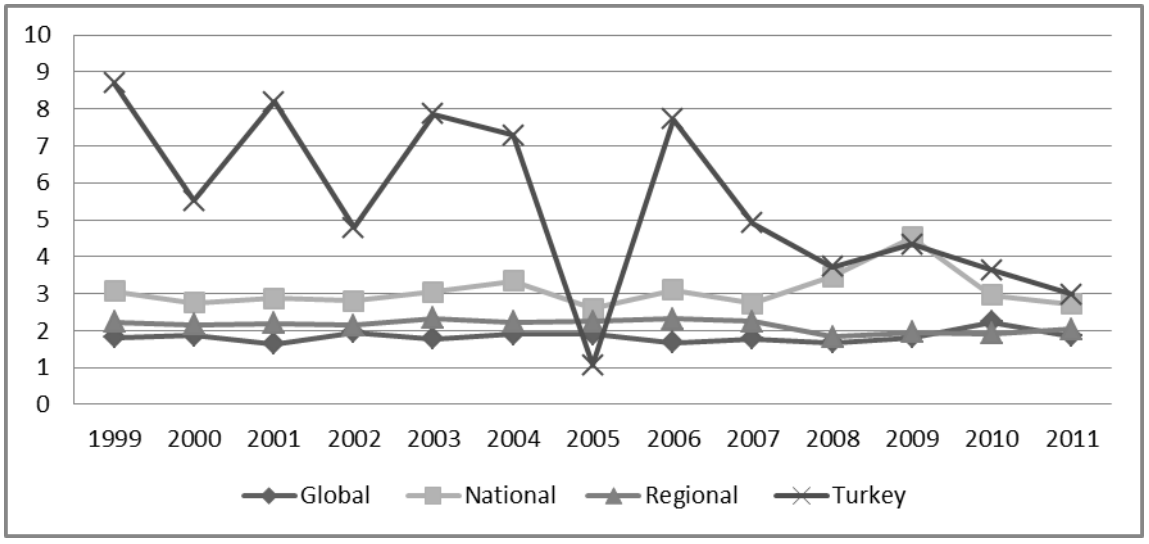

Chart 23: Financial Efficiency-Banking Sector in Financial Centres

(1) Banking efficiency ratio.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1999-2011.

Source: World Bank. World Bank Global Financial Development Database.

Stock market turnover ratio (STOTUR) is used to test the stock market efficiency. Total value of shares traded during one period is divided by the average market capitalisation for that period. The stock market turnover evaluates the value of stock transactions relative to the size of the market and the turnover ratio is not a direct measure of trading costs in stock market rather it is usually used as a measure of market liquidity (Kunt and Levine, 1999, p.9). An active but small stock exchange has a higher

turnover ratio whereas a large but less liquid or inactive stock market has a low turnover ratio and larger market capitalisation. Stock market turnover ratio is also used by Kerr (1965) and Porteous (1999) to identify the importance of financial centre. On the other hand, Cheng and Yeung (2007) also use this variable to rank the financial centres and Du, Xia, and Wei (2012) use this variable to test the development of Shanghai International Financial Centre. Chart 24 shows the trend of stock market turnover ratio across financial centre groups and Turkey. Stock market turnover ratio exhibits substantial cross-country variability. The countries with global financial centres have higher ratio than the countries with regional and national financial centres. On the contrary, Turkey's ratio is very high and exhibits variability. High turnover ratio indicates that Borsa Istanbul an active stock exchange but has small average market capitalisation.

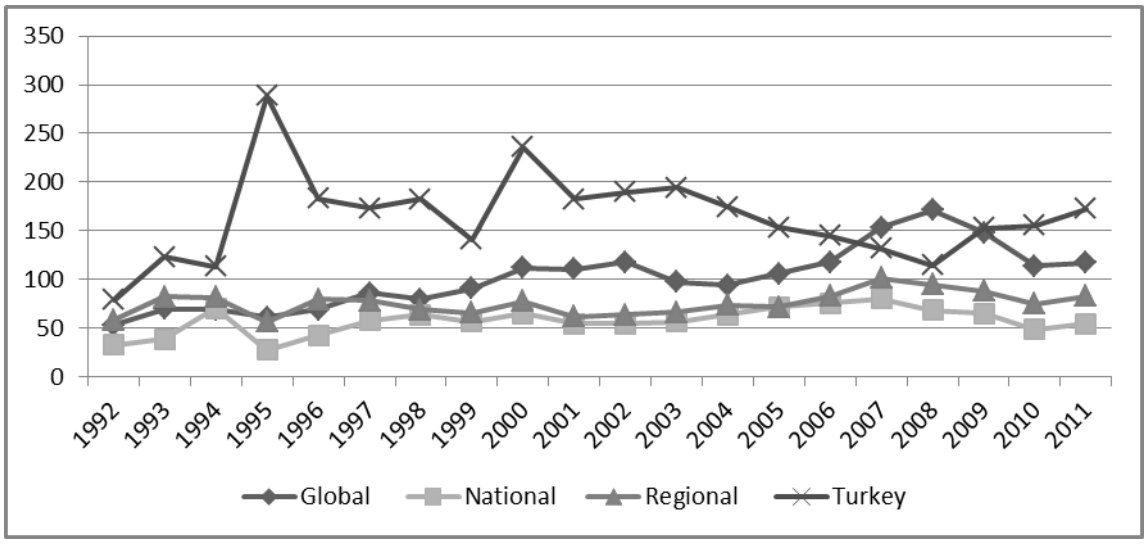

Chart 24: Financial Efficiency-Stock Markets in Financial Centres

(1) Stock market turnover ratio.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1992-2011.

Source: World Bank. World Bank Global Financial Development Database.

Bank Z-score (BANZSC) variable captures the probability of default of a country's commercial banking system. Z-score based on accounting data underlying accounting and auditing framework is common measure of financial stability. The z-score is defined as $z= (k+\mu)/\sigma$ formulation , where k is capital asset ratio, μ is the ratio of return on assets, and σ is standard deviation of return on assets as a proxy for return

volatility (Levine *et al.*,2013, p.12). Z-score is the inverse probability of financial institution's insolvency therefore higher z-score indicates the lower probability of default and it implies that the banks are more stable (Levine *et al*., 2012, p.15). .Chart 25 shows that z-scores of national and global financial centres groups are nearly identical as well as z-score of regional financial centres group is higher than others. On the contrary, Turkey's z-score is floating, after banking crisis, it reached peak point in 2005, and then Turkey's z-score has been trending lower than all groups. The average of z-score is at least four times lower than in regional financial centres group in 2011.

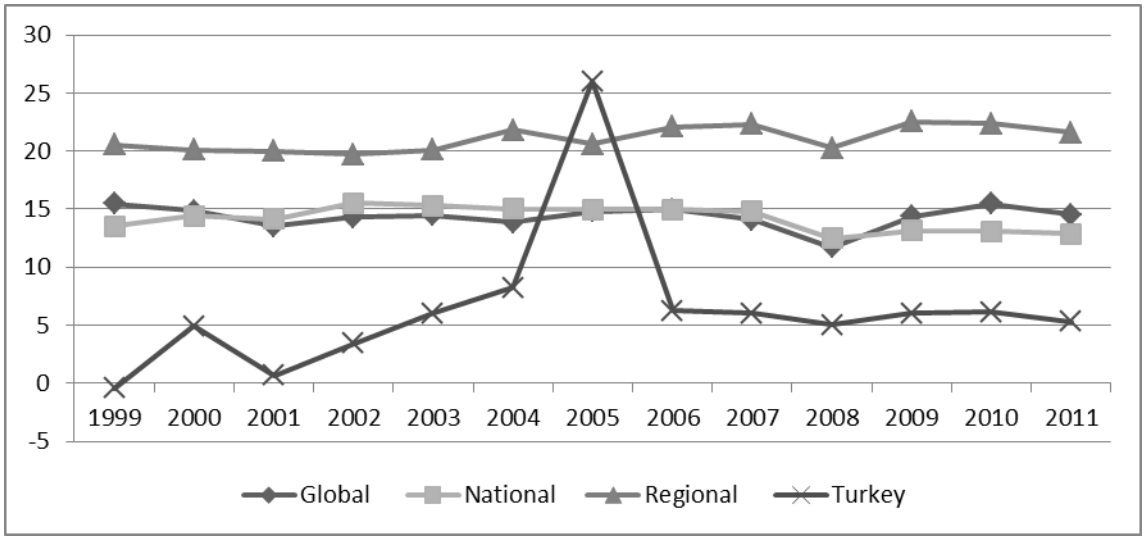

Chart 25: Financial Stability-Banking Sector in Financial Centres

(1) Bank Z score.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1999-2011.

Source: World Bank. World Bank Global Financial Development Database.

Stock price volatility (STOVOL) is the average of the 360-day volatility of the national stock market index. For financial markets, the most used variable for stability is market volatility.

Chart 26 shows that all financial centres groups have identical trend except Turkey, however all groups including Turkey were affected by increased volatility during the global financial crisis. On the contrary, Turkey's ratio is higher than others are so developing or emerging markets show higher volatility than developed market and economy. During financial crisis in 1999 and 2001, the volatility was very high in Turkey.

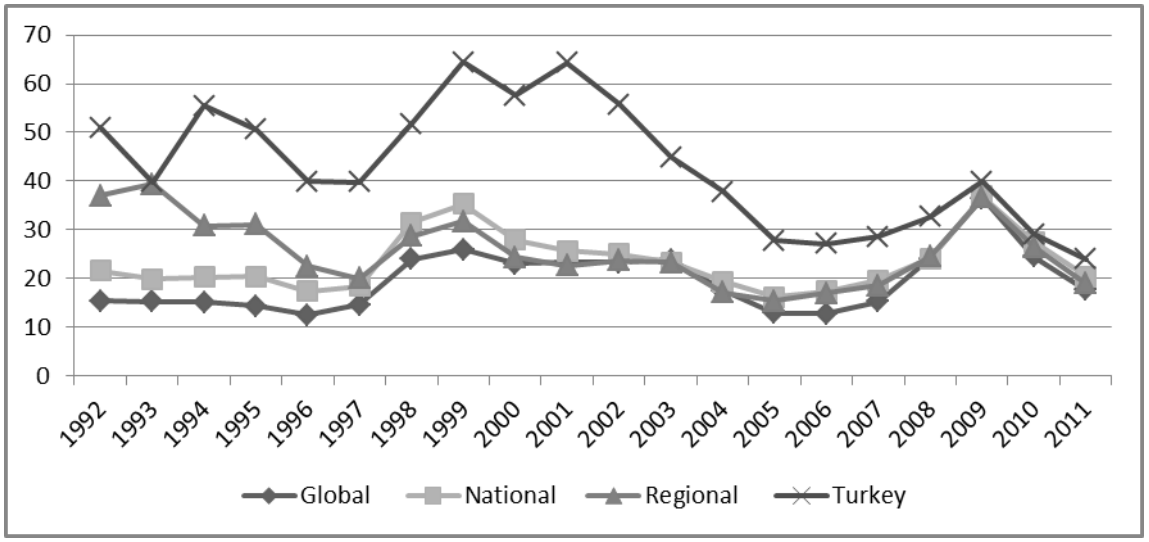

Chart 26: Financial Stability-Stock Markets in Financial Centres

(1) Stock price volatility.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial group for 1992-2011.

Source: World Bank. World Bank Global Financial Development Database.

Bank branches per 100.000 adults variable (BANBRA) is used as testing access in banking sector. For each type of reporting institution is calculated as (number of institutions + number of branches)*100,000/adult population in the reporting country. The number of bank branches can become misleading with the move to branchless banking system but up to present BANBRA is the only access variable for banking sector, which covers all countries in the dataset. Chart 27 shows the trend of bank branches per 100.000 adults. The trend is nearly same for all groups; on the contrary, Turkey's ratio is lower than other groups. Poor access indicates both limited banking penetration and restricted access to credit.

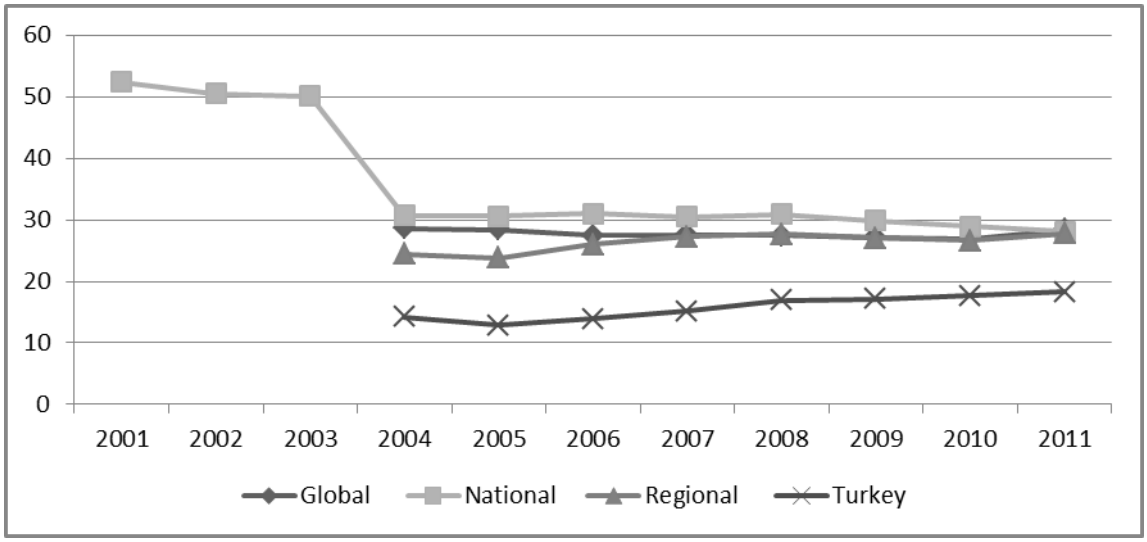

Chart 27: Financial Access-to Banking Sector in Financial Centres

(1) Bank branches per 100.000 adults.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial group for 2001-2011.

Source: World Bank. World Bank Global Financial Development Database.

Number of listed companies per 1.000.000 people (STOLIS) variable comprises the number of publicly listed companies per 1,000,000 people. Number of listed domestic companies is the domestically incorporated companies listed on the country's stock exchanges at the end of the year and measures access in terms of breadth of use. STOLIST indicator does not include investment companies, mutual funds, or other collective investment vehicles. The growing trend of listed companies also suggests a stock market development. Chart 28 shows the trend of number of listed companies per 1.000.000 people. The countries with global financial centres have higher ratio than the countries with regional and national financial centres in parallel to the level development of capital market. On the contrary, Turkey's ratio is lower than all groups, which indicates narrow sized capital market. The average of number of listed companies per 1.000.000 people in Turkey is at least twelve times lower than in global financial centres group in 2011.

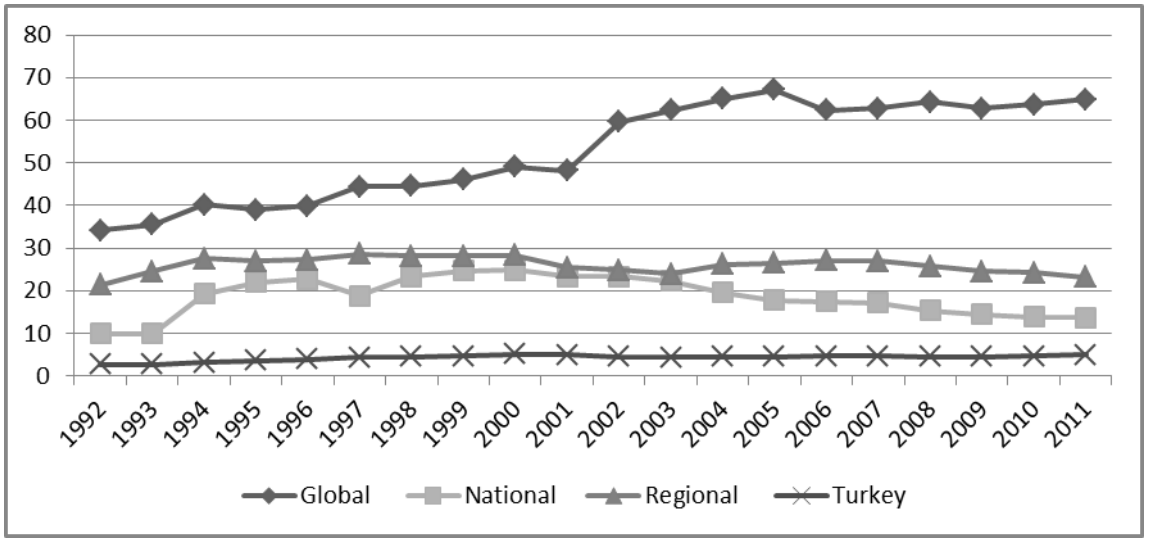

Chart 28: Financial Access-to Stock Markets in Financial Centres

(1) Number of listed companies per 1.000.000 people.

(2) Time series are constructed by calculating arithmetic average of annual observations for each financial centre group for 1992-2011.

Source: World Bank. World Bank Global Financial Development Database.

Finally, two country specific variables are used as main control variables that are the growth of GDP per capita and inflation rate. The overall level of development of the country is captured by the growth rate GDP per capita that is divided by midyear population. The growth rate of GDP per capita reveals the size and volume of economic activities in a country. Additionally for testing macroeconomic performance, the inflation rate is used.

5.3 METHODOLOGY OF ANALYSIS

This section explains the models, the hypothesis, and statistical method applied for the empirical analysis. In the models, the impact of characteristics of the financial system on the size of the financial system is tested for banking sector and stock markets in the financial centres.

All selected countries and respectively financial centres are either established global financial centres or regional and national centres. The host countries of the financial centre are categorised under three distinctive groups of financial centre as explained in “Data and Model Variables” section. Each model also is regressed for each financial centre group and Turkey. One of the most important benefit of using financial

centre's categorisation is to analyse the relationships between variables bearing in mind that make it possible to differentiate as to whether the aforesaid direction and size vary across financial centre group. After all, the result of this empirical study paves the way for making recommendation in Istanbul's potential which steps and precautions should be taken on the path to be a reputable and strong international financial centre.

Due to the variables used in the models are annually measured, the panel data estimation technique is applied to increase the number of observations in the models and all countries are analysed together in the models. Country specific factors should be added into models, therefore economic growth, and inflation rate variables are included in the models. Panel data enable us to study the dynamics of adjustment. Panel data also make the data less likely to be serially correlated than they would be in a time series setup. Finally, panel data eliminates the aggregation biases resulting from aggregating across countries. Linear regression model is estimated by least squares.

The main objective of regression analysis is to estimate or predict the value of dependent variable from one or more independent variables. Minimum numbers of a set of independent variables that estimate the most significantly percentage of variance in dependent variable are used. The most important thing in regression analysis is to select the appropriate independent variable. If the independent variables are highly correlated, the multicollinearity could occur and the statistical significance of independent variables could weaken (Baltagi, 2008). Due to long time series used in the models, we encounter cointegration problem. For this purpose, LLC- Levin-Lin-Chu Test developed by Levin, Lin and Chu (1992) is used. Employing panel unit root test proves to be particularly useful in analysing industry-level and cross-country data. Individual unit root tests have limited power. The power of a test is the probability of rejecting the null when it is false and the null hypothesis is unit root. Levin-Lin-Chu Test (LLC) suggests the following hypotheses;

H_0: Each time series contains a unit root (no cointegration)

H_1: Each time series is stationary

Levin-Lin-Chu Test employs the following basic Augmented Dickey Fuller (ADF) model (1979) for each individual i

$$\Delta y_{it} = \alpha y_{it-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta y_{it-j} + X'_{it}\delta + \varepsilon_{it} \quad (1)$$

In equation (1) y_{it} refers to pooled variables, X_{it} represents exogenous variable and ε_{it} represents error terms. While a unique α estimation value for each cross-section on equation (6) is obtained, lag number varies for lagged value of variable in each cross sectional units. As well as ADF unit root test, H_0 states that each time series contains a unit root. In LLC panel unit root test, the estimation of α parameter is determined by deterministic components and dummy variables that are established for Δy_{it} and y_{it} purged from autocorrelation and standardised.

After the variables or time series have become stationary and attained the condition of significance level, each model is estimated by random-effects, fixed-effects, and pooled-OLS (ordinary least square) estimation techniques. Then one of the estimation techniques is chosen considering statistical significance by applying structural tests that are Hausman Test, F Test, and Breusch Pagan Test.

Fixed effects model is used in case analysing the impact of variables that vary over time. Fixed effects model additionally discovers the relationship between predictor and outcome variables within an entity. Each entity has its own individual characteristics that may or may not have impact on the predictor variables. By using fixed effects model, it is assumed that something within individual may have impact on or bias the predictor or outcome variables. Fixed effects model eliminates the effect of time-invariant characteristics from predictor variables, predictors 'net effect can be evaluated. The main assumption of fixed effects model is that these time-invariant characteristics are unique to the individual and are not correlated with other individual characteristics. Each entity's error terms and the constant should not be correlated with the others. When the error terms are correlated, fixed effects model is not suitable. It should be better to use random effects model. Whereas in random effects model, random and uncorrelated independent variables are included in the model. The main advantage of random effects model is that it can be estimated by the ordinary least

squares method. If you have reason that the differences across entities have influence on dependent variable, you should use random effects. In random effects model, time invariant variables are included in the model and time invariant variable plays as a role as explanatory variables. In fixed effects model, time invariant variables are absorbed by the intercept. In order to make a choice among two models , fixed or random effects, Hausman test developed in 1978 is run in which the null hypothesis is that the preferred model is random effects vs. fixed effects. H_o hypothesis is constructed, as the random effects model is more significant than fixed effect model to estimate variable. In Hausman test, if H_o hypothesis is accepted, random effects model is used. Hausman test is based on the idea that in the hypothesis of no correlation, both ordinary least squares (OLS) in the least squares dummy variable model and generalized least squares (GLS) are consistent, but OLS is inefficient or under the alternative, OLS is consistent, while GLS is not. Thus, under the null hypothesis, the two estimates would be consistent (Stock and Watson, 2007). Moreover, in F test, fixed effects estimators are compared to pooled-OLS estimator. Under null hypothesis, the preferred model is pooled-OLS model. If the null hypothesis is rejected in this test, fixed effects model is preferred. Breusch-Pagan Lagrange Multiplier (LM) test enables us to make a decision between a random effects regression and pooled OLS regression. If the null hypothesis is rejected in this test, random fixed effects model is preferred as estimation technique (Brooks, 2002).

The first model is constructed to measure the impact of financial depth of banking sector and stock market on the size of the financial system having regard to which subsector, the banking sector or stock market, have more contribution to the size of the financial system. Although considering the financial depth itself is not a characteristic of the financial system, it explains the overall size and composition of the financial system. The coefficient of private credit by deposit money banks to GDP ratio (PRVCRD) representing depth of banking sector and the coefficient of stock market total value traded to GDP ratio (STOVAL) representing the depth of stock markets are compared. PRVCRD is better indicator of financial depth because it only accounts for credit granted to private sector. On the other hand, STOVAL ratio is liquid-based measures and are more closely related to stock market developments and used in

various studies. Afterwards, the size of estimated coefficients of two variables in regression is compared in order to define which subsectors are more dominant then other in the financial system.

$$FINSIZ_{ti} = \beta_0 + \beta_1 PRVCRD_{ti} + \beta_2 STOVAL_{ti} + \beta_3 COUFAC_{ti} + \varepsilon_{ti} \quad (2)$$

In Model 2, the contribution of financial globalisation in banking sector and stock market respectively to the size of the financial system will be tested. For this purpose, international debt issues to GDP ratio (INTDEB) and loans from non-resident banks (net) to GDP ratio (LOANRE) are included in the model as independent variables. Afterwards the degree of influence of INTDEB and LOANRE on the size of the financial system is compared through the estimated coefficient of the regression.

$$FINSIZ_{ti} = \beta_0 + \beta_1 INTDEB_{ti} + \beta_2 LOANRE_{ti} + \beta_3 COUFAC_{ti} + \varepsilon_{ti} \quad (3)$$

In Model 3, the contribution of efficiency of banking sector and stock market respectively to the size of the financial system is tested. For this purpose, bank efficiency (BANEFF) and stock market turnover ratio (STOTUR) as stock market efficiency variable are included in the model as independent variables. Afterwards the degree of influence of BANEFF and STOTUR variables on the size of the financial system is compared through the estimated coefficient of the regression.

$$FINSIZ_{ti} = \beta_0 + \beta_1 BANEFF_{ti} + \beta_2 STOTUR_{ti} + \beta_3 COUFAC_{ti} + \varepsilon_{ti} \quad (4)$$

In Model 4, the contribution of stability of banking sector and stock market respectively to the size of the financial system is tested. For this purpose, bank Z-score (BANZSC) as stability ratio for banking sector and stock price volatility (STOVOL) as stability ratio for stock markets are included in the model as independent variables. Afterwards the degree of influence of BANZSC and STOVOL is compared through the estimated coefficient of the regression.

$$FINSIZ_{ti} = \beta_0 + \beta_1 BANZSC_{ti} + \beta_2 STOVOL_{ti} + \beta_3 COUFAC_{ti} + \varepsilon_{ti} \quad (5)$$

Lastly, in Model 5, the impact of stock market and banking sector accessibility on the size of the financial system is tested. For this purpose, bank branches per 100.000 adults (BANBRA) as accessibility ratio of banking sector and number of listed companies per 1,000,000 people (STOLIS) as accessibility ratio of stock market are included in the model as independent variables. Afterwards the degree of influence of these two variables on the size of the financial system is compared through the estimated coefficient of the regression.

$$FINSIZ_{ti} = \beta_0 + \beta_1 BANBRA_{ti} + \beta_2 STOLIS_{ti} + \beta_3 COUFAC_{ti} + \varepsilon_{ti} \quad (6)$$

5.4 EMPIRICAL RESULTS

In this part of the dissertation, the results of empirical analysis for all models are comparatively given. The position of Turkey and Istanbul is compared with other financial centre groups.

5.4.1 Global Financial Centres

First, unit root test on time series data has to be made in order to guarantee stationarity.

H_0: Each time series contains a unit root
H_1: Each time series does not contain a unit root

H_o hypothesis is rejected for all variables except number of listed companies per 1,000,000 people (STOLIS), in other words all variables are stationary except number of listed companies per 1,000,000 people (STOLIS). All variables except number of listed companies per 1,000,000 people (STOLIS) could be used without any iteration in the models. Number of listed companies per 1,000,000 people (STOLIS) variable in included in Model 5 in first difference. The results of LLC panel unit root test are presented in Table 25.

Table 25: Panel Unit Root Test Results-Global Financial Centres

Variables	Test Statistics
FINSIZ	-2.041**
PRVCRD	-1.559*
STOVAL	-2.296**
INTDEB	-2.138**
LOANRE	4.110***
BANEFF	-3.614***
STOTUR	-1.769**
BANZSC	-5.260***
STOVOL	-3.803***
BANBRA	-14.059***
STOLIS	1.883
INFRAT	-6.834***
GDPPER	-4.444***

(1) While unit root tests are performed, optimal number of lags of dependent variables is determined according to Akaike Information Criterion.

(2) ***, ** , * indicates that series are stationary at 1%, 5%, and 10% significance level respectively.

For global financial centre group, the descriptive statistics of variables used in all model are presented in Table 26. All these variables exhibit a large variation between minimum and maximum value. Large difference between minimum and maximum values is calculated for the following variables: the size of the financial system, private credit by deposit money banks, stock market total value traded, international debt issues, loans from non-residents banks, stock market turnover, and number of listed companies per 1.000.000 people.

Table 26: Descriptive Statistics-Global Financial Centres

Variables	Minimum	Maximum	Mean
FINSIZ	110.911	743.943	335.694
PRVCRD	45.055	213.939	110.255
STOVAL	13.620	726.537	116.909
INTDEB	2.786	137.907	33.119
LOANRE	8.469	349.803	73.770
BANEFF	0.080	4.354	1.839
STOTUR	22.117	393.302	101.746
BANZSC	3.588	30.175	14.338
STOVOL	7.563	47.089	19.689
BANBRA	10.229	57.326	27.697
STOLIS	5.120	208.156	52.793
INFRAT	-4.023	9.561	2.073
GDPPER	-7.823	12.015	2.014

Test statistics results that are calculated in order to select best estimation technique are shown in Table 27 for all models.

Table 27: Selection of Estimation Techniques-Global Financial Centres

Test	Model 1	Model 2	Model 3	Model 4	Model 5
Hausman Test	65.251	3.418	22.345	20.839	13.047
Random-effects-Fixed-effects	[0.000]	[0.490]	[0.000]	[0.003]	[0.011]
F Test	54.651	92.668	89.953	86.790	53.397
Fixed-effects-Pooled OLS	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Breusch Pagan Test	458.42	207.71	308.11	339.02	135.79
Random-effects-Pooled OLS	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Result	Fixed-effects model	Random-effects model	Fixed-effects model	Fixed-effects model	Random-effects model

(1) p values are reported in squared bracket.

According to the results summarised in Table 28, in Model 1, Model 3, and Model 4, null hypothesis is rejected significant at 1% level therefore the best estimation

technique is chosen as fixed-effects model. In model 2 and model 5, null hypothesis in Hausman test could not be rejected at 1% significance level and so the best estimation technique is chosen as random-effects model. After selecting appropriate estimation technique, each model is regressed in compliance with its own structure.

In model 1, the influence of depth of banking sector and capital markets on the size of the financial system is tested. In Table 28, the results of Model 1 for global financial centres group that measures the impact of financial depth of banking sector and stock markets on the size of the financial system is presented.

Table 28: The Results of Model 1-Global Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	229.771	39.446	0.000
PRVCRD	0.525	0.349	0.167
STOVAL	0.488	0.047	0.000
GDPPER	3.946	1.737	0.049
INFRAT	-8.242	2.006	0.003
Number of Observations	200	$\mathbf{R^2}$	0.655

(1) In case changed variance and autocorrelation, reliable standard errors are used.

In accordance with the results of Table 28, the increase in private credit by deposit money banks (PRVCRD) and stock market total value traded (STOVAL) have positive effects on the size of the financial system, but the coefficient of private credit by deposit banks to GDP (PRVCRD) variable is found statistically insignificant. On the other hand, stock market total value traded to GDP (STOVAL) variable is found statistically significant at 1% level. As a result, total value traded to GDP (STOVAL) variable or the depth of stock market contributes positively and statistically significantly to the size of the financial system. Furthermore, there is also a consensus on the positive relationship between the size and depth of the financial system and the supply of financial services that are important contributors to economic growth in previous

empirical works (WEF, 2012, p.8). Nevertheless, the point of view is the contribution of financial development on economic growth.

In model 2, the influence of financial globalisation in banking sector and stock market on the size of the financial system is tested. The results of Model 2 in which the effects of loans from non-resident banks (net) to GDP (LOANRE) and international debt issues to GDP (INTDEB) on the size of the financial system investigated are summarized in Table 29. In accordance with model results, non-resident banks (net) to GDP (LOANRE) variable is found statistically significant at the 5 % level. On the other hand, coefficient of international debt issues to GDP (INTDEB) variable is found statistically insignificant. In other words, the ratio of country's loans of Bank for International Settlement reporting banks to the country's economic activity that represents the level financial globalisation in banking sector contributes positively to the size of the financial system.

Table 29: The Results of Model 2-Global Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	313.061	33.961	0.000
LOANRE	0.670	0.246	0.006
INTDEB	0.290	0.344	0.400
GDPPER	-0.032	1.624	0.984
INFRAT	-3.557	4.584	0.438
Number of Observations	154	$\mathbf{R^2}$	0.192

(1) In case changed variance and autocorrelation, reliable standard errors are used.

In model 3, the influence of financial efficiency in banking sector and stock market on the size of the financial system is tested. The findings of Model 3 in which the effects of bank efficiency (BANEFF) and stock market turnover ratio (STOTUR) on the size of the financial system are investigated are summarized in Table 30. Although the coefficient of both variables is estimated as positive, variables are found statistically

insignificant. In other words, there is insignificant correlation between the financial efficiency in banking sector and stock market and the size of the financial system.

Table 30: The Results of Model 3-Global Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	342.024	10.765	0.000
BANEFF	0.835	3.698	0.825
STOTUR	0.001	0.078	0.989
GDPPER	-0.503	1.280	0.701
INFRAT	14.258	2.458	0.000
Number of Observations	130	$\mathbf{R^2}$	0.110

(1) In case changed variance and autocorrelation, reliable standard errors are used.

In model 4, the influence of financial stability of banking sector and stock markets the size of the financial system is tested. In Table 31, the results of Model 4 for global financial centres group are presented.

Table 31: The Results of Model 4-Global Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	329.133	16.473	0.000
BANZSC	1.268	1.012	0.234
STOVOL	-0.164	0.736	0.828
GDPPER	-0.983	0.921	0.307
INFRAT	14.908	2.320	0.000
Number of Observations	129	$\mathbf{R^2}$	0.116

(1) In case changed variance and autocorrelation, reliable standard errors are used.

Incompliance with the coefficient estimation, the stability increase, or z-score increase in banking sector caused the growth in the size of the financial system. As well as, increasing stock price volatility in stock market causes to shrink the size of the

financial system. Instead, both variables are found statistically insignificant. In other words, the banking sector stability represented by z-score (BANZSC) and stock market stability represented by stock price volatility (STOVOL) do not have statistically significant effect on the size of the financial system.

In model 5, the influence of financial access in banking sector and stock market on the size of the financial system is tested. In the following table, the results of Model 5 for global financial centres group are presented. Incompliance with the coefficient estimation, bank branches per 100.000 adults as banking sector access (BANBRA) variable and number of listed companies per 1.000.000 people (STOLIS) as stock market access variable have positive effect on the size of the financial system. Instead, number of listed companies per 1.000.000 people (STOLIS) variable is found statistically insignificant. However, only bank branches per 100.000 adults variable is found statistically significant at 1% level. As a result, bank branches per 100.000 adults variable (BANBRA) or financial access in banking sector contributes positively and statistically significantly to the size of the financial system.

Table 32: The Results of Model 5-Global Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	269.43	63.919	0.000
BANBRA	3.748	1.294	0.004
D(STOLIS)	1.060	0.976	0.277
GDPPER	-1.230	2.765	0.656
INFRAT	4.033	5.100	0.429
Number of Observations	76	**R^2**	0.087

(1) In case changed variance and autocorrelation, reliable standard errors are used.
(2) d indicates first difference.

5.4.2 Regional Financial Centres

First of all, unit root test on time series data has to be made in order to guarantee stationarity.

H_0: Each time series contains a unit root
$H_{1:}$ Each time series does not contain a unit root

Table 33: Panel Unit Root Test Results-Regional Financial Centres

Variables	Test Statistics
FINSIZ	-5.700***
PRVCRD	-4.136***
STOVAL	-3.004***
INTDEB	-5.623***
LOANRE	-9.892***
BANEFF	-8.952***
STOTUR	-1.967**
BANZSC	-4.568***
STOVOL	-3.609***
BANBRA	-15.288***
STOLIS	0.036
INFRAT	-5.128***
GDPPER	-6.304***

(1) While unit root tests are performed, optimal number of lags of dependent variables is determined according to Akaike Information Criterion.
(2) ***, ** , * indicates that series are stationary at 1%, 5%, and 10% significance level respectively.

H_0 hypothesis is rejected for all variables except number of listed companies per 1,000,000 people (STOLIS), in other words all variables are stationary at significance level except number of listed companies per 1,000,000 people (STOLIS). It means that all variables except number of listed companies per 1,000,000 people (STOLIS) could be used without any iteration in the models. Number of listed companies per 1,000,000 people (STOLIS) variable is included in the model 5 by

calculating first difference. The results of LLC panel unit root test are presented in Table 33,For regional financial centre group, the descriptive statistics of variables used in all model are presented in Table 34. All variables exhibit a large variation between minimum and maximum value. Large difference between minimum and maximum values is calculated for the following variables: stock market total value traded, international debt issues, loans from non-residents banks, stock market turnover, number of listed companies per 1.000.000 people and inflation rate.

Table 34: Descriptive Statistics-Regional Financial Centres

Variables	Minimum	Maximum	Mean
FINSIZ	63.741	461.666	216.602
PRVCRD	26.359	159.988	86.099
STOVAL	1.811	186.709	42.381
INTDEB	1.001	92.638	24.969
LOANRE	2.484	59.635	20.283
BANEFF	0.722	7.241	2.153
STOTUR	17.570	326.433	77.201
BANZSC	6.924	39.386	20.446
STOVOL	7.617	97.703	24.977
BANBRA	10.255	70.355	28.439
STOLIS	0.045	118.170	26.410
INFRAT	-1.408	2.075.887	28.201
GDPPER	-10.132	12.756	2.467

(1) The main reason of highest value in inflation rate value is Brazil's hyperinflation rate in 1990s.

Test statistics results that are calculated in order to select best estimation technique are shown in Table 35 for all models.

Table 35: Selection of Estimation Techniques-Regional Financial Centres

Test	Model 1	Model 2	Model 3	Model 4	Model 5
Hausman Test	11.048	0.458	2.216	0.917	2.279
Random-effects-Fixed-effects	[0.000]	[0.977]	[0.696]	[0.922]	[0.684]
F Test	82.783	42.063	62.815	55.235	33.558
Fixed-effects-Pooled OLS	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Breusch Pagan Test	924.85	671.38	308.11	500.91	144.80
Random-effects-Pooled OLS	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Result	Fixed-effects model	Random-effects model	Random-effects model	Random-effects model	Random-effects model

(1) p values are reported in squared bracket.

According to results summarised in Table 36 in Model 1, null hypothesis is rejected statistically at 1% significance level therefore the best estimation technique is fixed-effects model. In other models, null hypothesis in Hausman test could not be rejected at 1% significance level and so the best estimation technique is chosen as random-effects model. After selecting appropriate estimation technique, each model is regressed in compliance with its own structure.

Table 36: The Results of Model 1-Regional Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	151.013	11.957	0.000
PRVCRD	0.306	0.123	0.001
STOVAL	0.751	0.052	0.000
GDPPER	3.523	1.076	0.005
INFRAT	-0.046	0.008	0.000
Number of Observations	180	**R^2**	0.556

(1) In case changed variance and autocorrelation, reliable standard errors are used.

In model 1, the influence of depth of banking sector and stock market on the size of the financial system is tested. The results of Model 1 are presented in the following table. In accordance with the results of Table 36, the increase in private credit by deposit money banks (PRVCRD) and stock market total value traded (STOVAL)

have positive effects on the size of the financial system, as well as the coefficients of both variables are found statistically significant. Considering the coefficient estimation value, stock market total value traded to GDP (STOVAL) variable or the depth of stock markets have more contribution on the size of the financial system than the depth of banking sector has.

In model 2, the influence of financial globalisation in banking sector and stock markets on the size of the financial system is tested. The results of Model 2 in which the effects of loans from non-resident banks (net) to GDP (LOANRE) and international debt issues to GDP (INTDEB) on the size of the financial system are summarized in Table 37. In accordance with the model results, both variables are found statistically insignificant. In other words, the ratio of country's loans of Bank for International Settlement reporting banks to the country's economic activity that represents the level financial globalisation in banking sector and international debt issues to GDP (INTDEB) that represents the level of financial globalisation in stock market has no statistically significant effect on the size of the financial system.

Table 37: The Results of Model 2-Regional Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	191.839	16.309	0.000
LOANRE	1.332	0.950	0.161
INTDEB	0.384	0.563	0.495
GDPPER	3.907	1.377	0.000
INFRAT	-1.893	0.309	0.000
Number of Observations	153	$\mathbf{R^2}$	0.226

(1) In case changed variance and autocorrelation, reliable standard errors are used.

In model 3, the influence of financial efficiency in banking sector and stock market on the size of the financial system is tested.

Table 38: The Results of Model 3-Regional Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	193.083	34.196	0.000
BANEFF	-1.904	7.154	0.786
STOTUR	0.382	0.133	0.004
GDPPER	3.450	1.658	0.037
INFRAT	1.426	2.870	0.619
Number of Observations	130	$\mathbf{R^2}$	0.008

(1) In case changed variance and autocorrelation, reliable standard errors are used.

The findings of Model 3 in which the effects of bank efficiency (BANEFF) and stock market turnover ratio (STOTUR) on the size of the financial system are investigated are summarized in Table 38. Although the coefficient of bank efficiency variable is estimated as negative and stock market turnover ratio is estimated as positive, only stock market turnover ratio (STOTUR) variable is found statistically significant at 1% level. In other words, there is only correlation between the financial efficiency in stock market and the size of the financial system.

In model 4, the influence of financial stability of banking sector and capital markets on the size of the financial system are tested. In the following table, the results of Model 4 for regional financial centres group are presented. Incompliance with the coefficient estimation, the stability increase, or z-score increase in banking sector causes the growth in the size of the financial system. As well as the stock prices volatility increase in capital markets causes to enlarge the size of the financial system. Instead, both variables are found statistically insignificant. In other words, the banking sector stability represented by z-score (BANZSC) and capital markets volatility (STOVOL) represented by stock price volatility do not have statistically significant effect on the size of the financial system.

Table 39: The Results of Model 4-Regional Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	190.519	44.171	0.000
BANZSC	1.326	0.885	0.134
STOVOL	0.052	0.563	0.926
GDPPER	3.461	1.674	0.039
INFRAT	1.671	3.604	0.643
Number of Observations	130	$\mathbf{R^2}$	0.001

(1) In case changed variance and autocorrelation, reliable standard errors are used.

In model 5, the influence of financial access in banking sector and stock market on the size of the financial system is tested. In the following table, the results of Model 5 for regional financial centre group are presented. Incompliance with the coefficient estimation, bank branches per 100.000 adults as banking sector access variable (BANBRA) is found statistically significant at 5% level and number of listed companies per 1.000.000 people (STOLIS) as stock market access variable is found statistically significant at 1% level.

Table 40: The Results of Model 5-Regional Financial Centres

Dependent Variable : Financial system size (FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	196.667	38.637	0.000
BANBRA	1.374	0.627	0.028
D(STOLIS)	2.102	0.479	0.000
GDPPER	2.497	1.610	0.121
INFRAT	1.055	2.811	0.707
Number of Observations	69	$\mathbf{R^2}$	0.072

(1) In case changed variance and autocorrelation, reliable standard errors are used.
(2) D indicates first difference.

Both variables have positive effect on the size of the financial system. Considering the coefficient estimation value, stock market access variable has more contribution on the size of the financial system than banking sector access variable has.

5.4.3 National Financial Centres

First, unit root test on time series data has to be made in order to guarantee stationarity.

H_0: Each time series contains a unit root
$H_{1:}$ Each time series does not contain a unit root

Ho hypothesis is rejected for all variables except the size of the financial system (FINSIZ).

Table 41: Panel Unit Root Test Results-National Financial Centres

Variables	Levels	First Differences
FINSIZ	-0.119	-7.349***
PRVCRD	-1.212	-2.377***
STOVAL	-1.276	-10.290***
INTDEB	-0.473	-3.652***
LOANRE	-0.918	-4.426***
BANEFF	-7.029***	
STOTUR	-3.416***	
BANZSC	-7.153***	
STOVOL	7.107***	
BANBRA	-27.929***	
STOLIS	-2.898***	
INFRAT	-6.253***	
GDPPER	-6.454***	

(1) While unit root tests are performed, optimal number of lags of dependent variables is determined according to Akaike Information Criterion.
(2) ***, ** , * indicates that series are stationary at 1%, 5%, and 10% significance level respectively.

Private credit by deposit money banks (PRVCRD), stock market total value traded (STOVAL), loans from non-resident banks (net) (LOANRE) and international debt issues (INTDEB) that variables are included in related models in first difference. In case first difference of those variables is calculated, null hypothesis is rejected. For this reason, the cointegration level of those variables is determined as one. Except those variables, all remaining variables are stationary in levels. Finally, the models are estimated in accordance with its own feature. The results of LLC panel unit root test are presented in Table 41.

For national financial centre group, the descriptive statistics of variables used in all model are presented in Table 42. All these variables exhibit larger variation between minimum and maximum value than other financial centres groups.

Table 42: Descriptive Statistics-National Financial Centres

Variables	Minimum	Maximum	Mean
FINSIZ	0.012	784.957	175.700
PRVCRD	6.838	272.809	63.615
STOVAL	0.055	349.244	34.263
INTDEB	0.139	381.002	40.798
LOANRE	1.430	417.172	48.867
BANEFF	0.116	47.291	3.148
STOTUR	0.660	538.196	59.119
BANZSC	-5.306	47.930	13.908
STOVOL	3.909	95.465	23.928
BANBRA	4.805	105.261	30.430
STOLIS	0.175	231.148	17.777
INFRAT	-4.480	874.622	9.586
GDPPER	-14.568	13.018	2.358

(1) The main reason of highest value in inflation rate value is Russian Federation's hyperinflation rate in 1993s.

Test statistics results that are calculated in order to select best estimation technique are shown in Table 42 for all models.

Table 43: Selection of Estimation Techniques-National Financial Centres

Test	Model 1	Model 2	Model 3	Model 4	Model 5
Hausman Test	1.426	2.176	8.801	0.000	30.684
Random-effects-Fixed-effects	[0.839]	[0.703]	[0.117]	[1.000]	[0.000]
F Test	0.187	0.265	0.630	0.000	1.837
Fixed-effects-Pooled OLS	[0.000]	[0.993]	[0.894]	[1.000]	[0.021]
Breusch Pagan Test	0.000	0.000	0.000	0.000	0.000
Random-effects-Pooled OLS	[1.000]	[1.000]	[1.000]	[1.000]	[1.000]
Result	Fixed-effects model	Pooled OLS	Pooled OLS	Pooled OLS	Fixed-effects model

(1) p values are reported in squared bracket.

According to the results summarised in Table 43 in Model 1 and Model 5, null hypothesis is rejected statistically significance at the 1% level, therefore the best estimation technique is fixed-effects model. For remaining models, the pooled-OLS are used as an estimation model. After selecting appropriate estimation technique, each model is regressed in compliance with its own structure.

Table 44: The Results of Model 1-National Financial Centres

Dependent Variable : Financial system size D(FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	-0.659	2.415	0.787
D(PRVCRD)	1.824	0.502	0.000
D(STOVAL)	0.413	0.104	0.000
GDPPER	0.454	0.458	0.322
INFRAT	-0.111	0.089	0.228
Number of Observations	386	**R^2**	0.512

(1) In case changed variance and autocorrelation, reliable standard errors are used.
(2) D indicates first difference.

In Model 1, the influence of depth of banking sector and stock market on the size of the financial system is tested. The results of Model 1 for national financial centre group are presented in Table 44. The increase in private credit by deposit money banks

(PRVCRD) and stock market total value traded (STOVAL) have positive effects on the size of the financial system, as well as the coefficients of both variables are found statistically significant at 1% significance level. Considering the coefficient estimation value, private credit by deposit money banks to GDP (PRVCRD) variable or the depth of banking sector has more contribution on the size of the financial system than stock market total value traded.

In model 2, the influence of financial globalisation in banking sector and stock markets on the size of the financial system is tested. The results of Model 2 in which the effects of loans from non-resident banks (net) to GDP (LOANRE) and international debt issues to GDP (INTDEB) on the size of the financial system are investigated and summarized in Table 45. According to model results, international debt issues to GDP (INTDEB) that represents the level of financial globalisation in stock markets is found statistically significant at 1% significance level. Additionally, loans from non-resident banks (net) to GDP (LOANRE) that represents the level of financial globalisation in banking sector is found statistically significant at 10% significance level. In other word, banking sector globalisation and stock market globalisation contribute to the size of the financial system. Considering the coefficient estimation value, INTDEB variable has more contribution on the size of the financial system than LOANRE variable.

Table 45: The Results of Model 2-National Financial Centres

Dependent Variable : Financial system size D(FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	-1.490	3.500	0.670
D(LOANRE)	0.262	0.135	0.052
D(INTDEB)	0.534	0.203	0.005
GDPPER	2.255	0.567	0.000
INFRAT	-0.443	0.268	0.628
Number of Observations	316	**R^2**	0.095

(1) In case changed variance and autocorrelation, reliable standard errors are used.
(2) D indicates first difference.

In model 3, the influence of financial efficiency in banking sector and stock market on the size of the financial system is tested. The effects of bank efficiency (BANEFF) and stock market turnover ratio (STOTUR) on the size of the financial system are investigated and the results are summarized in Table 46. Both variables are found statistically insignificant. In other words, there is insignificant correlation between the financial efficiency in banking sector and stock market and the size of the financial system.

Table 46: The Results of Model 3-National Financial Centres

Dependent Variable : Financial system size D(FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	1.629	4.642	0.726
BANEFF	-0.317	0.646	0.623
STOTUR	0.039	0.042	0.371
GDPPER	2.035	0.603	0.001
INFRAT	-0.795	0.365	0.030
Number of Observations	286	$\mathbf{R^2}$	0.055

(1) In case changed variance and autocorrelation, reliable standard errors are used.
(2) D indicates first difference.

In model 4, the influence of financial stability of banking sector and stock market on the size of the financial system is tested. In the following table, the results of Model 4 for national financial centre group are presented. Z-score variable that indicates the stability of banking sector is found statistically insignificant, on the other hand, stock market stability (STOVOL) represented by stock price volatility is statistically significant at 5% significance level and sign of coefficient is estimated negative. In other words, the increase in volatility in stock market leads to a decrease in the size of the financial system.

Table 47: The Results of Model 4-National Financial Centres

Dependent Variable : Financial system size D(FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	14.221	4.525	0.002
BANZSC	-0.089	0.134	0.509
STOVOL	-0.404	0.179	0.024
GDPPER	0.578	0.767	0.451
INFRAT	-0.069	0.189	0.714
Number of Observations	271	$\mathbf{R^2}$	0.038

(1) In case changed variance and autocorrelation, reliable standard errors are used.
(2) D indicates first difference.

In model 5, the influence of financial access in banking sector and stock market on the size of the financial system is tested. In the following table, the results of Model 5 for national financial centres group are presented. Inconformity with the coefficient estimation, although bank branches per 100.000 adults as banking sector access (BANBRA) variable has positive effect on the size of the financial system and instead, this variable is found statistically insignificant at 1% significance level. Then number of listed companies per 1.000.000 people (STOLIS) as stock market access variable is found statistically significant at 1% significance level. In other words, there is a statistically positive relation between access to stock market and the size of the financial system.

Table 48: The Results of Model 5-National Financial Centres

Dependent Variable : Financial system size D(FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	-27.502	36.621	0.461
BANBRA	0.181	1.335	0.893
STOLIS	2.214	0.684	0.004
GDPPER	3.143	1.514	0.050
INFRAT	-3.735	2.937	0.217
Number of Observations	176	$\mathbf{R^2}$	0.086

(1) In case changed variance and autocorrelation, reliable standard errors are used.
(2) D indicates first difference.

5.4.4 Turkey

Although, the time series of many financial variables at the national level are not long enough to allow econometric analysis, in this section, all models are estimated by using Turkey's narrow dataset. In compliance with previous testing methodology, firstly, cointegration degree of variables are analysed by using unit root test developed by Phillips and Perron in 1989.

First, unit root test on time series data has to be made in order to guarantee stationarity.

H_0: Each time series contains a unit root
H1: Each time series does not contain a unit root

H_o hypothesis could not be rejected for variables such as the size of the financial system (FINSIZ), private credit by deposit money banks (PRVCRD), stock market total value traded (STOVAL), loans from non-resident banks (net) (LOANRE), international debt issues (INTDEB), bank z-score (BANZSC) and stock market volatility (STOVOL). FINSIZ; PRVCRD; STOVAL; LOANRE; INTDEB, BANZSC; STOVOL variables are included in all models in first difference. In case first difference of FINSIZ; PRVCRD; STOVAL; LOANRE; INTDEB, BANZSC; STOVOL variables is calculated, and then null hypothesis is rejected. For this reason, the cointegration level of those variables is determined as one. Except those variables, BANEFF,

STOTUR variables are stationary in levels. The basic idea is to estimate a system of equations in both first differences and levels, where the instruments for the regression in differences are lagged levels. While for the regression in levels, the instruments are the lagged differences of the corresponding variables. Inflation and GDP growth rates variables are added to all models but they are not statistically significant, hence they are omitted from the model. Finally, the models are estimated. The result of unit root test is summarized in Table 49.

Table 49: Unit Root Test Results-Turkey

Variables	Levels	First Differences
FINSIZ	-1.966	-6.437***
PRVCRD	3.021	-3.162**
STOVAL	-2.321	-5.688**
INTDEB	-1.577	-2.680**
LOANRE	-2.097	-3.587***
BANEFF	-13.649***	
STOTUR	-3.019**	
BANZSC	-2.889	-5.948***
STOVOL	-1.504	-4.361***
BANBRA	-0.119	-4.291**
STOLIS	-1.770	-4.376***

(1) ***, ** , * indicates that series are stationary at 1%, 5%, and 10% significance level respectively.

In Model 1, the influence of depth of banking sector and stock market on the size of the financial system is tested. All variables in the model ensure stationarity condition in first difference. Firstly, in order to analyse the cointegration of all variables Engle-Granger-two-step cointegration test, Johansen cointegration test and Gregory-Hansen structural cointegration test are applied. Afterwards, cointegration between variables is detected in the model by applying Gregory Hansen structural cointegration test due to the economic crisis and the following structural breaking in 2001. Then, the

model is estimated by separating data set into two sections that are before 2001 and after 2001. The estimation results are summarized in Table 50.

Table 50: The Results of Model 1-Turkey

2001 Crisis and Before			
Dependent Variable : Financial system size FINSIZ			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	16.602	5.742	0.021
PRVCRD	1.056	0.383	0.020
STOVAL	1.178	0.062	0.000
Adjusted R^2	0.923	**F-stat.**	73.539 [0.000]
D.W.d.stat.	2.222	**W:F-stat.**	0.120 [0.883]
J.B:F-stat	0.864 [0.649]	**B-G: F stat.**	0.213 [0.812]
After 2001 Crisis			
Dependent Variable : Financial system size FINSIZ			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	73.144	7.091	0.000
PRVCRD	0.620	0.126	0.001
STOVAL	0.539	0.223	0.046
Adjusted R^2	0.758	**F-stat.**	15.159 [0.0002]
D.W.d.stat.	2.339	**W:F-stat.**	2.210 [0.092]
J.B:F-stat	1.431 [0.488]	**B-G: F-stat.**	0.503 [0.613]

[1] D.W.d.stat.¨ indicates Durbin Watson first difference autocorrelation test statistics. [2] J.B: F-stat. indicates Jarque-Bare test for normality that are used for testing whether the distribution underlying a sample is normal. Null hypothesis is that errors are distributed normally. [3] F-stat. indicates F-statistics, in which the significance of variables are tested. [4] W:F-stat. indicates White variance test that establishes whether the residual variance of a variable in regression model is constant. Null hypothesis is that there is no variable variance between errors. [5]B-G:F.stat. indicates Breusch-Godrey test that is a test for autocorrelation in the errors in a regression model. Null hypothesis is that there is no serial correlation of any order up to p.

Before 2001 crisis, the coefficients of both variables are found statistically significant at 5% significance level. The increase in private credit by deposit money

banks (PRVCRD) and stock market total value traded (STOVAL) have positive effects on the size of the financial system. Considering the coefficient estimation value, stock market total value traded to GDP (STOVAL) variable has more contribution on the size of the financial system than private credit by deposit money banks to GDP (PRVCRD) or the depth of banking sector has. On the other, when after 2001 crisis period is analysed, the coefficients of both variables are found statistically significant at 5% significance level. However, conversely taking into the coefficient estimation value, private credit by deposit money banks to GDP (PRVCRD) or the depth of banking sector has more contribution on the size of the financial system than stock market total value traded to GDP (STOVAL) or depth of stock market.

Before Model 2 is estimated, cointegration of the variables has been analysed. Due to 2001 crisis, cointegration between variables is specified therefore the estimation is made in level form rather than taking differences of variables. International debt issues to GDP (INTDEB) variables are derived from dataset since 1995 therefore model 2 could not be estimated by separating data set into two parts, which cover before 2001 and after 2001, thus year (2001) is added as dummy variable to model 2. The results are summarized in Table 51.

In model 2, the influence of financial globalisation in banking sector and stock market on the size of the financial system is tested. The coefficient of international debt issues to GDP (INTDEB) variable that represents the level of globalisation in stock markets is positive, but statistically insignificant. On the other hand, loans from non-resident banks (net) to GDP (LOANRE) variable that represents the level of financial globalisation in banking sector is found statistically significant at 1% significance level. In other words, the level financial globalisation in banking sector has statistically impact on the size of the financial system.

Table 51: The Results of Model 2-Turkey

Dependent Variable : Financial system size FINSIZ			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	-24.638	18.055	0.195
LOANRE	4.911	1.063	0.000
INTDEB	2.814	2.376	0.257
Dummy 2001	34.122	5.983	0.001
Adjusted R^2	0.903	**F-stat.**	50.806 [0.000]
D.W.d.stat.	1.473	**W:F-stat.**	0.750 [0.652]
J.B:F-stat	0.552 [0.758]	**B-G: F stat.**	2.704 [0.110]

[1] D.W.d.stat.¨ indicates Durbin Watson first difference autocorrelation test statistics. [2] J.B: F-stat. indicates Jarque-Bare test for normality that are used for testing whether the distribution underlying a sample is normal. Null hypothesis is that errors are distributed normally. [3] F-stat. indicates F-statistics, in which the significance of variables are tested. [4] W:F-stat. indicates White variance test that establishes whether the residual variance of a variable in regression model is constant. Null hypothesis is that there is no variable variance between errors. [5]B-G:F.stat. indicates Breusch-Godrey test that is a test for autocorrelation in the errors in a regression model. Null hypothesis is that there is no serial correlation of any order up to p.

In model 3, the influence of financial efficiency in banking sector and stock market on the size of the financial system is tested. The findings of Model 3 in which the effects of bank efficiency (BANEFF) and stock market turnover ratio (STOTUR) on the size of the financial system are investigated and summarized in Table 52. Both variables are found statistically insignificant. In other words, there is insignificant correlation between the financial efficiency in banking sector and stock market and the size of the financial system.

Table 52: The Results of Model 3-Turkey

Dependent Variable : Financial system size D(FINSIZ)			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	-5.696	14.187	0.696
BANEFF	1.091	1.127	0.356
STOTUR	0.033	0.083	0.697
Adjusted R^2	0.114	**F-stat.**	0.646 [0.544]
D.W.d.stat.	2.199	**W:F-stat.**	0.657 [0.539]
J.B:F-stat	0.277 [0.870]	**B-G: F stat.**	0.712 [0.519]

[1] D.W.d.stat.¨ indicates Durbin Watson first difference autocorrelation test statistics. [2] J.B: F-stat. indicates Jarque-Bare test for normality that are used for testing whether the distribution underlying a sample is normal. Null hypothesis is that errors are distributed normally. [3] F-stat. indicates F-statistics, in which the significance of variables are tested. [4] W:F-stat. indicates White variance test that establishes whether the residual variance of a variable in regression model is constant. Null hypothesis is that there is no variable variance between errors. [5]B-G:F.stat. Indicates Breusch-Godrey test that is a test for autocorrelation in the errors in a regression model. Null hypothesis is that there is no serial correlation of any order up to p. [6]D indicates first difference.

In model 4, the influence of financial stability of banking sector and stock market on the size of the financial system is tested. Because of the structural breaks in 2001 and 2006, the cointegration is detected and two dummy variables are added to the model. All variables are used in the model as in level. In the following table, the results of Model 4 are presented. Z-score variable that indicates the stability of banking sector is found statistically insignificant, on the other hand, incompliance with the coefficient estimation, stock market stability (STOVOL) represented by stock price volatility is statistically significant at 5% significance level and the sign of coefficient is estimated negative. In other words, the increase in volatility in stock market leads to a decrease in the size of the financial system.

Table 53: The Results of Model 4-Turkey

Dependent Variable : Financial system size FINSIZ			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	101.262	7.864	0.000
BANZSC	0.054	0.094	0.584
STOVOL	-0.381	0.125	0.016
Dummy 2001	14.032	4.826	0.019
Dummy 2006	13.535	4.364	0.014
Adjusted R^2	0.723	**F-stat.**	8.844 [0.004]
D.W.d.stat.	1.472	**W:F-stat.**	0.977 [0.470]
J.B:F-stat	0.536 [0.764]	**B-G: F stat.**	2.269 [0.184]

[1] D.W.d.stat.¨ indicates Durbin Watson first difference autocorrelation test statistics. [2] J.B: F-stat. indicates Jarque-Bare test for normality that are used for testing whether the distribution underlying a sample is normal. Null hypothesis is that errors are distributed normally. [3] F-stat. indicates F-statistics, in which the significance of variables are tested. [4] W:F-stat. indicates White variance test that establishes whether the residual variance of a variable in regression model is constant. Null hypothesis is that there is no variable variance between errors. [5]B-G:F.stat. indicates Breusch-Godrey test that is a test for autocorrelation in the errors in a regression model. Null hypothesis is that there is no serial correlation of any order up to p.

In model 5, the influence of financial access in banking sector and market on the size of the financial system is tested. In the following table, the results of Model 5 are presented. Inconformity with the coefficient estimation, although bank branches per 100.000 adults as banking sector access (BANBRA) variable and number of listed companies per 1.000.000 people (STOLIS) as stock market access variable have positive effect on the size of the financial system and instead, these variables are found statistically insignificant.

Table 54: The Results of Model 5-Turkey

Dependent Variable : Financial system size FINSIZ			
Independent Variables	**Coefficient**	**Standard Deviation**	**p-value**
Constant	-22.613	82.241	0.794
BANBRA	2.928	1.848	0.174
STOLIS	19.394	20.887	0.395
Adjusted R^2	0.446	**F-stat.**	3.819 [0.098]
D.W.d.stat.	2.531	**W:F-stat.**	0.977 [0.470]
J.B:F-stat	0.717 [0.698]	**B-G: F stat.**	13.803 [0.030]

[1] D.W.d.stat.¨ indicates Durbin Watson first difference autocorrelation test statistics. [2] J.B: F-stat. indicates Jarque-Bare test for normality that are used for testing whether the distribution underlying a sample is normal. Null hypothesis is that errors are distributed normally. [3] F-stat. indicates F-statistics, in which the significance of variables are tested. [4] W:F-stat. indicates White variance test that establishes whether the residual variance of a variable in regression model is constant. Null hypothesis is that there is no variable variance between errors. [5]B-G:F.stat. indicates Breusch-Godrey test that is a test for autocorrelation in the errors in a regression model. Null hypothesis is that there is no serial correlation of any order up to p.

5.4.5 Comparison across Financial Centres Groups

Comparison of relative financial centres in country levels provides some surprising results. In this section, the results of all groups are discussed. All models are tested in banking sector and stock market. The consolidated results of all financial centre groups are summarized in Table 55.

Model 1 tests the relation between financial depth and the size of the financial system. Private credit by deposit money banks (PRVCRD) variable that represent the depth of banking sector is statistically significant in all groups except global financial centre group. The local banks play a great importance for building up a reputation of an IFC. In this perspective, the effect of the depth of banking on the size of the financial system supports Kindleberger (1973) who emphasises the role banking in the development of an international financial centre. In the development phase of banking activities, the lending and borrowing start locally then extend to national centres, finally become multinational. Stock market total value traded (STOVAL) variable that represents the depth of stock market is statistically significant in all groups. Turkey's

Table 55: Comparison of Financial Centres Groups

MODEL 1				Before 2001	After 2001
Independent Variables	**Global**	**Regional**	**National**	**Turkey**	
PRVCRD	0.525	0.306***	1.824***	1.056**	0.620**
STOVAL	0.488***	0.751***	0.413***	1.178**	0.539**

MODEL 2				
Independent Variables	**Global**	**Regional**	**National**	**Turkey**
LOANRE	0.670***	1.332	0.262*	4.911***
INTDEB	0.290	0.384	0.534***	2.814

MODEL 3				
Independent Variables	**Global**	**Regional**	**National**	**Turkey**
BANEFF	0.835	-1.904	-0.317	1.091
STOTUR	0.001	0.382***	0.039	0.033

MODEL 4				
Independent Variables	**Global**	**Regional**	**National**	**Turkey**
BANZSC	1.268	1.326	-0.089	0.054
STOVOL	-0.164	0.052	-0.404**	-0.381**

MODEL 5				
Independent Variables	**Global**	**Regional**	**National**	**Turkey**
BANBRA	3.748***	1.374**	0.181	2.928
STOLIS	1.060	2.102***	2.214***	19.394

(1) ***, ** , * indicates that variables are statistically significance at 1%, 5%, and 10% level respectively.

results after 2001 are nearly similar to national financial centre group. It is obvious that an active and is liquid capital market, not necessarily large one, is an essential component of the financial system. The significant relation between depth of the stock markets and the size of financial system certifies the previous research findings, which covers developed and high-income countries in the world. The global financial centre group can be regarded as developed countries so all countries in this group are also included in high-income groups by World Bank. According to the findings of previous researches, in developed countries, the capital markets contribute higher to the financial and economic development of country. On the other in developed countries, banks and stock markets are larger, more active, and more efficient. Considering previous studies conducted by Kindleberger (1973) and Reed, H. (1977), international financial centre assist the development in financial and business activities such increasing trade in the local hinterland of international financial centre, afterwards the hinterland gets bigger and reach a regional dimension in which the financial activities broaden. In the light of these findings, we can say that the capital markets on average are more developed in global financial centres.

According to Kunt and Levine's studies (1996, 1999, 2002)., stock markets are larger, more effective and has a higher portion in the financial system of the country than banks in developed countries, this kind of financial system is named as market based. The similar finding rose by Lynch is that the financial markets tend to be more important in developed countries so these countries are the mature stage of their financial development. Financial markets increase its importance relative to banks as the financial system matures (Lynch, 1996, p.11). Larger capital markets provide an important source of investment capital at low cost. A more developed capital markets supply a variety of products at lower cost, which is essential for financial development (Sukcharoensin and Sukcharoensin, 2013, p.344). A high volume of trading indicates a liquid market in which large amount of funds can be channelled to investors and firms fast; hence, stock market liquidity has positive effect on capital accumulation, productivity, and economic growth. In theoretical perspective, stock market encourages the long-term growth. Greater liquidity usually improves price discovery and lowers transaction costs. Stock market total traded value ratio positively affects the liquidity of

the capital markets (Kunt and Levine, 1996, p.295). The larger share of the capital markets in financial system relative to banking sector provide easier financing to the debtors. Allen and Gale testify that the banks stimulate inter-temporal risk sharing; on the other hand, capital markets stimulate cross-sectional risk sharing (Allen and Gale, 2000). Previous researches also show that, as countries become wealthier, stock markets become more active and efficient relative to the banks. Kunt, Feyen, and Levine (2012) empirically analyse the issue of financial structure and highlight that as economies develop, use of services provided by the capital markets increases relative to those provided by the banking sector. Levine and Zervos (1996) indicate that well-developed stock markets could offer different kinds of financial services than banking sector. Arestis, Demetriades and Luintel emphasise that the stock markets encourage the specialisation as well as the dissemination of information and reduce the cost of mobilizing savings (Arestis, Demetriades and Luintel, 2001, p.16-41). In the same way, in financial centre perspective, sophistication of the financial instruments and services increase in parallel direction with the development of the capital markets, which is a crucial for the development of a financial centre. Choi *et al.* (2002) point out the attraction of financial centres determined by the present scale of capital markets. Ragazzi (1973) emphasises the importance of existence of the broad and efficient financial markets in the creation of powerful financial system. Moreover, liberalisation of the financial markets enhances mobility of capital and raises the volume of the international capital flows for that reason, the financial centres become more international. The global financial centres require deep, liquid, and the globally integrated financial markets and the competition between financial centres is fiercer in capital markets platform. The empirical study's findings also call forth the same conclusion with the findings of previous scholars, so capital markets have higher importance relative to banking sector in the financial system if the financial centre has a regional and global structure.

On the other hand, banking sector has also impact on the size of the financial system in the financial centres. Banks are key players in eliminating liquidity risk, increasing investment in high return, and speeding up the process of economic growth. In the larger banking system, the more capital can be directed from savers to investors.

Fattouh (2000) debates that the banks located in a financial centre enable to access the financial markets in the centre therefore the banking sector should be improved. The results of empirical study confirm the findings of Boyd and Smith (1996, 1998) whose study emphasise that the banks are more important at the low levels of financial development. Bank-based systems grows more effectively and efficiently than market-based systems, particularly in underdeveloped economies, in which non-bank financial intermediaries are generally less sophisticated likewise Turkey. In emerging markets, such as China, the Russian Federation, India, Brazil, Malaysia, and Turkey, banks benefit from a large unbanked population as well as the strong credit demand that is required to finance economic growth. On the other hand, the volume of business activities outside the banking system is high. In the emerging markets, the banks also play a more active role as foreign investors, particularly within their own geographical regions. The expansion of the emerging market banks at both domestic and regional levels will shift the categorisation of financial centres, which is as well certified by the findings of this empirical study.

The financial systems with larger overall capital markets will provide also easier financing for real investment, which also supports domestic economy positively and relates to both larger securities markets and to more bank credit. The financial systems that rely primarily on one but not the other may be less efficient. The research findings indicate that the stock market as financial intermediary plays crucial role on the financial centre and the national financial centres have shifted from concentrating solely on the banking sector to the capital markets. For Turkey, the importance of banking sector in financial system is higher relative to financial markets after 2001, the size of banking sector is lower than their peer's therefore banking sector is not mature and there are many things to have to be accomplished. However being a preeminent regional centre could be only realised by the development of the capital markets, therefore the size effect of depth of stock market on the financial system is very meaningful. For that reason, Turkey should take steps to improve the deepening financial markets, especially stock market. Non-bank markets i.e. stock, bonds and derivative markets should be increased in absolute and relative sizes. Suggesting a mild but steady transition from a mostly bank-based model to one that is more complete and interconnected market based

system for financial centres, in which non-bank financial markets, stock markets, play a more central role.

In Model 2, the relation between the size of the financial system and the level of financial globalisation in the banking sector that is represented by loans from non-resident banks (net) variable is statistically significant in all financial centre groups except regional financial centres group. The weight of international banking contributes to the size of the financial system. On the other hand, the relation between the size of the financial system and the level of financial globalisation in the stock market that is represented by international debt issues variable is statistically significant only in national financial centre group. A country's financial system is connected to international financial markets. Although Turkey's result is very surprising, the global financial centres indicate high volume of international banking activities. Initially, the result of global financial centre is testified by the Adam Smith (1776)'s perspective. According to Adam Smith, financial services play an important role in real economic activities and functions, growing demand of financial services stimulate the foreign institutions (Citation from Wong, 2012, p.69-70). Gulamhussen (2007) raises the similar ideas (2007), which the agglomeration of banks facilitates the emergence of activities that are related to foreign exchange, money market trading, deposit taking, lending, syndicated loans, management of Eurobond issues and derivatives. Kinderberger (1973) attains the similar results that a financial centre is a place where the specialized functions of international payments and foreign lending and borrowing can be easily performed.

According to Abraham *et al.*, internalisation via domestic bank and presence of foreign banks determine the position of medium sized financial centres, which also testifies the finding of empirical study (Citation from Liu and Strange, 1997, p.655). On the contrary, according to the results of empirical study, Turkey's financial system behaves differently from national financial centre groups, international debt issues has no impact on the size of the financial system. We can draw our own conclusion on the level of financial globalisation in stock market as Turkey has underdeveloped debt market, and debt market instruments are not known and used by the companies. On the

other hand, the result of national financial centre group certifies the structure of national financial centre. A national financial centre offers more services to local customers, but allows the local customers to access the global financial system through cross-border financial activities. A national financial centre benefits from networking with financial institutions and markets outside boundaries, which enable them to offer services on a bigger scale. According to the previous studies, emerging markets gain access to international markets and financial globalisation has allow more capital to flow into sovereign bond markets. The integration in world financial markets reduces pressure on domestic interest rates and gives access to cheap international financing (Claeys, Moreno and Surinach, 2012, p.57). In our analysis, national financial centre group covers mostly the emerging market economies; the level of globalisation in stock market contributes to the size of the financial system.

In Model 3, the relation between the size of the financial system and the bank efficiency is statistically insignificant in all financial centre groups. Additionally, the relation between the size of the financial system and the stock market efficiency that is measured by stock market turnover ratio (STOTUR) variables is statistically insignificant except regional financial centre group. Efficiency has two meanings. In financial perspective, it means that financial markets reflect fundamental news rapidly in prices. On the other hand, from economist perspective, it refers to the resources required to fulfil a function. Furthermore, the inefficiencies could be heightened if the more-liquid products traded (Gaa *et al*., 2001, p.25). Large overhead costs may mirror inefficiencies in the banking system. Overhead costs may catch efficient investments in banking, not inefficiencies. Countries may have a sound financial superstructure such as sophisticated stock markets and banking systems, but may still lack the necessary human resources or managerial and corporate accountability, which are necessary for markets to be efficient. While efficient financial institutions tend to be more profitable, but the relation is not very obvious and close. Zhuravleva finds that the economic growth is associated with the efficiency of the financial sector, that is represented by interest rate spread but it is not a relation between the size of financial sector and financial efficiency (Zhuravleva, 2013, p.1998-1999). In our empirical study, statistically insignificant relation between efficiency in banking sector and the size of

the financial system is found. This insignificant relation in our finding is consistent with the results of the previous studies.

On the other hand, there is statistically significant relation between efficiency in the stock market and the size of the financial system in regional financial centre group. Statistically significant relation between efficiency in the stock market and the size of the financial system according to our finding certifies the hypothesis of Kurt and Levine (1996) in different perspective. Regional financial centres have smaller exchanges than global financial centres, but they are liquid and serving a region, so the stock market turnover ratio contributes to the size of the financial system. Stock market turnover reflects trading frictions and information that stimulates transactions. High turnover is often seen as an indicator of low capital market frictions. Massive and continuous liquidity would cause prices instantaneously reflecting fundamental information. Higher turnover is used as an indicator of low transactions costs. Small and liquid capital markets have higher turnover ratio but they have lower total value traded to GDP ratio (Kunt and Levine, 1996, p.295).

In model 4, Z-score (BANZSC) variable that represents the stability of banking sector is found statistically insignificant in all financial centre groups; on the other hand, stock market volatility (STOVOL) that represents the stability of stock market is statistically significant in national financial centre groups and Turkey. However, well-designed regulation and supervision could alter market imperfection and stimulate stability, z-score variable has no impact on the size of the financial system, but in national financial centres group and Turkey, high volatility leads to downsizing in the financial system so the excessive volatility leads to a weakening of investors' confidence. In most literature, less volatility reflects as greater stock market development. According to Federer (1993), high degree of volatility results in an insufficient allocation of resource. In the long run, financial intermediation reduces the growth in volatility. The financial centres may stimulate the growth at the cost of higher volatility in high-income countries (Beck, Degryse and Kneer, 2014, p.62). However, high volatility could be a sign of development since leak of information implies volatility in a well-functioning market (Kunt and Levine, 1996, p.298). The size of the

financial system has increased in combination with a low volatility of the financial markets relative to the economy as a whole in national financial centre group and Turkey.

In model 5, the access function explains the breadth of use of the banks and the stock markets; additionally financial access defines the degree to which the financial sector participants can access financial system. International as well as domestic market accessibility is thus critically important for any city to be an IFC. The relation between the size of the financial system and the financial access to banking sector that is measured by bank branches per 100.000 adults (BANBRA) is statistically significant in global financial centres and regional financial centre group. We can say under the light of Central Place Theory that spatial concentration of banking activities higher in the financial and regional financial centres, and banking operations have higher centrality in the global and regional financial centres. Conversely, number of listed companies per 1.000.000 people (STOLIS) variable that represents access to capital markets is statistically significant in regional and national financial centre group. The banking sector provides financial services to the real economic development and a well-developed capital markets, both primary and secondary markets, is an important element for the development of a financial centre. The attraction of more listing in stock markets increases the trading volume of stock exchanges and business opportunities and the size of the financial system. Although, in our empirical study, global financial centre group has the highest trend in time series of STOLIS variable and access to the stock markets determines the degree of competitiveness of an international financial centre the result of the empirical study unfortunately does not prove this situation. There is no relation between the financial access to stock market and the size of the financial system in global financial centre group. As seen in the findings of the empirical study, access to the financial system in Turkey has some problems, government authorities should carry on some plan to increase access to the financial markets and reduce unbanked population.

5.5 BENCHMARKING THE MAIN COMPETITORS OF ISTANBUL

In this part, the position of Istanbul Financial Centre is compared with eleven selected centres taking into consideration the banking system, the financial markets and instruments, and the financial regulation in micro perspective. We should look at the experience and achievements of financial centres in the financial structure respect. Some of eleven centres are at the top of the financial centre hierarchy, rest of them are emerging and neighbouring centres. These selected centres are Dubai, Hong Kong, Kuala Lumpur, London, Moscow, New York, Paris, Shanghai, Singapore, Tokyo, and Toronto. After briefly explaining the main characteristics, of the financial system and strengths and weaknesses of financial centres are briefly explained. All financial centres are compared with Istanbul based on various variables by using ranking analysis. The banking sector, the financial markets and instruments variables are simply ranked in order to see the difference in trend. Nine indicators are used for the banking sector, whereas 13 indicators are used for the financial markets.

5.5.1 Dubai Financial Centre

Dubai has been very rapidly developing as an international financial centre providing financial services to markets in the Middle East, Central, and South Asia. The primary focus of Dubai is to become a global hub for Islamic finance and Shariah compliant economic activity (DFIC, 2012, p.33-34). During the global financial crisis in 2009, Dubai was somehow meltdown (The Economist Intelligence Unit, 2012, p.3). The government gives all possible support the country's banking system. The banking system is considered one of the heaviest capitalised banking systems in the region (Central Bank of the United Arab Emirates, 2012, p.15). Commercial banks dominate the financial sector. Domestic banks are the most important lenders; they are followed by foreign banks and domestic Islamic banks that become important for the UAE banks system. On the other hand, the bankability ratio of adult population is around 60%. Retail lending to households is modestly growing, but new lending restrictions set by the Central Bank, according to which a bank is allowed to lend up to 100% of its capital base to local governments and 25% to retail borrowers. Several banks issue Islamic banking products, such as sukuk that looks like bonds but without interest payment. The

sophisticated instruments in banking sector are very limited for that reason the banks have less funds for lending. The banks increase their assets by either holding more cash or increasing deposits with the Central Bank. On the other hand, the banks are funding from core European Banks. Foreign liabilities of the banks are around one-fifth of total liabilities. The UAE will implement a nationwide credit bureau, for this reason lending to small to medium-sized enterprises is being carried out very cautiously (The Economist Intelligence Unit, 2012, p.3-6).

The Dubai Financial Market (DFM) and NASDAQ Dubai are the stock exchanges of Dubai in which equities, equities derivatives, sukuk, and conventional bonds are traded on. Furthermore, NASDAQ Dubai is currently one of the largest sukuk markets in the world (DFIC, 2012, p.33). The DFM and NASDAQ Dubai merged some of their operations in July 2010. Two stock exchanges suffer from low liquidity. In 2012, there was no IPO transaction according to The Securities and Commodities Authority (SCA). The SCA has been working in progress to introduce regulations related to short selling, market making, and other capital market activities 16 mutual funds are listed on the Dubai Financial Market in late 2012 cautiously. In August 2012, the UAE introduced new rules for local and foreign investment funds. The SCA is responsible for funds, formerly the responsibility in the Central Bank of the UAE. The regulatory requirement is more string. Foreign funds must be approved by the SCA offered through a locally licensed settlement agent (The Economist Intelligence Unit, 2012, p.8-10).

The Dubai Financial Services Authority regulates firms in the Dubai International Financial Centre (DIFC), beside the Central Bank of the UAE supervises financial institutions, and markets in the rest of the country. IFRS compliance is mandatory for DIFC firms, on the other hand, the Central Bank of the UAE works on bringing the financial system in compliance with the international standards. The Central Bank of the UAE will have prepared the banking sector for Basel III by 2015. Moreover, the federal government is making more efforts concerning to corporate governance in order to increase the international investors' confidence. The banks are bound by a number of new regulations by the Central Bank of the United Arab

Emirates. The Central Bank limits the number of foreign bank branches. The Commercial Companies Law of 1984 has been revised; this revision allows more market-driven pricing of shares on IPO and right issues. Other changes are in the areas of accounting standards, corporate governance, and company foundation, additionally the revision allows for higher levels of foreign ownership in certain sectors (The Economist Intelligence Unit, 2012, p.12-13).

Dubai has at the similar position in Turkey, but somehow Istanbul has more opportunities than Dubai. Although two centres have a capital market with low liquidity and market capitalisation, the range of financial instruments and the value of IPOs transactions are higher in Istanbul. Government's support and regulatory enhancements are the strength of Dubai. The volume of Islamic banking activities is larger than Istanbul. However, the foreigner restriction of the entrance to the banking sector is the main drawback in the banking sector. The range of products is limited and technologic development is low in banking sector, such as a credit bureau is new subject. The DFIC is a segregated centre and regulated separately.

5.5.2 Hong Kong Financial Centre

Hong Kong is the most sophisticated financial centres at the same time it is among the most important foreign exchange trading centre in the world. On the other hand, the liberalisation of China that will boost Shanghai as global financial centre threatens Hong Kong's financial sector. Hong Kong government plays the role of facilitator. The government keeps the individual and corporate taxes low across the board and it intervenes directly in its economy on an ad hoc basis. Additionally, the government accommodates opaque linkages between public and private sectors that enables deep interaction between domestic and international markets. In Hong Kong most markets are private (Pauly, 2011, p.32-33). Headline costs are high but this does not detract from overall competitiveness (Long Finance, 2013).

The most important banks are HSBC and Hang Seng Bank, both of which are units of HSBC Holdings of the UK, the Hong Kong unit of China's state-owned Bank of China, Bank of East Asia that is a local institution and Standard Chartered of the UK. In Hong Kong, funding costs of banks are likely to increase in in the next few years so

liquidity becomes tighter in the region. Although local banks are funded through deposits rather than wholesale markets, the loan-deposit ratio for all currencies remained at 71.9% at the end of June 2013. Demand for private banking from high-net-worth individuals is upward trend. The region is an attractive place for mainland China. Singapore also attracts savings from residents of other countries in the Asia-Pacific region. The Deposit Protection Scheme has protected all deposits in local and foreign currency up to a value of HK$500,000 approximately around US$65,000 since 2011 (The Economist Intelligence Unit., 2013. h., p.4-5).

The Hong Kong Stock Exchange is the centre's stock exchange and is one of the leading market place for derivative trading in the Asia and Australasia region. The absence of restrictions on foreign ownership of shares enables that many foreign investors are trading in the local stock market. After the financial crisis, due to the strong growth of China's economy, the interest of foreign companies listed in Hong Kong Stock Exchange has increased. Although Hong Kong was the leading global centre for IPOs between 2009 and 2011, the number and value of IPOs dropped in 2012 (The Economist Intelligence Unit, 2013. h., p.10). For local corporate companies, the corporate-bond market is in its early stages of development, public institutions like the Hong Kong Monetary Authority (HKMA) and the Hong Kong Mortgage Corporation (HKMC) have issued Hong Kong Dollar bonds in order to speed up local market development. At the same time, local government initiates a bond issuance program to provide a mechanism for hedging (Pauly, 2011, p.52). Hong Kong Interbank Offer rate is determined by supply/demand for funds between market players. Overseas entities' issuance of Hong Kong Dollar debt has become the most important segment of this market. Therefore, renminbi-denominated debt will become an important element of the bond market in the longer term. A wide range of derivatives products is also traded in Hong Kong Futures Exchange and Stock Exchange of Hong Kong. In Hong Kong's derivative markets, options are more active than futures by trading contract volume. .Futures on seven equity-index products, a variety of stock options and futures, futures on the one- and three-month Hong Kong Interbank Offered Rate, and three-year Exchange Fund note, gold futures and renminbi currency futures are offered. However, futures based on the Hang Seng Index dominate derivatives trading. Additionally, Hong

Kong has one of the world's biggest warrant markets by turnover in 2012 (The Economist Intelligence Unit, 2013.h. p.11-12). However, commodity futures in Hong Kong have not developed yet. Only gold futures are available in Hong Kong's commodity futures market. No distinctions exist in Hong Kong between onshore and offshore currency trading both in renminbi and in foreign currencies (Pauly, 2011, p. 48).

There is no Central Bank in Hong Kong. The financial regulation and supervision functions are broken up across the Hong Kong Exchange, the Securities and Futures Commission, the Office of the Commissioner of Insurance, the Hong Kong Monetary Authority, and various self-regulatory organizations (Pauly, 2011, p. 33). The HKMA that brings about some of the functions of a central bank is the government authority responsible for enabling monetary and banking stability. The HKMA's main duties are managing interbank money-market liquidity, regulating banks and developing a bank settlement-and-payment system, as well as a debt market through the issuance of Exchange Fund bills and notes. The HKMA is also responsible for developing regulatory frameworks that are compliant with international standards, especially Basel standards. The Banking Ordinance and the Exchange Fund Ordinance are two legislations, which provide the legal framework for banking supervision. In 2012, the government completed consultations on amendments on the tax system that is designed to adjust the local development of an Islamic-finance sector. The development of Islamic finance in the near future will deepen the trade linkages with Malaysia and Indonesia. In July 2013, Inland Revenue and Stamp Duty Legislation (Alternative Bond Schemes) was launched. It equalises the tax treatment of Islamic securities and conventional debt securities (The Economist Intelligence Unit, 2013.h. p.12-13).

Hong Kong is a leading global financial centre. Hong Kong performs well in all of the key competitive areas in the financial system. The regulatory and supervisory system is superior. No distinctions exist in Hong Kong between onshore and offshore currency trading both in renminbi and in foreign currencies. Hong Kong wants to be a player in Islamic finance sector. Hong Kong's main weaknesses are commodity

derivative and domestic debt securities trading. On the other hand, efficiency in banking sector is low. Istanbul could not compete with Hong Kong yet.

5.5.3 Istanbul Financial Centre

The banking sector is dominated by a few large domestic banks some of which are state-owned and some private. The main foreign players that are Finansbank (National Bank of Greece), Denizbank (Sberbank of Russia), HSBC (UK), and ING (Netherlands) are considerably smaller. Due to the problems in developed economies during the financial turmoil and the Euro Zone crisis, in particular the owners of some financial institutions, such as Denizbank sold by Dexia to Sberbank, Citibank sold their retail operations to Denizbank, General Electric sold its stake in Garanti disinvested. The privatisation in the banking sector has been slow. Mergers between Turkish banks have been very rare. On the other hand, the degree of concentration is high. The five largest banks consist of nearly three-fifths of the sector's total assets and about 56% of loans. The growth of credit to the private sector is due to low interest rates. Although household and private sector corporate debt rose during the credit boom, they stayed relatively low, around 20% of GDP for households and about 45% of GDP for the corporate sector. Turkish banks have rarely used securitisation to fund mortgage lending. The Central Bank and the Banking Regulation and Supervisory Agency (BRSA) manage their action to prevent the credit growth. Turkish banks have had to expand their branch networks to increase their return on retail banking, particularly credit cards and consumer loans due to low returns on government paper. Turkish residents are minor users of bank accounts. Some 58% of the adult population have an account at a formal financial institution according to survey conducted in late 2011 by the World Bank. The ratio of NPLs, which was lower than previous years, was standing at fewer than 3% of total credit in May 2013 (The Economist Intelligence Unit, 2013.t. p.3-6).

It is expected that the Islamic finance will grow in near future. Turkey's Islamic banking institutions are known as "participation banks" that offer a wide range of banking products including pensions. Ziraat Bank, largest state-owned bank, announced that it is planning to establish a separate participation bank conducting Islamic finance

activities (The Economist Intelligence Unit., 2013.t. p.6). The Borsa Istanbul formerly known as Istanbul Stock Exchange is only stock market. Around 60-70% of the value of the stocks traded on it is conducted by the foreign investors therefore the performance of the stock market is likely to be tied to changes in the global financial markets. The Borsa Istanbul 100 Index represents 90% value of the national market and is very volatile. At the end of 2012, 242 companies were listed in Borsa Istanbul. There were 16 IPO at the same period. In June 2013, the Borsa Istanbul merged with gold and derivatives exchanges. Afterwards, in July 2013 Borsa Istanbul signed a strategic partnership with NASDAQ OMX that is a US-based exchange group, which provides platforms for many exchanges around the world. The derivative exchange established in İzmir in February 2005, which was the single provider of derivatives contracts for commodity and financial products. Turkdex, the Turkish derivatives market merged with Borsa Istanbul Futures & Options Market (VIOP), BIST is also integrating the Istanbul Gold Exchange. All trades, derivatives and listed securities, are cleared and settled through Takasbank (The Economist Intelligence Unit.t., 2013, p.10-12). The foreign-exchange market has a highly developed All settlements are made automatically through electronic system connected to a main database at the Central Bank. However, the currency futures market that was launched in 2001 is thin. OTC futures contracts in foreign exchange are traded both between banks and on behalf of customers for one to three month. Most forward contracts traded between individual banks are overnight. Rarely, commercial banks trade forward contracts with the central bank that regulates strictly the market (The Economist Intelligence Unit., 2013.t. p.11-12).

Due to banking crisis, financial regulation has improved in Turkey over the past decade. A new banking law published in 2005 has improved the supervisory and regulatory environment. The banking law imposes lending limits on the banks. The BRSA, reports directly to the prime minister and the Council of Ministers, oversees the implementation and supervision of banking regulations. Moreover, it issues amendments and clarifications to existing banking laws and regulations in the form of communiqués. The BRSA conducts on-site inspections, determines corporate governance structures, establishes processes and principles, and amends the Turkish regulatory framework. Banks in Turkey have to take permission from the BRSA for

mergers, liquidations, and establishing partnerships with individuals or corporations based outside the country. Under Law 5411, the BRSA is responsible for the principles and procedures related to liquidity requirements. Banks must maintain minimum net worth/risk asset ratios of 8%, in line with Basel-based Bank for International Settlements (BIS). Basel II standards came into force in July 2012. Moreover, the BRSA has conducted the Basel III accord compliance process in line with the Basel committee's timetable. Loan to Value (LTV) ratio for a real estate or consumer loans is set up by the BRSA. Turkish law bans investment banks from accepting deposits. All banks must become members of the Banks Association of Turkey (The Economist Intelligence Unit, 2013.t. p.12-13). The Capital Markets Board is responsible for regulating and supervising the primary and secondary capital markets. Because of the government's attempt for positioning Istanbul as a regional financial centre, a revised Capital Market Law, which accounts for new investment fund structures, capital-raising products and listing procedures, passed in 2012. The Central Bank is responsible for monitoring banks' compliance with reserve requirements, carrying out open-market operations and supervising the interbank markets in Turkish Lira and foreign exchange. The Savings Deposit Insurance Fund (SDIF) managed by the BRSA funds a guarantee on bank deposits. The SDIF guarantees a maximum of TL50,000 for each account. However, the SDIF is used to capture control of troubled banks and to finance their rehabilitation or liquidation (The Economist Intelligence Unit, 2013.t. p.14-15).

5.5.4 Kuala Lumpur Financial Centre and Malaysian International Islamic Financial Centre

The banking sector is important source for fund raising. 43 banks 27 of which are conventional lender and 16 of which are Islamic Bank were operating in Malaysia as of December 2012. Malayan Banking (Maybank), Public Bank, CIMB Bank, Hong Leong Bank and RHB Capital that have extensive branch networks are the main local banking groups. The most active commercial and investment banks have operations in Malaysia. The largest foreign-owned banks operating in Malaysia are HSBC Bank Malaysia and Singapore's United Overseas Bank and OCBC Bank. Large corporations demand less bank loans so companies want to finance through capital markets to meet their financial needs. However, demand from SMEs grows as the government continues

to encourage an expansion in lending to SMEs. Malaysians are relatively keen users of bank accounts (The Economist Intelligence Unit, 2013.m. p.5-7). Malaysian International Financial Centre was set up in the late 2006. Under Securities Commission of Malaysia and Bank Negara Malaysia, two Shariah Advisory Council that guideline the development of Islamic finance market, instruments, and institutions, are set up (PricewaterhouseCoopers, 2008, p.15).

Bursa Malaysia is the stock market in Kuala Lumpur. All transactions are cleared and settled through Bursa Malaysia Securities Clearing, which is a wholly owned subsidiary of Bursa Malaysia. Government aims to attract greater inflows of FDI, which has a positive impact on securities markets (The Economist Intelligence Unit, 2013.m. p.11-12). In Bursa Malaysia, 86% of all listed equities are Shariah compliant. In 1999, Islamic Equity Index known as the Kuala Lumpur Shariah Index was developed. In 2007, Bursa Malaysia introduced two new Shariah Index that are the FTSE Bursa Malaysia EMAS Shariah Index and the FTSE Bursa Malaysia Hijrah Index with the FTSE Group (PricewaterhouseCoopers, 2008, p.23; p.30). All of Malaysia's commercial banks and financially strong investment banks can trade on the foreign-exchange market. Nevertheless, the investment banks are permitted to deal only for their own accounts and for customers with whom the bank has fee-based relationships. The investment banks are not allowed to accept foreign currencies from individuals, to hedge forward contracts for customers or to engage in trade-financing activities engaging letters of credit. The maturity of repos is usually less than four months, mostly up to one month only, though the maximum maturity is one year. Most repos entail certificates of deposit, treasury bills, and Bank Negara Malaysia monetary notes. Commercial paper that is sharia compliant is issued in combination with medium-term notes, and is commonly used as an instrument for corporate financing. In recent years, the ringgit debt market has expanded in size because of revised and enhanced regulation. The Malaysian debt market has grown recent years due to regulatory changes and low interest rates (The Economist Intelligence Unit., 2013.m, p.12-13). Privatization of large monopolies such as telecommunication and electricity companies have increased large amount of funds through the equity market. Exchange-traded financial derivatives are little used. To improve accessibility, Bursa Malaysia

Derivatives entered into a strategic partnership with the CME in 2010. The presence of foreign investors in the markets is more significant (IMF, 2013). Bursa Malaysia Derivatives (BMD) offers ten products, but three of which have strong trading volumes: crude palm oil futures, KLCI index futures and three-month Kuala Lumpur Interbank Offered Rate (Klibor) futures. Newly popular instruments include "commodity murabahah" that were initiated by Bank Negara Malaysia (The Central Bank) in 2007 in order to improve the management of short-term liquidity in the local Islamic interbank money market. Commodity murabahah is a cash-deposit to facilitate liquidity management and investment. As interest payments are not allowed under Islamic law, returns are based on the sale and buy-back of commodities. Bursa Malaysia established the Bursa Suq Al-Sila ("commodities market" in Arabic) in 2009 to facilitate such transactions (The Economist Intelligence Unit, 2013.m. p.12-13).

Bank Negara Malaysia (BNM) that is the central bank is the regulator of banks, which encourages the development of financial services that are in compliance to Islamic law. Whereas the Securities Commission supervises firms engaged in operations of financial markets, securities and derivatives dealing, fund management, corporate-finance and investment advice. In 2009, the Securities Commission issued listing regulations that are targeted at inviting more foreign companies to list on Bursa Malaysia. Additionally, the authorities want to see more financial products offered on Bursa Malaysia (The Economist Intelligence Unit, 2013.m. p.14-15).Malaysian International Islamic Financial Centre is managed by the collective efforts of Banka Negara Malaysia, Bursa Malaysia and Labuan Offshore Financial Services Authority. Products and services under Malaysian International Islamic Financial Centre can be offered to both domestic and foreign investors in any currency (PricewaterhouseCoopers, 2008, p.20).

Kuala Lumpur is the main trading hub for Islamic finance. The government supports the Islamic finance. Both banking sector and capital markets in Kuala Lumpur are stronger and more developed than İstanbul. The weaknesses of Kuala Lumpur are low volume of exchange traded financial derivative and high NPL ratio in the banking

sector. Kuala Lumpur is the biggest rival of Istanbul in Islamic finance, but Istanbul should deeply analyse Kuala Lumpur‘s success story.

5.5.5 London Financial Centre

London is the one of the leading international financial centres in the world and the biggest financial centre in Europe (The City of London, 2011, p.6). London is an old and traditional international financial centre, also an important city in trans-national bank lending, foreign stock exchange trading, international bond issuance, foreign exchange trading. London was predominant between 1830 and 1918 when the British Empire covered much of the world. Between 1918 and 1970, London gave primacy to New York. Now, London has now recaptured its status as the world’s premier financial centre. London provides their services globally. London has the largest share in the international markets. The banking and the capital markets have significant role in the UK financial sector that accounts for 10% of GDP (The Economist Intelligence Unit, 2013.u. p.4). London invents the market-dominated financial system known as the Anglo-Saxon model.

The UK banking system is centralized and the UK banking system has strongly attracted the foreign banks due to the leading and long-standing role of London as an international financial. London is an important centre for commercial, investment, international and private banking. Mainly four institutions dominate the banking sector: Barclays, HSBC, Lloyds, and RBS. As an international banking centre, there were 251 branches and subsidiaries of foreign banks across the UK in March 2011, foreign banks third of which are from euro area manage half of the total UK banking sector assets that are £8.1 trillion at the end of 2011. Nearly half of investment banking activity is conducted in the UK. The UK is also dominant in Islamic banking services, trading 20 banks, five of which are fully Sharia compliant (The City of London, 2011). Large UK shadow banking had to diminish because of the financial turmoil in 2007-2009 at which a rapid deterioration in global credit markets at peak. Consequently, the financial system had to be backed by a range of state guarantees The Bank of England obliged the banks to raise their capital to guard against losses. The shares of two large banks, Royal Bank of Scotland and Lloyds, were taken by the state. In 2008, the UK

government initiated the UK Financial Investment as the holding company for its shares in Royal Bank of Scotland and Lloyds Banking Group. Several large UK banks diminished their investment banking operations (The Economist Intelligence Unit, 2013.u, p.3-5).

London capital market is the largest and most developed in the Europe and is very sophisticated. London is also a centre an important place for foreign listed companies, trading in international bonds and foreign equity. London is also leading centre for IPOs, 10% of worldwide IPOs were raised from London Stock Exchange in 2011. The UK is also a leading centre for trading international bonds (The City of London, 2013.a). After merging Borsa Italiana with the LSE, the LSE Group became Europe's most expanded exchange group in cash equities, fixed-income and post-trade services. On the other hand, the regulators banded the merger of the LSE and TMX Group (Toronto-Canada) so mega mergers enforce antitrust ground (The Economist Intelligence Unit, 2013.u. p.10). The UK has two derivatives exchanges. The UK is the leading centre in exchange traded futures and options. Commodity trading forms an important part of the London financial sector, and London hosts two major derivatives exchanges that account for around 15 % of global trade in commodities (The City of London, 2011). NYSE LIFFE is a subsidiary of NYSE Euronext and Turquoise Derivatives Intercontinental Exchange (ICE) agreed to acquire NYSE Euronext, a large charge of profit comes from LIFFE formerly known as the London International Financial Futures and Options Exchange (The Economist Intelligence Unit, 2013.u. p.10). NYSE LIFFE is the biggest exchange for soft commodities and the leading exchange for the trading in short-term interest rate and equity options whereas ICE's main expertise is on energy products, it is an electronic regulated exchange. Moreover, London Metal exchange is the biggest non-ferrous market in the world (The City of London, 2011, p.6). Besides a large proportion of trading in precious metals takes place on the London OTC market. Gold and silver transactions are cleared at the London Bullion Market Association (The City of London a., 2013, p.13). London is a prominent centre for energy brokers and carbon funds. London is a leading centre for energy brokers and carbon funds. European Union (EU) Emissions Trading Scheme (ETS) futures and options contracts are traded in the European Climate Exchange in London

(IMF, 2011). London is also a main place for OTC derivative trading (The Economist Intelligence Unit, 2013.u. p.10). The biggest market in the world for interest rate derivatives traded OTC with 46% of global turnover is in the UK as of April 2010 (The City of London, 2011) London is the leading western centre for Islamic finance. The government has supportive policies concerning the broadening of the market for Islamic products. 31 sukuks are issued on London Stock Exchange (The City of London, 2013.a. p.15). The foreign exchange market that is named as Euromarket is the largest in the world.

The UK, EU regulators and the US could not push more standardized contracts being traded on exchanges and cleared through counterparties. According to April 2010 data, 36.7% of all transactions in foreign exchange market are processed in London. In the UK, the sterling and the euro-commercial paper market in which commercial paper in any currency other than sterling are traded are established (The Economist Intelligence Unit, 2013.u., p.11). In the UK, the regulatory regime is liberal. The Big Bang of 1986 removed barriers helped the London International Financial Centre to be a leader in banking and capital markets During the Big Bang the barriers of foreign ownership in local institutions were removed, foreign banking groups can buy local banks and foreign firms and entrepreneurs with more capital might come into the market (Loechel, 2010, p.7). A new framework was initiated in April 2013. Two new bodies that are the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA) substituted for the Financial Services Authority. This division is called "twin peak." approach. The goal of the new system is to improve standards for better and interventionist supervision. The PRA that regulates all deposit-taking institutions, investment banks, and insurers is the subsidiary of the Bank of England. Its main function is to encourage the stable and prudent operation of financial system. Conversely, The FCA is a stand-alone body; his main responsibilities are the regulation of conduct in retail and wholesale financial markets and the infrastructure that supports these markets and investor protection. On the other hand, the Bank of England plays the role of the lender of last resort, has responsibility for monetary policy and the stability of the payments system. The Bank of England has responsibility for macro-prudential supervision and oversight of micro-prudential supervision. Moreover, a new Financial

Policy Committee that has responsibility for overall financial stability, preventing the build-up of credit and asset bubbles, and monitoring the shadow banking sector has been created within the Bank of England (The Economist Intelligence Unit, 2013.u., p.11-12).

London is a traditional and historical global financial centre. London is the leader in all segments of the financial markets and the banking. London is in the top quartile in over 80% of criteria used for the ranking of financial centres. London is especially strong on people, market access, and regulation. However, London was hit by financial crisis and showed weaknesses. The efforts of cities from emerging economies like Dubai, Mumbai, and Shanghai promoted their individual development are showing results and have weakened London. Another threat is that the foreign banks concentrate on their domestic operations and domestic markets during financial crisis and the strict EU's regulation that is stricter than previous one prior to financial crisis (Loechel, 2010, p.8). The main negative comments concern corporate tax rates and operational costs (Long Finance, 2013). Istanbul could not compete with London yet.

5.5.6 Moscow Financial Centre

Russia has a relatively large and state dominated banking system that controls almost 60% of the sector, but the banking sector provides an inadequate level of financial intermediation. Sberbank that is state-controlled, the Soviet-era state savings bank dominates the sector. As part of a privatisation programme, the government fully will privatise the second largest bank, VTB, the second-largest bank by 2016-2017 and decline the state's share in Sberbank. There are too many small banks; this creates a hurdle to effective supervision. Most banks are poorly audited. Foreign ownership of the banking sector is lower than in other central and east European countries. Russia joined the World Trade Organisation in August 2012. This agreement lowers the barriers to entry for foreign banks, which enters to the local banking market through either newly opened or acquired Russian banks have limited loan exposures or funding sources outside national borders, but Sberbank bought DenizBank, which is the eighth largest bank in Turkey, from Dexia in June 2012 (The Economist Intelligence Unit, 2013.r., p.3-6).

Lack of institutional investors slows down the development of the securities market. The Moscow Interbank Currency Exchange (MICEX) and the Russian Trading System (RTS) that are the two main exchanges merged to make Moscow a global financial centre in December 2011. The name of new exchange group is Moscow Exchange Group in June 2012 MICEX-RTS introduced new online information and trading system that is called IPO Board so as to attract companies for making IPOs.and to increase securities trading for corporate bonds (The Economist Intelligence Unit, 2013.r., p.11). The amount of IPO will be increased by the government's medium-term privatisation plans. The government intends to privatise several large companies; but the deterioration of global economic picture may hamper it. The government also targets to increase the number of derivatives traded and improve legal environment in financial markets such as price manipulation, insider trading, and financial markets for misconduct (The Economist Intelligence Unit, 2013.r. p.12). The private bond market has grown rapidly, but remains quite small. Russian companies also borrow in the global debt market (World Bank, 2012). Russian banks choose to lend companies through bond issues, which explain the relative popularity of bond issues and large portfolios of bonds held by Russian banks. The Russian bond market is dominated by large, especially state-owned companies. There are no constraints on foreign investment in sovereign, regional, municipal, and corporate debt instruments, including Eurobonds and US-dollar denominated bonds, issued offshore. On Russian Stock Markets, foreign investors buy company shares or derivatives through licensed brokers. Only Russian-registered and licenced companies may trade on stock markets (The Economist Intelligence Unit, 2013.r. p.12-13). There is a well-developed foreign exchange market, some of transactions are fulfilled on the MICEX, and around 30 percent of total trading takes place on interbank OTC market. There are three parts to the money market: (i) an interbank market in unsecured deposits among the fifteen largest banks; (ii) a market for repos; and (iii) a market for bills of exchange, which is named as veksels. There are markets in currency swaps on MICEX and OTC from banks. There are no interest-rate swaps, because the legal basis has not been established (World Bank, 2012). The futures and options market (FORTS) on the RTS, started to operate in 2001, in which derivatives have been traded continuously since 1994. Trading volume in derivatives has grown rapidly in recent years. Single stock futures, equity index futures, interest

rate futures, commodity futures, are traded. FORTS makes available market participants to hedge price-related risks on the stock market, the foreign-exchange market, and debt and commodity markets. Participants can trade using their own terminals through internet connections or on workstations provided by RTS. Currency futures are traded on the MICEX that is the main venue for currency futures trading. Currency trading on the MICEX-RTS takes place between 10 am and 5 pm. Since January 2012, the MICEX-RTS has introduced direct market access, which permits trading session members to register their clients on the trading and clearing system of the exchange. The MICEX offers futures on the rouble against the euro and US dollar and on the euro-US dollar exchange rate, additionally futures on the compounded Mosibor overnight interest rate and the three-month MosPrime rate. Settlement is fulfilled on the MICEX derivatives market. The futures and options markets operated by the MICEX and FORTS are likely to be integrated after the merging of the two exchanges (The Economist Intelligence Unit, 2013.r, p.13).

The country's fifth-largest bank, the Bank of Moscow, bailed out in in June 2011, so the banking supervision was weak and smaller banks required recapitalisation. The Central Bank of the Russian Federation is Bank of Russia. Bank of Russia set up an independent authority to regulate the financial markets. Bank of Russia will gradually make stronger its supervisory powers over the banking sector. The new rules that increase the power of Bank of Russia were approved by the government on January 24, 2013. A mega regulator was created including The Federal Financial Markets Service (FFMS) in the Bank of Russia. From January 2015, all functions of the FFMS will be transferred to the structural subdivisions of the Bank of Russia (The Economist Intelligence Unit, 2013.r, p.3-5; National Association of Securities Market Participants in Russia (NAUFOR), 2013, p.89). The FFMS regulates the securities markets. The responsibilities of FFMS, which was expanded in 2011 cover licensing market participants, registering securities issues, and enforcing the relevant laws and regulations. After its merger with the Federal Service for Insurance Supervision, it additionally regulates the insurance industry. On the other hand, the FFMS delegates certain powers to self-regulatory bodies. One of which is the National Association of Securities Market Participants (NAUFOR) that supervises and administers compliance

with FFMS regulations by main brokers on Russian stock market(The Economist Intelligence Unit, 2013.r, p.14).

Moscow is one of the main competitors of Istanbul. Moscow is also located in same geography with Istanbul. The government gives the support for Moscow International Financial Centre and takes steps for restructuring the financial system. Istanbul has a better position in debt securities transactions, the volume of IPO and somehow in banking sector except ROE level. The major obstacles of Moscow are dominance of state-owned corporations throughout the financial system, barrier to entry of financial enterprises and personnel, inadequate legal and regulatory framework for the financial system. Istanbul could perform better than Moscow if it takes necessary actions.

5.5.7 New York Financial Centre

New York provides their services globally. Financial innovation in New York has continued ever since. The small and medium-sized companies use the banks as the main source of credit for consumers and for many businesses, on the other hand larger companies use heavily capital markets for debt and equity financing. According to the Federal Deposit Insurance Corporation (FDIC) data, there were 5,980 commercial banks and 960 savings institutions in the second quarter of 2013. The US banking system is dominated by a few top investment banks, followed by a tier of smaller regional banks. According to the Fed, the largest commercial bank in terms of assets is JPMorgan Chase, following it were Bank of America, Citigroup, and Wells Fargo at the end of 2012. After the financial turmoil, the top-tier banks were consolidated and the huge banks were created, which resulted in “too big to fail” situation. Deutsche Bank (Germany), TD and BMO (both of Canada), HSBC, RBS and Barclays (all UK), and Credit Suisse and UBS (both of Switzerland) are foreign rivals of US banks. Foreign banks are competing on equal terms primarily with domestic banks. According to FDIC survey in 2012, 8.2% of adult population is unbanked; on the other hand, household sector is heavily indebted. On corporate side, the debt appetite of the firms are high, but the leverage ratios for firms are not as high as household (The Economist Intelligence Unit., 2013.a. p.3-5). New York is the centre of innovation for leveraged lending that is

the lending of capital to companies with a rating below investment-grade and securitization (Bloomberg and Schumer, p.13-14). The level of NPLs continues to decline since 2012. The delinquency rate on residential housing loans remained at 9.4%, up from rates of less than 2% pre-crisis; this indicates the recovery in housing market. According to the results of stress test run by the Fed in 2013, the banking sector has been gradually recovering. This test measured the performance of banks' equity capital in a hypothetical highly distressed economic scenario (The Economist Intelligence Unit, 2013.a. p.6).

The United States'financial system is market-based, few medium-sized and large firms. The NYSE that is also the partner of Euronext in Europe is the country's largest equities market for mature enterprises. NASDAQ is the second-largest US exchange for new and increasing enterprises. The bond markets, especially government bond markets are highly deep and liquid (The Economist Intelligence Unit, 2013.a, p.11-13). Nevertheless, London is rapidly beings an effective alternative for non-US corporations so the corporate issuance and trading markets are large and central to customer relationships for commercial and investment banks (Bloomberg and Schumer, 2007, p.57). IPOs market crashed in 2008-2009 period because of financial turmoil. US government Treasury bills issued for 13 or 26 weeks periods (T-bills) are a leading money-market investment. Moreover, commercial papers issued by corporations with short-term are another important money-market instrument in the US (The Economist Intelligence Unit., 2013.a, p.11-13). Foreign-exchange transactions cover spot, forward contracts, foreign exchange swaps, and over-the-counter options. The International Securities Exchange (ISE) that is the largest trader of equity options also operates in New York. ISE is owned EUREX that is a leading global the derivatives exchange (The Economist Intelligence Unit, 2013.a, p.12). New York has the dynamic and innovative derivatives market and large well-structured debt market, but in recent years, London has got superior position for innovation, risk management and investment relative to New York (Bloomberg and Schumer, 2007, p.54). New York is also home to the New York Mercantile Exchange, which is the largest commodity futures exchange.

The US regulatory system comprises a variety of regulators at the national and state level for the various segments of the financial services industry, such as commercial banks, savings and loan associations, credit unions, industrial banks, investment banks, insurance, companies, finance companies, money brokers, and others. For the consolidated supervision, multiple regulators that are the Federal Reserve, Office of Thrift Supervision, and the Securities and Exchange Commission (SEC) also exist with different sets of rules regarding organizational structures, capital, and risk management. The flexibility and multiple points of contacts appear a problematic issue in the US financial system; a regulator could not make decisions and take actions relatively quickly, since speed to market is an important factor in the highly competitive world of financial services (Bloomberg and Schumer, 2007, p.81-82). The monetary and the financial stability are commanded by the Federal Reserve and its functions and responsibilities were enhanced following the crisis of 2008. The main new domestic regulation is the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act that touches every aspect of financial system since financial crisis 2008. However, the Dodd-Frank Act does not restructure the regulatory scheme, but it is a layer on top of existing agencies, which coordinates council. Additionally, a new financial consumer protection bureau is set up inside the Fed. However, the regulatory responsibilities of the Federal Deposit Insurance Corporation, the Securities and Exchange Commission, the Federal Insurance Office (newly established in the Treasury Department), and other agencies in a complicated federal system of government are not consolidated. Global banks agreed the Basel III Accord that forces the banks triple amount of capital held on their balance sheet in September 2010. Global bank regulators agreed on the Basel III Accord in September 2010. The minimum-capital-ratio rule will have phased in between 2013 and 2019 (The Economist Intelligence Unit, 2013.a., p.13-14; Pauly, 2011, p. 70). Other nations liberalized their financial systems, while the USA initiated Sarbannes-Oxley Act and New York's advantage eroded.

New York is a global leader. At the same time, New York is a historic and traditional financial centre like London. People and market access are the main strengths. Most criteria in the financial system are rated excellent. Other nations liberalized their financial systems, while the USA initiated Sarbannes-Oxley Act and

therefore New York's advantage eroded In the last years, the US 'regulators proposed amendments to the Basel II standards, then US bank came to a disadvantageous position relative to their international competitors. For this reason, the US leadership put brake in banking sector whereas London puts itself better position and increases talented workforce. The flexibility and multiple points of contacts for regulators appear a problematic issue in the US financial system; a regulator could not make decisions and take actions relatively quickly, since speed to market is an important factor in the highly competitive world of financial services and the financial centre. However, Istanbul could not compete with New York in the near future.

5.5.8 Paris Financial Centre

Paris is the largest centre for financial services second only to London in Europe. The French banking and financial system is very open to international markets. France has moved to from a largely bank-based model towards a capital market-based model. Several banks operate in France, after 15 years of consolidation process, some banks consolidated. The big five French banks account for over 75% of all deposits, over 60% of all lending and around 50% of total assets. There are diverse mixes of sub banking activities in the banking sector, for instance retail and commercial banking, consumer credit, leasing and equipment finance, insurance, private banking, asset management, and corporate and investment banking. Domestic institutions will remain dominant within the retail-banking sector. BNP Paribas, Crédit Agricole, Société Générale, BPCE, and Crédit Mutuel are the five leading banks. Among them BNP Paribas has international banking activity. Although the banking system is mostly in private sector, the state still own several crucial institutions, such as the Caisse des Dépôts et Consignations (CDC) that invests in infrastructure projects and operates pension funds. State also plays an important role in saving market by determining interest rates for tax-exempt accounts. High market concentration, the dense network of branches and tax discrimination in favour of mutual banks create barriers for foreign banks in retail banking. Foreign firms have greater success in wholesale banking and securities trading. In 2012, the ratio of NPLs increased. Outstanding bank loans to non-financial companies, which comprises for 39% of overall lending to the private sector, declined in the second quarter of 2013 (The Economist Intelligence Unit, 2013.f., p.3;

p.5). Capital adequacy ratio of French banks is below the average of European banks (IMF, 2012.f.). The French banks solvency ratios are under the depression due to large holdings of bonds of heavily indebted euro area countries. BNP Paribas, Crédit Agricole, and Société Générale were the bulkiest holders of Greek debt securities. During 2012 and 2013 these three international French banks shrunk their balance sheets by selling off assets in order to y to reduce US dollar financing needs (The Economist Intelligence Unit, 2013.f, p.5-6).

France's stock exchange is Euronext Paris. In September 2000, Paris Stock Exchange merged with Amsterdam, Lisbon, and Brussel and established Euronext NV. Euronext Paris owned by New York Stock Exchange Euronext (NYSE Euronext) is the second largest stock exchange in Europe. The number of new listings has declined sharply in recent years, similar to other global stock markets. In 2012, there were 32 IPOs, which were 54 in 2011 (The Economist Intelligence Unit, 2013.f. p.11-12). France is one of the leading countries in Europe for corporate bonds. In addition to this, France has the second highest outstanding value of bonds issued by financial institutions and the fourth highest outstanding value of international bonds in March 2013 (The City UK, 2013, p.17). The public and semi-public sectors dominate the primary bond market. The legislation is in line with international norms; therefore, bond issuance is more attractive for corporations and financial institutions. The net daily turnover on the Paris market of foreign-exchange transactions that are spot, outright forwards, foreign-exchange swaps, currency swaps, currency options and other foreign-exchange instruments transaction increased up by 25% compared with the previous triennial international survey conducted by BIS. French has active OTC markets. Foreign-exchange derivatives and credit derivatives, especially CDS are traded. Although swaps are still the most popular form of contract, forward rate agreements raised. The use of securitisation and credit derivatives is very common although the market has not been well developed yet (The Economist Intelligence Unit., 2013.f. p.12-13). MATIF Futures Exchange is managed by da NYSE Euronext. Interest rate contracts, which are most popular derivatives and Paris is the 3rd place in worldwide ranking during 2010 and commodities derivatives contracts are traded mostly. At MONEP derivatives exchange security, index contracts are traded. In addition to this, at

Paris branch of NYSE Euronext LIFFE Derivatives Exchange agriculture derivatives contracts on which Paris's financial centre is expertise are traded (The City UK, 2013, p.17).

The legal and regulatory framework for banking supervision in France is clear, easily accessible, and updated periodically. There is a single regulator for the financial services i.e. banking and insurance, the Prudential Control Authority (Autorité de Contrôle Prudentiel-ACP). The ACP established in March 2010 is an independent institution and separated from the central bank. The stock market regulator is the Financial Markets Authority (Autorité des Marchés Financiers-AMF). The requirements of EU directives on prudential supervision and the specific rules of the European Central Bank (ECB) for certain transactions, such as reserve requirements and collateralisation of some types of transactions and payments are obeyed. In March 2014, ECB took the control of the region's largest bank with assets more than US$ 39 billion Eurozone banks in line with a single supervisory mechanism that includes the three largest banks in each country for the European Banking System (The Economist Intelligence Unit, 2013.f. p.14). A European-wide bank-deposit scheme has not been establishes yet so Germany and other creditor countries are resisting such a scheme. National deposit guarantees will remain linked to the sovereign. The annual "Systemic Risk Tax" on the minimum regulatory capital requirements of financial institutions was doubled due to the ongoing economic crisis. The tax does not affect foreign companies operating in France. In August 2012, some additional taxes on certain financial transactions were imposed. Purchases of shares in French-domiciled firms with a market capitalisation of over €1billion are subject to a tax that concerns worldwide trading in shares of French companies and applies to shares and securities giving access to share capital or voting rights, trading in American Depository Receipts (ADRs) and European Depository Receipts (EDRs) except bonds convertible or exchangeable into share. A tax on high frequency trading and the acquisitions of CDs is applied only to operators based in France. Until July 2015, the ring-fenced subsidiary will be forbidden from both "taxable" high-frequency trading and commodity derivatives trading. Banks will be prohibited from giving unsecured loans to hedge funds or taking shares in them. In 2019, full compliance of Basel requirements will be accomplished. Financial

Instruments Directive (MiFID) is accompanied by a Markets in Financial Instruments Regulation (MiFIR). According to this, certain derivative classes traded on exchanges requires provisions as well as increased reporting obligations (The Economist Intelligence Unit, 2013f.f, p.15-16).

Paris is the largest centre in Europe after London. The banking sector is strong and having an international standard. The regulatory and supervisory structure of the financial centre is strong. Istanbul could compete with Paris in banking and commodity products trading.

5.5.9 Shanghai Financial Centre

Shanghai provides their services regionally. Shanghai uses export-oriented growth model their produces international savings and needs investments to improve productivity and national competiveness. The financial system is a bank-dominated one. The biggest state-owned banks such as ICBC, China Construction Bank, the Bank of China, the Agricultural Bank of China and the Bank of Communications operate as a monopoly. ICBC is the market leader. Foreign banks will go on marginal players, but some have developed operations particularly in private banking. The Chinese are intense users of bank accounts. China's banks usually channel cheap funding to state enterprises and, particularly in recent years, to local governments. NPLs have accelerated steadily in value since the fourth quarter of 2011, but stay 1% of total lending. In banking sector, regulators will gradually relax prudential ratios that are currently very conservative. By 2018, the banks will have been compliant with Basel III international capital adequacy regulations Chinese banks also operate abroad, the US regulatory authorities granted permission for the first time to a Chinese bank to take over an American institution (The Economist Intelligence Unit., 2013.c. p.3-5).

The Shanghai Stock Exchange (SSE) is Asia's the second-largest exchange after Japan's Tokyo Stock Exchange at end of 2012 in terms of market capitalisation. As an emerging stock market, the Shanghai stock market is also highly volatile. The Shanghai stock market is not an efficient market. Herding behaviour and speculation are prevailing, which might stimulate from the weak supervision and segmentation of the share ownership. At that date, 944 A-share and 55 B-share companies are listed. A-

shares refer to shares that are traded in RMB, whereas B-shares refer to shares that are traded in foreign currencies, in US-Dollars. There are two main indices for A-shares and B-shares. A high level of state ownership in most listed companies combines with tight state controls on which firms are permitted to list. This means that local markets do not function effectively as a tool for the allocation of capital. In 2012, a new corporate junk-bond market was launched by the SSE, which opens up a new financing channel for corporates. IPO market declined because of the financial turmoil and poor market conditions, a number of firms delayed their listing. Market manipulation and insider trading constitute a major problem on the mainland exchanges. The China's minority rights are very weak currently, then delisting rules have been strengthened to set aside weak firms and listed firms have improved disclosure (The Economist Intelligence Unit, 2013.c. p.10-11). China will develop a national OTC market, officially known as the National SME Share Transfer System started its operations in 2013, which is aiming to help small non-listed technology firms financing through asset trades. It is run by the National Equities Exchange and Quotations under the regulatory supervision of the China Securities Regulatory Commission (CSRC). However, it suffers from many problems such as an underdeveloped legal framework and weak market institutions. On the other hand, the derivatives markets are less sophisticated than other developed economies. The introduction of forward contracts in ten different foreign currencies has been allowed. Copper, aluminium and natural rubber are the main items traded in the Shanghai Futures Exchange. The market for commodities futures also gradually enlarge in terms of product range and market participants. The Shanghai Financial Futures Exchange re-launched government bond futures contract that are aimed at domestic firms in September. China's bond market is among the world's largest and is second in Asia only after Japan. The bonds include treasury bonds, financial and corporate bonds and convertible bonds. Additionally China's corporate bond market is among largest. Around 95% of this is accounted for by the interbank bond market regulated by the People's Bank of China (PBC), conversely the exchange-traded segment of market regulated by CSRC. Qualifying foreign entities can trade both on the exchange-traded market and on the interbank market. All companies that issue bond must meet the relevant criteria and receive the approval of CSRC (The Economist Intelligence Unit, 2013.c, p.12-13). Different from Hong Kong, Chinese government maintains rigid

controls on moving and holding renminbi and foreign currencies. Due to the non-convertibility of the renminbi, China's foreign exchange market cannot achieve the status equal to that of New York, London, Tokyo, and Hong Kong. The renminbi is convertible for trade, services, and other similar current account transactions; however, it is non-convertible for investments, borrowing, and other account transactions. The Chinese authorities require that all domestic and foreign enterprises that are operating locally sell foreign currency in excess of specified amounts to nominated foreign-exchange banks. There are 21 Chinese nominated foreign-exchange banks and 10 foreign-funded ones. The State Administration of Foreign Exchange (SAFE) is the market regulator. Recently, SAFE has decided to tighten the supervision of currency trading. There is also a Shanghai based interbank market for foreign exchange trading which consists of all nominated foreign-exchange banks. The banks are connected by a computer network clearing and settlement system that are called the China Foreign Exchange Trade System (CFETS). Foreign and domestic banks and non-bank financial institutions participate in CFETS transactions as member institutions. Since 2006, OTC currency trading with banks acting as market makers has been allowed. The market is characterised by bilateral credit authorisation and settlement between two parties (The Economist Intelligence Unit, 2013.c. p.13-14).

Financial regulation in China is determined with various ministries and administrative bodies sharing authority with the PBC. The multi-peak system of financial regulation consists of mainly three subsectors that are the China Banking Regulatory Commission (CBRC), the China Insurance Regulatory Commission (CIRC) and the CSRC. China's banking system is regulated by the Commercial Bank Law of 1995 that requires banks to conduct their lending operations based on profitability, liquidity, and risk minimisation. Nonetheless, this freedom may be limited or suspended when it runs counter to the interests of the state. Banks must meet specified levels of capital and asset-liability ratios. The CBRC controls the commercial banks with stricter internal audits and proper-credit risk management. The CBRC has strengthened the supervisory role on issues such as market entry, capitalisation requirements, asset quality, liquidity, and profitability and has made a clear distinction between the banking and securities industries. In 2002, the PBC launched a new Guideline on the internal

controls of Commercial Banks, in order to improve lending by all banks, especially by the large state-owned commercial institutions. The framework requires the banks to adopt a three-tiered structure (from board of directors-senior management-the board of supervisors) to ensure proper and effective management and supervision (The Economist Intelligence Unit, 2013.c. p.15-16). Stakes by foreign-invested enterprises are limited to 20% in banks. The Chinese government eases restrictions in China's capital markets. The renminbi is aimed to internationalise and to allow the capital account to open. These reforms will continue, especially interest rate liberalisation is accompanied with those (The Economist Intelligence Unit, 2013.c. p.2).

Shanghai is the main competitor of Hong Kong, Tokyo, and Singapore. However, Shanghai suffers from many problems such as an underdeveloped legal framework and weak market institutions. On the other hand, the derivatives markets except commodity trading are less sophisticated than other developed economies and its competitors. In banking sector, NPL's ratio is worse than Istanbul. Chinese government maintain rigid controls on moving and holding renminbi and foreign currencies, the international banking activities are behind its competitors: However, China's government tries to liberalize its financial system gradually. Istanbul could compete with Shanghai in various sub segments of the financial system.

5.5.10 Singapore Financial Centre

Singapore financial centre is an important financial centre, the value of its financial centre is equal to 990% of GDP in 2012; the ratio is higher than Germany and the US. Singapore's financial sector is large comparable to other Asian countries as a proportion of GDP, at around 12% in 2012. Singapore is now well established, but is still behind New York and London. Singapore financial centre emerged in the 1980s and 1990s. Singapore strengthens its position as a regional money hub and is a safe haven for the assets of wealthy people from all across Asia, as a result Singapore benefits from inflow of funds which preciously have been directed to other centres, for example in Switzerland (The Economist Intelligence Uni., 2013.s. p.2; p.7). Singapore's financial centre is dominated by a large offshore banking sector that are known as the

Asian dollar market (ADM) , therefore there is neither exchange control nor restrictions on foreign direct investment flows (Sagaram and Wickramanayake, 2005, p.26).

There are lower barriers to entry for foreign banks, as a result of this, the foreign banks dominate the banking sector. Singapore's well-capitalised banks have high levels of liquidity, excellent asset quality, low-level NPLs standing at around 1% of total loans in 2012. Moreover, capital-adequacy ratios are higher than the ratios set by the Basel Committee. The Monetary Authority of Singapore (MAS), the central bank of Singapore) tries to force Singapore’s banks to consolidate and increase their competitiveness relative to foreign banks. Singapore's banks are at the good position to meet the more tight standards laid down in the Basel III framework, the full implementation of which will be completed by 2019. After granting banking licences to Bank of China and Industrial and Commercial Bank of China in October 2012, the Chinese banks increase their presence in Singapore (The Economist Intelligence Unit, 2013.s. p.3-4).

Financial markets, i.e. domestic markets for securities, derivatives, and currency are highly developed and the financial markets in Singapore serve for the entire Asian region. The Asian Dollar Market dominated by foreign banks with operations in Singapore, which is the equivalent to the Eurodollar market, intermediates cross-border interbank and non-bank lending flows (The Economist Intelligence Unit, 2013.s. p.4). The Singapore Exchange (SGX).allow the domestic and foreign companies to raise long-term capital through equity and debt securities and also allow listed companies to raise additional capital through right issues and private placements of new shares. Rules relating to the use of the Singapore Dollar by foreign entities were liberalized to enable foreign players to participate more actively in issuing Singapore Dollar bonds. Overseas companies raise funds through bonds, so Singapore offers different debt securities that are listed on SGX, unlisted bonds and Asia-dollar bonds. Moreover, the government takes some actions to improve liquidity of the bond market. The Debt Capital Market Committee of the Association of Banks of Singapore organizes the development of bond markets; it also encourages more public and private bond issues (The Economist Intelligence Unit., 2013.s. p.9). SGX launched the ASEAN

trading linkage with Bursa Malaysia in September 2012. The Stock Exchange of Thailand joined the linkage in October. This linkage is a private-sector initiative driven by seven Asian exchanges, and complements the ASEAN Capital Markets Forum's initiatives. It aims to promote the growth of ASEAN capital markets by creating an infrastructure for more efficient intra-ASEAN trading. The Singapore corporate debt market was buoyant in 2012, encouraged by a low interest rate environment and investors seeking relative stability in the fixed income markets (Singapore Monetary Authority, 2012).

The foreign exchange (FX) and OTC derivatives market play a pivotal role in Singapore's vibrant and international financial markets, underpinned by Singapore's growth as a major global trading hub. Singapore was also ranked the largest OTC interest rate derivatives centre in Asia Pacific excluding Japan by turnover (Singapore Monetary Authority, 2012) Singapore is the first economy in the Asia to allow foreign banks to operate off-shore banking units. Foreign banks trade in the Asian Dollar Market (ADM). Asian Dollar Market is an international financial market in which the institutions accept the deposit of hard currency outside their country of origin. An Asian Dollar Market is comprised of financial institutions borrowing, lending dollars, and other currencies outside the country of origin (The City of London, 2008, p.30). In foreign exchange transactions, the official operating hours for Singapore-dollar are 9 am to 5 pm local time, however trading continues around the clock. Currency and interest swaps are very common in Singapore. Foreign banks have developed an active market in regional currency swaps that are US dollar-baht, US dollar-rupiah and US dollar-Malaysian dollar (The Economist Intelligence Unit, 2013.s. p.9). Singapore also has an active but small derivatives market. Trading is carried out both over the counter, which operates through the Singapore Exchange Derivatives Trading (SGX-DT) system and the Singapore Mercantile Exchange. Most derivatives transactions are in a foreign currency, futures, and options on stock indices, government bonds, interest rates, and energy. Singapore Commodity Exchange trades commodity contracts such as rubber. Most of the foreign banks in Singapore use complex product such as the exotic options that are caps, floors, collars, and swaptions (The Economist Intelligence Unit, 2013.s. p.10). Islamic financial services continued to grow. They also saw renewed interest in

sukuk issuances in Singapore. Two Singapore Dollar sukuk totalling S$130 million were issued in 2012 by local entities including the first convertible sukuk in Singapore. The first half of 2013 saw a further two sukuk issues amounting to S$100 million and the launch of an S$500 million multi-currency corporate sukuk programme by a local entity (Singapore Monetary Authority, 2012).

In Singapore, government plays the role of leader. The government implements such a policy through targeted tax reduction, strict regulation. The government encourages the development of locally based offshore markets. The markets are dominated by large state-owned institutions like the Development Bank of Singapore. The Monetary Authority of Singapore (MAS) regulates and supervises all of Singapore's financial sectors, including securities, futures, foreign exchange, insurance, and banking (Pauly, 2011, p.32-33). In 2012, the MAS are also responsible for issuing currency. The primary goals of the MAS are to establish a sound, progressive financial services sector and to sustain noninflationary economic growth. The MAS supervises and regulates commercial banks, merchant banks, insurance companies, securities industries, and other financial institutions, such as finance firms. The MAS also issues securities and raise loans in capital markets abroad on the government's behalf, moreover it manages Singapore's official foreign reserves (The Economist Intelligence Unit, 2013.s. p.10). A government-run Deposit Insurance Scheme became operational in 2006. In the event of the failure of a bank or financial company, individuals and charities including non-bank depositors that cover sole traders, partnerships, companies, and unincorporated entities are compensated for the S$50,000 in standard savings, current and fixed deposits. In May 2012, the MAS revised the Corporate Governance Code and listed companies must be compliance with the revised code. Qualifying full-bank status could be assigned to foreign banks by the government if their retail operations are locally and they are considered important to the domestic market. In addition, new QFB licences are only be granted as part of free-trade agreements (The Economist Intelligence Unit, 2013.s. p.11-12). Singapore financial sector has a strong regulatory framework; the Banking Act is the one of the main legislation; the other two is the Securities and Futures Act (SFA) and the Financial Advisers Act, which regulates capital markets (The Economist Intelligence Unit, 2013.s. p.3). The government and the

MAS encourage the development of the fund-management industry. Additionally, the regulatory changes have been made in recent years. The government continues to provide a range of tax incentives and funding alternatives to encourage local and foreign financial firms to set up facilities (The Economist Intelligence Unit, 2013.s. p.8).

Singapore is a regional financial centre mainly serving the ASEAN countries. Singapore is very good at the most areas of the financial system. The regulation is cited as excellent, asset management and private banking is the most competitive sub segments. Historically, Singapore is the second Asian centre just behind Hong Kong but it experiences the strongest rises in the region. There are lower barriers to entry for foreign banks. Singapore is also a regional hub for foreign exchange transactions. Istanbul could not compete with Singapore in the near future.

5.5.11 Tokyo Financial Centre

Tokyo provides their services mainly to the domestic economy. The innovation capacity is limited. Tokyo has bank-dominated financial system rather than capital-dominated financial system. This situation makes Tokyo relatively uncompetitive. After the real estate bubble and Japan's economic decline, Tokyo's rise ended. Tokyo still lacks the right combination of sophisticated financial products and services. Japan has lost its position as leading financial centre in the region, mainly due to heavy regulation. Japan's domestic financial system has been characterized by excessive restrictions on financial transactions, brokers' fees and commissions and the transaction costs are high. Restrictions on interest rate have created obstacle. Taxes and transactions costs on foreign exchange transactions cause the foreigners discoursing from buying Japanese bonds (Sagaram and Wickramanayake, 2005, p. 25-26).

The Mitsubishi UFJ Financial Group, the Sumitomo Mitsui Banking Corporation Japan, and the Mizuho Financial Group are three big banking groups in Japan. Japanese banks have been improving the quality of their base capital to be complaint with Basel III standards that will come into effect between 2013 and 2019 (The Economist Intelligence Unit, 2013. j., p.4). Foreign banks have traditionally played a minor role in the domestic market. They focus mainly on investment and private banking and derivatives trading (IMF, 2012.j. p.116).

In January 2013, the Tokyo Stock Exchange (TSE) and the Osaka Stock Exchange (OSE) merged their operations and they formed the Japan Exchange Group (JPX). Equity trading was integrated in July 2012 and derivative trading will been integrated by March 2014. The number of companies, 10 of which are foreign companies listed on the TSE increased to 3,400 after the merger. The integrated bourse is the world's third largest by number of listed companies. The TSE's dominant position is in equity trading. In 2012, only 48 IPOs were transacted (The Economist Intelligence Unit, 2013.j. p.9-10). The TSE and the London Stock Exchange recently established a joint venture called Tokyo AIM, a new Tokyo equity based market for growing companies that is only open to professional investors. Tokyo AIM is also considering a debt securities market for professional investors only. The TSE plans to integrate TOKYO AIM into the Tokyo Stock Exchange effective July 1, 2012, and re-brand the TOKYO AIM market as 'TOKYO PRO Market (IMF, 2012.j., p. 99). Japan's public debt market is the largest in the world, both in absolute size and relative to GDP Additionally; Japan has the largest domestic bond market in Asia. Financial futures and options on futures are traded both OTC and at the Tokyo Financial Exchange (TFX). Currency forward contracts and swaps make up a small proportion of OTC derivatives. The TFX consists of Japanese and foreign securities companies, banks, insurance firms, money market brokers and futures brokers as its members. TDEX is the nickname of the TSE's Derivatives Market. The derivative products listed on TDEX offer investors a variety of effective hedging instruments and new opportunities for investment. The TDEX derivative market currently includes not only domestic investors but also many foreign investors. The markets for equity-linked derivatives remain underdeveloped. The JPX offers index futures and options and equity options contracts (The Economist Intelligence Unit., 2013.j. p.11-12).

The Ministry of Finance or Zaimusho, overviews development banks and other government financial institutions, and oversees international inflows and outflows of capital. It also issues government bonds, collecting taxes and originates the national budget. Moreover, The Financial Services Agency (FSA) supervises and monitors financial institutions. The FSA also has the power to manage bankrupt financial institutions and protect investors and depositors. The Ministry of Finance and the FSA

issue and amend financial laws and regulations since 1998 they have required holding public consideration before executing new laws and regulations (The Economist Intelligence Unit, 2013.j. p.12). The central bank is the Bank of Japan (BOJ) that is a semi-governmental corporation. The BOJ is the sole issuer of bank notes and lender of last resort to commercial banks. The central bank intervenes in money markets, buying and selling government securities. The prompt corrective action (PCA) program that allows the authorities to take precautionary actions to prevent banks from going into trouble introduced in 1998. If a bank's capital adequacy ratio falls below a certain level, the authorities can force it to file and implement a management-reform plan. Most banks are subject to government inspections of their books annually. Meanwhile the FCA is broadening the scope of unscheduled inspections of financial institutions (The Economist Intelligence Unit, 2013.j. p.12-13). The FSA puts restrictions on large exposures by banks and insurance companies. Japanese banks are obliged to cap their credit exposure covering loans, guarantees, equities, corporate bonds, commercial paper, and derivatives to an individual obligor at 25% of their equity capital. Since 2008, Japan's internationally active banks have raised capital in the sector because of strict capital requirements. The Deposit Insurance Corp of Japan is a bank bailout institution funded by public and private contributions. Its main function is to finance bank bail-outs and by using cash subsidies, loans and loan guarantees, asset and bond purchases, share subscriptions and other financing facilities to protect depositors. In addition to this, its operations cover all commercial banks except for foreign bank branches, credit associations, and credit co-operatives (The Economist Intelligence Unit, 2013.j. p.13-14).

Tokyo has behind in Singapore and Hong Kong although Tokyo is a historic financial centre. Tokyo exhibits a declining trend because of the financial conservatism. Tokyo provides services to domestic economy; additionally Tokyo has the bank-based financial system. The innovative financial products could not be initiated. The banking sector is strong except international banking activities. Istanbul could compete with Tokyo in the near future.

5.5.12 Toronto Financial Centre

The financial sector is the important segment of Canadian economy. With variety of institution, financial system is well developed. The financial system structure and conditions are the same the US financial market, but the depth and liquidity of financial market is low due to the small size of Canadian economy (The Economist Intelligence Unit, 2013.b. p.2). Toronto has a mature and stable development in the financial sector, but somewhat does not have enough motivation and capability for expanding markets and developing overseas businesses.

They have sophisticated banking system. Both domestic and foreign-owned bank hold more than 70% of financial sector's assets. There are a concentration in banking sector that bears some risks for financial stability and competition, the big six lenders dominate around 90% of all banking assets (The Economist Intelligence Unit, 2013.b. p.3). Canada's five largest domestic banks have their head offices in Toronto. 55 foreign-based banks operating in Canada, 45 of which have their Canadian head offices in the Toronto region (Toronto Financial Services Alliance). The capital position of banks is strong; this provides a buffer against losses. The bank will have been compliant with Basel III regulations by the end- of 2018. On the other hand, Canadian banks have been continuously expanding their operations abroad through mergers and acquisitions. Conversely, foreign banks can freely operate in the Canadian market (The Economist Intelligence Unit., 2013.b. p.5). Canada's major banks have developed asset management divisions in order to manage portfolios of assets for individuals or institutional investors, including pension funds.

The TSX (formerly Toronto Stock Exchange) is Canada's main share trading arena. It is a subsidiary of the TMX Group. The TSX, in which 1600 companies are listed, has sophisticated trading and settlement systems (The Economist Intelligence Unit, 2013.b. p.3; p.5). The secondary market for commercial paper is well developed in Canada. Montreal Exchange, which merged with the TSX in 2008, is the country's primary derivatives exchange. There are developed markets for foreign currency and financial derivatives in which domestic and foreign banks are the primary traders of Canadian dollars, US dollars and other foreign currencies. Additionally over-the-

counter futures, options, and swaps are traded. The most actively traded OTC interest rate options are interest-rate caps, floors and collars, and options on swaps (The Economist Intelligence Unit, 2013.b. p.12).

The Canadian banking sector has a solid regulatory framework and conservative lending practices. Financial regulation is shared by a various government institutions; primarily the Bank of Canada has overall responsibility for financial stability, as well as for the conduct of monetary policy and the issuance of currency. Securities and collective investments markets are supervised by provincial securities commissions, which coordinate their activities in the Canadian Securities Administrators (CSA) (The Economist Intelligence Unit, 2013.b. p.13). In 2011 a new measures were initiated in order to empower the ability of Canada Deposit Insurance Corporation (CDIC) to deal with bank failures. Additionally with this amendment, new reporting and operational requirements were imposed on the members of Canada Deposit Insurance Corporation (CDIC). In April 2012, the government introduced a new legal framework for covered bonds that are backed by mortgage or public sector loans are popular financing tools among financial firms in Europe. In April 2011, the CSA launched a consultation process to renovate the way that securitised products are governed and called for greater disclosure of financial obligations (The Economist Intelligence Unit, 2013.b. p.13-14).

Toronto has a very powerful financial system, but the liquidity is low due to small size of Canadian economy. The foreigners can easily participate in the financial and the banking sector. However, low motivation of the government and New York stop Toronto positing as global financial centre. Istanbul could not compete with Canada in the near future.

5.5.13 The Ranking Analysis of Financial Centres

In this section, Istanbul and its peers are analysed considering various characteristics of the financial system. A ranking and percentile analysis is brought out to compare the financial centres. The World Bank Global Financial Development Database (GFDD), the World Bank World Development Indicators Database, and Word Bank Islamic Banking Database are used to characterize Istanbul’s position in banking

and financial markets. Nine indicators are used for the banking sector, whereas 13 indicators are used for the financial markets. The indicators are used as the average of the values between 1992 and 2012 in the ranking analysis. Except the number of contracts indicators, all indicators are calculated as a percentage of GDP: The centres are categorised based on the percentile. Values below the 25th percentile is shown in red and named as the fourth developed group. Values equal or greater than the 25th percentile and less than the 50th percentile are shown in yellow and named as third developed group. Values equal or greater than the 50th percentile or less than the 75th percentile is shown in green and categorised under the second developed group. Values equal or greater than the 75th percentile is shown in red and named as the first developed group. The indicators used in the ranking and comparison of banking sector are listed below table.

Afterwards, the centres are ranked and categorised; the results are shown in the following table. Istanbul unfortunately performs poorly against its competitors. In the banking sector side, six criteria out of nine criteria are categorised at the lowest developed group. Istanbul is categorised only in international banking activities at the second developed group.

Table 56: Banking Sector Criteria and Indicators

Criteria	Indicator	Brief Description	Data Source
Total Assets	Total bank's assets to GDP (%)	Total assets held by deposit money banks as a share of GDP and total assets held by central bank as a share of GDP is summed up. Deposit money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits. Bank's assets comprise claims on domestic real nonfinancial sector, which includes central, state, and local governments, nonfinancial public enterprises, and private sector. Central bank assets are claims on domestic real nonfinancial sector by the Central Bank.	GFDD World Bank Database and Author Calculation
Liquid Liabilities	Liquid liabilities to GDP (%)	Liquid liabilities are known as broad money, or M3. M3 are the sum of (M0) that entails currency and deposits in the central bank, (M1) that entails transferable deposits and electronic currency (M2) that entails time and savings deposits, foreign currency transferable deposits, certificates of deposit, and securities repurchase agreements and others that cover travellers checks, foreign currency time deposits, commercial paper, and shares of mutual funds or market funds held by residents.	WDI-World Development Indicators
Domestic Credits	Private credit by deposit money banks to GDP (%)	Domestic money banks entail commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.	WDI-World Development Indicators
Return of Equity (ROE)	Bank return on equity	Average Return on Assets (Net Income/Total Equity)	GFDD World Bank Database
Inter-national Banking	Foreign bank assets among total bank assets (%)	A foreign bank is a bank where 50 percent or more of its shares are owned by foreigners.	GFDD World Bank Database

Criteria	Indicator	Brief Description	Data Source
Cost Efficiency	Bank overhead costs to total assets (%)	Operating expenses of a bank as a percentage of the value of all assets held. Total assets include total earning assets, cash and due from banks, foreclosed real estate, fixed assets, goodwill, other intangibles, current tax assets, deferred tax assets, discontinued operations and other assets.	GFDD World Bank Database
Deposits	Deposit money banks' assets to GDP (%)	Assets include claims on domestic real nonfinancial sector, which includes central, state, and local governments, nonfinancial public enterprises, and private sector. Deposit money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.	GFDD World Bank Database
Islamic Banking	Total assets of Islamic banking to GDP (%)	Some of the listed institutions only offer Shari'a compliant products & service while others have an Islamic Banking window where alongside their conventional products they also offer Shari'a compliant products.	World Bank Islamic Banking Database and Author Calculation
NPL	Bank nonperfor-ming loans to gross loans (%)	Ratio of defaulting loans (payments of interest and principal past due by 90 days or more) to total gross loans (total value of loan portfolio). NPL ratio is ranked smallest to largest.	GFDD World Bank Database

Table 57: Banking Sector and Characteristics

Financial Centres/ Banking and Characteristics	Total Assets	Liquid Liabilities	Domestic Credits	Deposits	Bank ROE	Cost Efficiency	International Banking	Islamic Banking	NPL
Dubai	9	10	9	8	1	5	10	1	10
Hong Kong	2	1	5	1	2	8	1	N/A	4
Istanbul	11	11	11	10	11	11	4	3	9
Kuala Lumpur	4	4	6	3	4	6	3	2	11
London	3	6	3	ND	7	7	5	4	3
Moscow	12	12	12	11	5	12	6	N/A	8
New York	10	8	2	6	8	10	2	5	2
Paris	7	9	8	7	9	3	7	NA	7
Shanghai	6	3	7	9	3	4	11	NA	12
Singapore	5	5	10	5	6	1	8	N/A	6
Tokyo	1	2	1	2	12	2	ND	N/A	5
Toronto	8	7	4	4	10	9	9	N/A	1

(1)N/A: Criteria are not applicable to the designated centre.

(2)ND: Data is not available for designated centre.

The indicators used in the ranking and comparison of financial markets are listed below table. Finally, the results of ranking are shown in Table 59. Istanbul is unfortunately at the weakest positon than its peers have. In the financial market side, ten criteria out of thirteen criteria are categorised at the lowest developed group.

Table 58: Financial Markets Criteria and Indicators

Criteria	Indicator	Brief Description	Data Source
Stock Market-Value Traded	Stock market total value traded to GDP (%)	The value of share trading is the total number of shares traded multiplied by their respective matching prices. Total value of all traded shares in a stock market exchange is divided by GDP. The ratio is calculated only for centre's stock exchanges.	World Federation of Exchanges Database and Author Calculation
Stock Market-Market Capitalization	Stock market capitali-sation to GDP (%)	The domestic market capitalisation of a stock exchange is the total number of issued shares of domestic companies. The market capitalisation figure includes share of listed domestic and foreign companies, common and preferred shares of domestic companies, and shares without voting rights. Domestic market capitalisation is divided by GDP. The ratio is calculated only for centre's stock exchanges.	World Federation of Exchanges Database and Author Calculation
ETF	ETF turnover to GDP (%)	ETFs are portfolio investment products that are listed and traded on a regulated exchange. ETF turnover amount is divided by GDP. The ratio is calculated only for centre's stock exchanges.	World Federation of Exchanges Database and Author Calculation
IPO	IPO value to GDP (%)	IPO value is the aggregated value of money raised on the primary market with offer of shares (already issued or newly issued) in the period. The amount is divided by GDP. The ratio is calculated only for centre's stock exchanges.	World Federation of Exchanges Database and Author Calculation
Commo-dity Contracts	Number of traded commo-dity contracts	Commodity futures and options traded contracts are summed up. The indicator is calculated only for centre's exchange.	World Federation of Exchanges Database and Author Calculation
Currency Contracts	Number of traded currency contracts	Currency futures and options traded contracts are summed up. The indicator is calculated only for centre's exchange.	World Federation of Exchanges Database and Author Calculation

Criteria	Indicator	Brief Description	Data Source
Interest Rate Contracts	Number of traded interest rate contracts	Interest rate futures and options traded contracts are summed up. The indicator is calculated only for centre's exchange.	World Federation of Exchanges Database and Author Calculation
Stock Contracts	Number of traded single stock contracts	Single stock futures and options traded contracts are summed up. The indicator is calculated only for centre's exchange.	World Federation of Exchanges Database and Author Calculation
Index Contracts	Number of traded stock index contracts	Stock index futures and options traded contracts are summed up. The indicator is calculated only for centre's exchange.	World Federation of Exchanges Database and Author calculation
Mutual Funds	Mutual fund assets to GDP (%)	A mutual fund pools money from many investors to purchase securities.	GFDD World Bank Database
Domestic Debt Securities	Outstan-ding domestic debt securities to GDP (%)	Total amount of domestic private debt securities (amount outstanding) issued in domestic markets as a share of GDP and total amount of domestic public debt securities (amount outstanding) issued in domestic markets as a share of GDP are summed up.	GFDD World Bank Database and Author Calculation
Inter-national Debt Securities	Outstan-ding inter-national debt securities to GDP (%)	Total amount of international private debt securities (amount outstanding) issued in domestic markets as a share of GDP and total amount of international public debt securities (amount outstanding) issued in domestic markets as a share of GDP are summed up.	GFDD World Bank Database and Author Calculation
OTC Foreign Exchange	OTC foreign exchange turnover	Spot transactions, outright forwards, foreign exchange swaps, currency swaps, options, and other products are included.	Bank for International Settlements (BIS)

Table 59: Financial Markets and Characteristics

Financial Centres/ Financial Markets and Instruments	Stock Market-Value Traded	StockMarket-MARCAP	ETF	IPO	Commodsty Contracts	Currency Contracts	Interest Rate Contracts	Stock Contracts	Index Contracts	Mutual Funds	Domestic Debt Securities	International Debt Securities	OTC Foreign Exchange
Dubai	11	11	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	ND
Hong Kong	1	1	2	1	10	6	7	5	8	1	8	4	5
Istanbul	12	12	8	8	8	3	9	N/A	5	10	10	11	10
Kuala Lumpur	5	3	10	3	7	N/A	8	N/A	10	7	5	8	11
London	3	4	3	5	2	5	1	3	4	6	6	1	1
Moscow	10	9	N/A	12	6	1	6	2	1	11	11	9	8
New York	2	5	1	6	3	4	4	1	6	3	2	7	2
Paris	8	8	5	9	5	N/A	2	4	3	2	3	2	6
Shanghai	9	10	7	7	1	N/A	N/A	N/A	2	9	9	12	9
Singapore	4	2	6	2	9	N/A	5	N/A	7	4	7	5	4
Tokyo	7	7	9	11	4	2	3	6	9	8	1	10	3
Toronto	6	6	4	4	N/A	N/A	N/A	N/A	N/A	5	4	3	7

(1)N/A: Criteria are not applicable to the designated centre.
(2)ND: Data is not available for designated centre.

6. DISCUSSION AND CONCLUSION

The world's financial structure is composed of financial markets, financial institutions, and financial centres. The financial centre is a place where the financial activities are concentrated and fund providers and users are brought together. The concept of the financial centre is a multivariable subject; the scholars investigate the formation of the financial centres in different aspect. On the other hand, finding new financial reserves in emerging markets is a serious discussion area in modern economics. International financial centres have played a vital role in the economic and financial development in the world. Additionally, international financial centres contribute to the wealth of their host cities and countries in the fields of employment, GDP, and long-term income and wealth generation. With government support and tax incentives, the financial regulators should launch a wide range financial markets and services. As seen in the findings of our empirical study, financial centres contribute to the development of financial sector in the country. Financial sector provides financial services to governments, households, and .borrowers. Governments use the financial sector to borrow to fund public expenditure if the tax collections are temporarily low. Indeed, when the financial sector is more developed, economies grow more rapidly, generating additional tax revenue. Beside households use the financial sector to save and borrow, allowing them to obtain expensive goods and services. Businesses use the financial sector to invest, to borrow, to manage cash flow, and to manage business risks. In this dissertation, much serious attention is given to financial centres and their role in the performance of and the development of the financial markets and the banking sector in order to be able to position Istanbul as a regional financial centre.

When a financial centre grows in a developing economy, it initially serves a largely domestic group of participants. In national financial centre, the domestic banking system serves domestic retail and commercial customers; funds saved by local investors are lent to the government, corporate and retail borrowers. Banks also provide financing for foreign trade. Local institutional and private investors purchase domestic securities, such as local government issued bonds, or shares and bonds issued by the local firms. Market infrastructure, such as the payments system and the stock

exchanges, are simple and locally developed, there possibly are restrictions on cross-border activities. Securities are issued by local companies and sold to local institutional and private investors. The restriction imposed on participating in the financial markets may be in effect, such as foreign exchange controls or foreign ownership of securities. The infrastructure of the domestic financial markets supports local laws and market practices. Under this categorisation, most centres have a stock exchange with electronic trading system and payment system operated by central bank in the host country. As a country's economy grows and businesses develop, sophisticated financing requirements increase. The foreign investors are interested in investing in the country. Sophisticated financial markets provide alternatives to manage risks. At this stage, a financial centre competes with other financial centres to attract foreign investment. When a financial centre is opened up to foreign investors, an increasing number of foreign-owned companies are listed on the domestic exchange. Bond markets become an increasingly important source of finance. A stable and efficient business and political environment and a well-developed legal system gain importance, additionally the compliance of its domestic market infrastructure and regulatory regime with international standards comes under inspection. The governments are eager to adopt new policies, regulations, and acts to encourage the foreign investors and investments and ensure that foreign financial firms can operate on an equal base with domestic firms. The market goes forward to meeting the expectations of international investors and financial firms and supports the cross-border investment inflow. As a financial centre starts to attract inward investment, its domestic market infrastructure, and regulatory regime face increasing examination in terms of compliance with international standards. The financial centre will be working towards international norms and recommendations. The modification of domestic payments systems, settlement systems, and custody arrangements improve investor confidence and ensure accommodation of other parties in different time zones. Initially, Turkish government should take the necessary actions into consideration in order to position Istanbul as a national financial centre.

In the next phase, financial centres develop regional expertise in sophisticated cross-border financial products, markets, and services. In regional financial centre, financial markets serve the region as a whole, with international firms using the centre

as a gateway to access the regional financial markets: Domestic stock exchanges list foreign shares. Moreover, bond market offer domestic and international bonds mainly issued by large companies, local governments and international companies. Derivatives are used more heavily to manage or diversify risk portfolios. In order to deepen the liquidity of financial markets, broad range of the financial instruments and increasing number of investors participate in the financial markets. Foreign currency trading in regional currencies increases, such as renminbi trading and the Asian Dollar Market in Singapore. Due to the request of linking with the financial market infrastructure, the financial markets infrastructure should meet international standards and processes. Legal and regulatory capability of the financial markets and regulations should support increasingly complex financial products and services. There is an agreement between foreign regulators allowing the exchange of information between regulators and the investigation of international fraud, money laundering, market manipulation and other prohibited practices. The players of the financial sector increase so supplementary services, such as asset management, consultancy, and law services, other non-banking financial intermediaries are required by the financial system.

In the final phase, financial centres develop international or global expertise in sophisticated cross-border financial products and services. The development of networks within financial centre causes the agglomeration of financial intermediaries, such as banks, brokers, investors, hedge funds and insurers, and professionals, such as lawyers, accountants and information technology specialists, provides high quality inputs and support services to the financial centre. The further stage of development is to become internationally or globally significant. An international financial centre is a hub in which cross-border financial business with counterparties around the world can be conducted easily and efficiently. The Financial markets have deep market liquidity, contributed by a wide range of international financial services such as the international bond market, large volumes of transactions between counterparties globally. Global financial centres are larger venue for derivatives trading, International financial centres engage in a wide range of financial activities. Governments give strong support for financial industry services. A high standard of regulation is provided by regulators with deep industry knowledge and technical skills appropriate for complex financial

business. High connectivity to other financial centres and the international market infrastructures through electronic trading systems provide reliable data links coupled with remote access to the financial markets and reduces the need for physical proximity in conducting global transactions. The truly global financial centre where the reputation for efficient markets and fair legal system are attained reaches the expertise in financial products and services. For examples, New York and London have developed as centre for commerce and financial activities over centuries.

After summarizing general life cycle of financial centres, a path from national centre to global centre, we discuss the position and potential of Istanbul. Turkey is categorised under emerging market economies like, China, Malaysia, the Russian Federation and United Arab Emirates, therefore Turkey has a potential to develop financially. Conversely, Istanbul is at an early stage of national financial centre. When Istanbul is compared with its peers having similar banking sector and financial markets fundamentals and indictors, Istanbul is placed at a lower position than its peers are. Istanbul needs more mature financial markets and banking sector. Istanbul could develop its own comparative advantages with the effective and rational government support. Turkey should employ a holistic and integrated approach for Istanbul International Financial Centre. On the other hand, the investors or players of financial centres feel free to easy access to banks and financial markets in which they can easily find funding and hedging opportunities.

Istanbul has not already offered a comprehensive range of financial institution and markets, proposing limited numbers of financial products and services comparable to any other international financial centres. The weaknesses of Istanbul lie in the deficiency of the financial structure and financial system. The main obstacles can be summarized as follows: undeveloped capital markets, currency and derivatives markets, lack of international and cross-border banking activities, lack of diversified and structured financial products, huge number of unbanked population, lack of educated people, lack of access to financial markets with highest speed, low level of stock market listing, and absence of a broad base of foreign institutional investors.

In order to be a strong financial centre in the region, Turkey can possess the open competitive economy. Economic instability can threaten the efficient flow of international capital; therefore, as mentioned by Dufey and Giddy (1978) strong economic fundamentals are vital for the financial centres. Turkey should adopt an export-oriented growth model that produces international savings and needs investments to improve productivity and national competiveness. Hence losing market confidence and the outflow of capital could be the punishment for the country. Political stability in Turkey is always key investor concern, looking back Turkey's history of frequent military interventions associated with major economic crises. Discretionary government interventions were usually oriented toward short-term measures rather than introducing everlasting measures to the economy's structural problems. For that reason, Turkey's growth has been volatile like Latin American countries with considerable economic and political instability. This picture should be completely changed in order to gain foreign investors and global financial markets' trust.

Furthermore, the size of financial activity is also essential, if the size of financial activity is not big enough and the institutions and businesses locate in the centre for tax purposes, the institutions, and businesses move on to other financial centres. Turkey has to enlarge the size of the financial system. Turkish financial system should be integrated to global financial system. Linkages between financial centres can help the centres to reap the benefits of integration. Istanbul should attract a critical mass of global banks to operate in Istanbul. Especially, the economic integration with Middle East and Eastern European countries should be prompted. On the growth of financial sector, especially capital market has been focused to attain a better place in the international financial centre ranking.

The banking sector is at the core of the financial system in Turkey and Turkey has a bank-based financial system. New entry to the banking system should be easier. Foreign banks should not cope with local barriers arose from business practices, cultural aspects. Similarly, the banking sector should grow to take the advantages of scale. A large bank can be better diversified, have better liquidity and a large bank can offer broad range of services. Istanbul Financial Centre should not be a tax-heaven and legal

fiction or book keeping status. As stated by Choi, Tschoegl, and Yu (1986) without attaining financial development and a solid and well-founded financial and economic base, the growth and sustainability of the financial centre is impossible. The healthy and powerful link between financial markets, financial institutions, investors, and market players should be established and all responsibilities, rules, and regulations should be opaque and well documented. Subsequently, the main task should be competitive with supervision, regulation, and consumer protection prevailing in New York, London and emerging financial centres such as Dubai, Singapore, Hong Kong, Shanghai, and Moscow. As well as, the financial authorities make the financial system more market-driven by following conservative macroeconomic policies and reforming institutions. On the contrary, the emerging market economies can be under the risk because of macroeconomic policies, increased volatility of economic activities trigger lending booms that often end up in financial crashes. To avoid instability of the domestic economy, emerging countries need to find arrangements that will enable policy makers to conduct neutral or even counter-cyclical policies. Although, the results of our empirical study do not prove statistical significant relation between the size of the financial system and the stability in banking sector and the stock markets, the stability in financial system is very crucial.

Like Singapore, Turkey should prefer a single mega regulator that regulates and supervises all financial sectors, including securities, futures, foreign exchange markets, insurance, and banking in order to close regulatory gaps and sustain opaqueness of financial system. The mega regulator should be the Banking Regulation and Supervisory Agency. Similar to Hong Kong, France, the UK, and the USA, it is not assigned too much responsibility to the central bank. The formation of Turkish Banking Act was based on malfunction of banking regulations and unethical banking practices, banking crisis and fraud. The current structure of the Banking Act is very rigid and the Banking Act does not support international banking activities and additional it lays heavy burden on the bankers, therefore Turkish Banking Act should be revised and be transformed to a more a competitive framework. The financial supervision need to be protected from political pressures. Stiglitz also emphasises that economies need balance

between the role of government and markets, in financial crisis period, the countries, in particular the USA and the UK lost that balance (Stiglitz, 2010, p.xii).

In the past, the success of financial centres was based on light regulation and or tax arbitrage. Nevertheless, after financial crisis, the success of financial centres will be based on being compliant with global standards and financial stability. In stock markets, both the Markets in Financial Instruments Directive (MiFID) in Europe and the Security Exchange Commission's regulations in the United States raise competition among exchanges and broker-dealers. In Asian emerging stock markets, regulators are attracting foreign investment capital by enhancing market access and promoting good corporate governance. On the other, in banking, the Basel framework will encourage loan and bond trading markets globally by harmonizing economic and regulatory capital levels. The consumer financial protection issues are also crucial for international finance structure much like the USA, in which a new financial consumer protection bureau is set up inside the Fed with Dodd Frank Act. In Turkey, for consumer financial protection, a new agency other than Banking Regulation and Supervisory Agency and Capital Market Board should be set up.

As seen the results of our empirical analysis, the size or depth of stock markets has a greater impact on the size of the financial system in global financial centre group. Borsa Istanbul should develop deeper markets for a full range of equity, debt and derivative markets. Borsa Istanbul should attract with liquidity outside investors, particularly for listing. The merger of all exchanges operating in Turkey under the roof of Borsa Istanbul is a signal of success across roadmap of regional financial centre. The stock exchanges should be competing with each other to provide superior trading services. However, the listing and trading decisions of firms and investors not only depend on decisions of investors and on characteristics of a specific stock exchange, but also on the institutional features of the country in which the exchange and the financial centre are located. The stock exchange should be transparent, the contracts are easily traded, and the bureaucracy should be efficient. In order to attain competitive position, the traditional role of the stock exchange should change quickly through the enforcement of competitive advantage. The foreign investors should have equal rights

with local investors. For this purpose, foreign investors should have equal economic and voting rights as well as availability of company related information in English. All capital market regulations also can be found in English. There is a central source for stock market information but the information remains incomplete and it is not always disclosed in English. Timely disclosure of complete stock market information such as stock exchange alerts, dividend information and company information in English increases information flow.

After that, the products development and new markets are placed. Kindleberger (1973)' supports that financial product innovation play crucial role in the formation of financial centre, for Istanbul new financial products other than conventional banking and financial market products should be proposed, especially interest free products. The regulatory system should catch up with financial innovation otherwise, they hit hard by defaulting financial products. Turkish government target is to have better position in the competitive financial centres environment. Focusing on just one or financial products are not its first aim. However, like other financial centres Istanbul should specialize on specific financial instruments and financial services. Islamic finance and interest free financing alternatives should be added to the product bundle. Since Sharia-compliant finance increases its popularity by a loss of confidence in conventional banking due to the global financial crisis. Promoting Istanbul as a leading centre for Islamic finance should be a wise strategy for Istanbul; furthermore, Istanbul can be a rival for Dubai and Malaysia. Additionally Shariah Index should be constructed in the stock market similar to the Kuala Lumpur Shariah Index. On the other hand, specific product groups or other innovative systems and instruments should be chosen such as carbon finance after signing Kyoto agreement, carbon derivatives and securities, agriculture derivatives.

On the other hand, Turkey's unique geopolitical location is an important asset towards achieving the goal. The country is surrounded by important commodity exporting countries with relatively underdeveloped financial systems. As most of the neighbouring countries are transition economies that are learning to play by the capitalist rules. Turkey has more chance to attract new financial resources than those countries such as Russia and Eastern Europe countries. Istanbul offers some advantages

in terms of geographical proximity. Turkey's 25 years of financial liberalisation and financial crisis experience could be supported by the strong financial system. Although the impact of political and macro-economic factors on the size of financial system is not investigated in this dissertation, the strong political, legal, and macro-economic environment is vital for the financial system and centre. However, the risk of unrest in the Middle East region is one of the most important threats to Istanbul's success.

The financial centre generates economic gains in the form of increased employment. İstanbul will be the leading centre for the provision of accounting and related professional services in the Middle East region. If Istanbul wants to continue to compete successfully in the global economy, it has to have a workforce equipped with the range of skills needed by the finance industry. Therefore, the number of accounting and finance professional should be increased by the support of the government. The government should work with the universities to enhance university education in international finance and finance major.

As seen in empirical study, the size of financial system is the important matter for the growth potential of a financial centre. Foreign entities and investors are not restricted from participating freely in domestic markets, thus the limiting the participation narrows the growth opportunities in the financial system. Turkey should achieve the same standards as major players i.e. London, New York, Hong Kong, and Singapore.

Istanbul Regional Financial Centre should bring together the strengths of the well-developed banking sector and the capital markets, which are proved in the empirical model in this dissertation, A deep and efficient capital market will support Turkey's and Istanbul's next stage of financial development and contribute to domestic rebalancing between the banking sector and the capital markets. Moreover, the action plan for the development of derivatives market should be prioritised considering global financial centres are the largest venue for derivatives trading. The objective of Turkey should be to create new opportunities for profit-making activity, to attract new businesses, new international funds, new financial instruments, to encourage efficiency, and to stimulate job, to increase the contribution of financial sector to GDP.

By considering the characteristic of the financial system in global and regional centres, Istanbul will be grown and developed first as a national financial centre and, then as a regional and international financial centre by implementing right strategies. However, the financial centre does not emerge overnight, the government, regulators and financial institutions must work intensively. The following crisis, which are the Western European exchange rate mechanism crisis of 1992, the Mexican peso crisis (1994–95), the Asian crisis (1997–98), the Russian rubble crisis and debt moratorium (1998), the Brazilian crisis (1998–99). Turkey crisis (early 2001) and Argentina crisis (late 2001) show that financially globalized economy could be an unstable economy. Therefore, Turkey as an emerging market and a candidate for regional financial centre could not take any threats on the deterioration of financial regulation. The financial systems never learn and governments and people use the models without looking at financial history since crisis are repeating regularly based on the same root. We should always be in line with our competitor and complementary financial centres; and our regulatory structure should be effective, consistent, and proactive. Finally, we do not make the same mistake as others did. In case the financial centres not compliant with international rules are faced with increasing political pressure and risk. Well-regulated financial centres may be considered as safe havens. For emerging financial centres such as Istanbul, Dubai, Moscow, and Shanghai market liquidity, market infrastructure and sound regulation and supervision are awkward. Those conditions make more difficult to challenge with top class international financial centres such as London and New York.

This dissertation is the first study to focus on the formation and development of the financial centres and analysing Istanbul potential. From the policy point of view, the study is also helpful to the finance authorities and Turkish government as the study proves statistically and descriptively, the importance of banking sector and the capital markets on the size of the financial system in financial centres. Additionally, the nexus between the characteristics of financial system and the size of the financial system is depicted in financial centres around the world and Turkey by classifying countries under three financial centre categories that are compared in pattern. The dissertation also presents the characteristics of the financial system in other countries' centres and

contributes to the development of financial markets and banking sector in Istanbul Financial Centre.

On the other hand, the major limitation of the study is not incorporating the role of non-banking financial institutions, foreign exchange, and derivative markets on the development of the financial centres. However, these limitations themselves provide an opportunity for the extending further research on this subject while considering, the detailed measures of derivatives, foreign exchange markets, and non-banking financial institutions.

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