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WEALTH AND THE CITY:
The Competitiveness of Port Cities and Non-Port Cities

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Dedication

I dedicate my thesis to my dear parents Henry Kyule and Elizabeth Nyamai.

Executive Summary

The advent of the container in the late 1960s revolutionized the way trade is conducted across the world today. Take a pair of shoes from China with a retail price of $110. The transport cost incurred is $0.99. That is less than one percent of the retail price. China exports around 20 million TEUs (Twenty Foot Equivalent Units), a standard container, to Europe every year. This shows the intensity of activity experienced in the port. Most of the port operations have always been labour intensive however very few advanced ports such as the port of Shanghai in Asia and Rotterdam in Europe make use of automated machines. With such volumes of cargo inflows, it is almost obvious that many companies would choose to locate in port cities to enjoy the advantage of cheap water access. One may also imagine that port cities attract more investments compared to cities without a port due to the economies of scale in transportation and the endowment factors. Ports however do not create an advantage of attracting investments compared to cities without a port. In fact, an attempt of a non-port city switching to a port city will reduce the volume of investments received in the city. Regional variations however do play a role in determining the influence of a port on the volume and value f investments.

Abbreviations

IHS	Institute for Housing and Urban Development
FDI	Foreign Direct Investments
GDP	Gross Domestic Product
USD	United States Dollars
APM	A.P Moller Terminals
DP World	Dubai Ports World
SIPG	Shanghai International Port Group
PSA	Port of Singapore Authority
HPH	Hutchinson Port Holdings
SSA	Singapore Shipping Authority

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Chapter 1: Introduction

In many countries, their dominant cities have developed mostly at ports (including sea, river, and lake ports). In most East Asian countries today, for example, a disproportionate share of population and manufacturing industries is concentrated in their primal cities located at ports (e.g., Indonesia, Philippines, and Thailand). Furthermore, there are many large cities for which ports do not play any important role today, but their growth had been initiated by the advantage of good water access in the past. Many port cities (in particular, those in developed countries) have continued to prosper even though the initial advantage of cheap water access had ceased to play an important role. In the U.S., for example, all the ten largest cities in 1920 (i.e., New York, Chicago, Philadelphia, Detroit, Cleveland, St. Louis, Boston, Baltimore, Los Angeles, and Buffalo) were developed as port cities, and most of them remain to be great cities today even though (water-based) ports have little importance for their leading economic activities today. (Fujita and Mori, 1996). Since the advent of the container in late 1960s, the relationship between ports and their host cities has become disconnected. The success of cities is no longer connected to its port but more to cities' ability to diversify and upgrade into higher skilled services such as Research and Design (R&D) and command and control services as is the case with the city of London.

Recent news on the maritime sector has revealed a slow growth rate of the port operations for example, APM Terminals, one of the world's largest shipping terminal and shipping giant Maersk Line have reported very weak demand for container freight for the first half of 2015 and predict that the segment will grow slower than expected at a rate of 2-4% over 2015 as a whole. Ports, however are still sites for considerable foreign investments since shipping is a global business and terminal infrastructure is capital intensive. For example, APM Terminals, announced a $200million investment in the port of Cartagena in Columbia's business port and purchase of a majority stake in the leading Spanish container terminal operator. In addition, Shanghai International Port Group (SIPG) won the concession of port Haifa (in Israel) new terminal operations for 25 years from 2021 rendering SIGP one of the global terminal operators and placing Shanghai at a competitive edge than its peers.

The developments in maritime sector, reflected in the activities of major ocean carriers now influence port traffic to a greater degree. Notteboom and Winkelmans (2001) argue that ports have experienced a shift from economies of scale to economies of scope. Shipping lines have become increasingly monopolistic players in the market as they attempt to consolidate via mergers and alliances. Ports have become dependent on the shipping lines and have been forced to enlarging back-up areas, with the creation of logistic centres and new terminals, so as to enhance and/or sustain their relative competitiveness (Lee, Song, et al., 2008). The port of Rotterdam for instance has opened the second phase of its port to handle more shipping traffic with automated infrastructure with an aim to compete with leading ports such as Shanghai, Singapore and Hong Kong located in the Asia and Pacific region.

Although Krugman (1994) , arguing from a neo-classical point of view finds no need for usefulness in assessing the competitiveness of a country, Dunning(1995) suggests that a comparison between both the overall and sectoral productivity of countries is relevant insofar as it is a first step in identifying whether or not a country's firms are as efficient as they might be, or if they are maintaining, or increasing to, an optimum level of productivity.
Empirically, analysts have tried to highlight the relation between competitiveness and technology by regressing a measure of export performance on a technology variable, usually based on R&D or patent statistics (Fagerberg, 1988a). Kaplinsky and Paulino (2005) inform that innovative activity is reflected by R&D expenditure and percentage of skills of different sorts in the labour force. This study also analyses the innovativeness of a city by its ability to attract high knowledge intensive activities which largely comprise of R&D, ICT and Headquarter activities.

Having the aforementioned in mind, the question of whether port cities have an advantage over non-port cities in attracting a higher volume of FDI remains unanswered. Research on the role of port is limited whereby port studies ignore the issue of FDI. This paper seeks to contribute to literature on ports by investigating whether the port has an influence on the volume and value of FDI and whether the performance of the port affects both volume and value of Greenfield FDI.

The following parts of this thesis look at the development of Port cities, their competitiveness and the determinants of FDI. The third chapter explains the data and models used for the analysis; the fourth chapter gives the results and findings of the analysis and the fifth chapter, conclusions and recommendations

1.1.3 Problem Statement

In many countries, their dominant cities have developed mostly as ports, including sea, river, and lake ports (e,g. Tokyo, New York, London, Los Angeles, Amsterdam, Copenhagen). There are also many large cities for which ports do not play any important role today, but their growth had been initiated by the advantage of good water access in the past (e.g., Chicago and Paris). Ports have influenced the growth of cities including inland cities since they act as the link between land and sea. Many port cities (in particular, those in developed countries) have continued to prosper even though the initial advantage of cheap water access had ceased to play an important role long before. In the U.S., for example, all the ten largest cities in 1920 (i.e., New York, Chicago, Philadelphia, Detroit, Cleveland, St. Louis) (Fujita and Mori, 1996). Ports, however are still sites for considerable foreign investments since shipping is a global business and terminal infrastructure is capital intensive. What type of industries therefore are attracted in port regions and of what value (US Dollars) are they? Notteboom and Winkelmans (2001) argue that ports have experienced a shift from economies of scale to economies of scope suggesting that port cities are at risk of losing important customers owing to the power possessed by shipping lines of determine a port of call. (Cullinane, Wang, et al., 2006a). Does the port then have an influence on the development of the city today?

1.1.4 Research Objective

Having mentioned the above, this research aims to

a. Explore the influence of a port on the volume (Count) and value (US Dollars) of Greenfield FDI inflows into a city.

1.1.5 Research Questions and Hypotheses

Several research questions and hypotheses have been formulated. These are used as a guide to meet the objective and provide an answer to the outlined problem statement.

Research Questions

How does a port influence the volume and value of Greenfield FDI compared to a non-port city?

a. What characteristics of a port influence the volume and value of Greenfield FDI?
b. What industries are most suited to port cities and how does this affect both the volume and value of Greenfield FDI?
c. Does the influence of the port vary across different geographical regions?

Hypotheses

- H_1 Port cities attract more volume (count) Greenfield FDI compared to non-port cities.
- H_2 Port cities attract less value (US Dollars) of investments compared to non-port cities.
- H_3 The performance of a port (large container throughput, high logistics performance and global shipping networks) affect the volume of Greenfield FDI.

- H_4 Port cities are more industrial oriented and are therefore less attractive to high knowledge intensive FDI (R&D, Headquarters, ICT, Sales and Marketing, Customer Care Services and Education &Training) compared to non-port cities.
- H_5 The port influences the investments received only in the Asia and Pacific Region and the Middle East but does not play a major role in the other regions(North America, Europe, Latin America, Africa and Middle East).

1.1.6 Significance of the Study

The research aims to contribute to existing literature on maritime studies by identifying the influence of a port on the count and value of Greenfield FDI in port cities and non-port cities.

1.1.7 Scope and Limitations

The study covers one hundred and twenty eight global cities comprised of sixty three port cities (cities with a sea port) and sixty five non-port cities. The selection of the cities is based on data availability of the independent variables taken from the Euromonitor Passport Survey. The study uses only secondary data and statistical methods have been applied to correct any anomalies and skewness of the data. The research looks at changes across nine years from 2005 to 2013 therefore most recent information is not represented in the results.

Chapter 2: Literature review

2.1 Development of Port Cities

The experience of port cities around the world shows that the port-city interface is an important feature, and a sensitive area of concern in economic, geographical, environmental and planning terms. Coastal cities generally owe their origin and redevelopment to the port function. Port geography is concerned firstly with the distribution, character and functions of ports themselves, and secondly with their relationships with the hinterlands they serve and with the forelands with which they are linked across the oceans (Hoyle B., 1988).

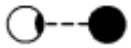
STAGE	SYMBOL ○ city ● port	PERIOD	CHARACTERISTICS
I Primitive port/city		Ancient/medieval to 19th century	Close spatial and functional association between city and port
II Expanding port/city		19th-early 20th century	Rapid commercial/industrial growth forces port to develop beyond city confines, with linear quays and break-bulk industries
III Modern industrial port/city		mid-20th century	Industrial growth (especially oil refining) and introduction of containers/ro-ro require separation/space.
IV Retreat from the waterfront		1960 s-1980 s	Changes in maritime technology induce growth of separate maritime industrial development areas
V Redevelopment of the waterfront		1970 s-1990 s	Large-scale modern port consumes large areas of land/water space, urban renewal of original core

Figure 1: Evolution of the port-city interface according to Hoyle B (1989) "The Port-City Interface: Trends, Problems and Examples" Vol. 20 No.4 pg 432

The development of port cities in Europe as explained by Hoyle (1988) in figure 1 above distinguishes the development of the port in five phases, namely; the primitive city port existing from the ancient/medievial times to the 19th Century, characterised by interdependence and very close proximity of the city to the port; the expanding port city which begins to detach from the port resultant from technological developments such as industries, railway connectivity and overseas political expansion; the modern industrial port involving rapid spatial separation between the city and the port as a result of container terminals and large space consuming industries and finally the emergence of maritime industrial development areas reinforcing the retreat from waterfront. This retreat, otherwise known as regionalisation in Notteboom and Rodrigue (2005) model, in figure 2 below, is seen as a strategy to deal with the diseconomies of scale resulting from increased port traffic and the heavy burden on local rail and road in port cities. Additionally, Notteboom and Rodrigues argue that the transition towards port regionalization is a gradual and market-driven process imposed on ports that mirrors the increased focus of market players on logistics integration.

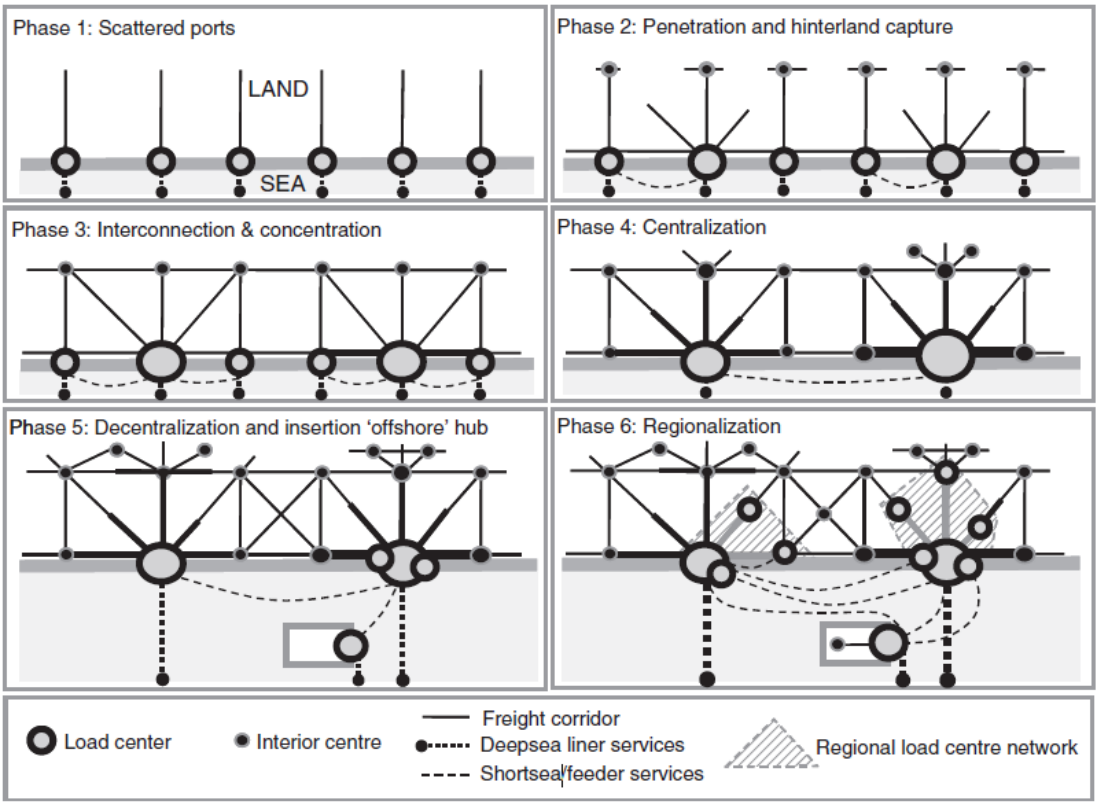


Figure 2: Port Regionalization: "Towards a New Phase in Port Development", Maritime Policy and Management, Vol.32 No.3, pg300. Source: Notteboom, T. and Rodrigue (2005)

The tendency towards logistics integration in the port and maritime industry and the impact of changes in logistics on the functional role of ports in value chains are well documented in recent literatures. The development of global supply chains has increased the pressure on the maritime haul, on port operations and on inland freight distribution. Ports compete to attract a greater number of shipping vessels. Recent trends have shown that ports, irrespective of the magnitude of investment in technology, no longer have the power to determine which companies choose to locate in the ports. Carbone and Martino, (2003) also argue that the competitiveness of a port is not only determined by internal strengths (efficient cargo handling and hinterland connection) but also by its links in a given supply chain posing a risk of ports losing important customers.

The trends in port operations are termed as post-Fordism by Notteboom and Winkelman (2001) where a shift has been experienced from the economies of scale in the Fordism theory to economies of scope suggesting that production companies adopt flexible multi-firm organization structures on a global scale. In the port Fordinian era, outsourcing takes three forms with regard to the supply chain system. The first is the *outsourcing of the production of components*-large production units are replaced by a network of suppliers organised on a global or local scale; second is the *Value-Added Logistics (VAL)* - production and distribution components of the supply chain become integrated into one and may include secondary manufacturing activities such as systems assembly, testing, software installation etc. and third is the o*utsourcing of transportation, warehousing and distribution* where transportation, warehousing and distribution activities are outsources to a third party. These changes in production and distribution require ports to be more than simply efficient links and hubs in transport networks but also to enhance the range of provision of logistics services capable of generating comparative advantages over other transport infrastructures. Slack (1993) believes that there is very little opportunity for ports to avoid the pattern of creation of logistic centres and new terminals and investing

in more sophisticated infrastructure to meet the demands of the shipping lines if they wish to retain their competitiveness and to maintain their hub port status.

2.2 What is competitiveness?

Most of the literature on competitiveness has a focus on the countries and their ability to increase the income of their inhabitants. Fagerberg (1988b) and Azru (2003) define the international competitiveness of a country as the ability to realize central economic policy goals, especially growth in income and employment without running into balance-of-payments difficulties. Schwab (2010a) defines competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The productivity level also determines the rates of return obtained by investments suggesting that more competitive economies tend to be able to produce higher levels of income for their citizens. The same is echoed by Porter and Ketels (2003) who suggest that a nation's standard of living is determined by the productivity of its economy, which is measured by the value of goods and services produced per unit of the nation's human capital and natural resources. In agreement with Schwab, they emphasize that competitiveness is measured by productivity which allows a nation to support high wages, a strong currency and attractive returns to capital, and with them a high standard of living.

Krugman's (1994) view on competitiveness is rather counterintuitive and questions the usefulness of benchmarking the competitiveness of countries. His belief is on the fact that the productivity of an industry in country is lower or higher than the same industry in another country and offers no guidance as to which country's industry ought to be allocated more resources. Dunning (1995) counters his view by arguing that Competitiveness is about benchmarking economic performance which may he defines in various ways. From the perspective of the business enterprise, performance means its productivity, profitability, market share, or rate of growth of sales; its benchmark of comparison is the performance of its major competitors and, more particularly, those perceived to utilize "best practice" techniques and strategies. From the perspective of a government of a country, the most widely accepted measure of national performance is the Gross National Product (GNP) per head of the population, or the change in GNP per head over time. National competitiveness is usually assessed by comparing the performance of one country with that of the countries serving similar world markets, although the countries benchmarked may vary according to the industrial sectors and markets being considered. Hefurther suggests that a comparison between both the overall and sectoral productivity of countries is relevant insofar as it is a first step in identifying whether or not a country's firms are as efficient as they might be, or if they are maintaining, or increasing to, an optimum level of productivity.

Some of the factors affecting competitiveness as outlined by Porter and Ketels (2003) are clusters, (i.e geographically proximate groups of interconnected companies, suppliers, service providers, and associated institutions in a particular field, linked by commonalities and complementarities such as Silicon Valley or high performance cars in Southern Germany) which affect competitiveness in three broad ways: First, they increase the level of productivity at which constituent firms can operate and reduce downtime in cases of technical failures in the production process due to the quick access to local service providers that can solve such problems quickly. Second, they increase the capacity for innovation and productivity growth. For example, the presence of world-class research universities, teaching hospitals, competing biotech companies, and cluster institutions that facilitate interaction among all these foster the dissemination of knowledge and provide a fertile ground for new ideas and third, they stimulate and enable new business formation that further supports innovation and expands the cluster.

The Global Competitiveness Report (2010a) outlines that competitive economies are those that have in place factors driving the productivity enhancements on which their present and future prosperity is built. The indicators of competitiveness are grouped into twelve pillars.

The ***first*** is institutional environment suggesting that the quality of institutions has a strong bearing on competitiveness and growth. It influences investment decisions and the organisation of production and plays a central role in the ways in which societies distribute the benefits and bear the cost of development strategies and policies.

The ***second*** pillar is infrastructure which is critical for determining the location of economic activity. Well-developed infrastructure reduces the effect of distance between regions with the result of truly integrating national markets and connecting at low costs to markets and other regions and countries. Effective modes of transport for goods, people and services; such as quality roads, rail, ports and air transport enable entrepreneurs to get their goods and services to market in a secure and timely manner. A solid extensive telecommunication network also allows for a rapid and free flow of information which increases overall economic efficiency.

The ***third*** pillar is Macroeconomic stability which is important for business and overall competitiveness of a country. Firms cannot operate efficiently when inflation rates are out of hand. In effect, the economy cannot grow in a sustainable manner unless the macro environment is stable.

The ***fourth*** pillar is Health and Primary education. Poor health results in significant costs to business since unhealthy workers operate at lower levels of efficiency and basic education increases the efficiency of each individual worker. In addition, workers who have received little formal education can carry out simple manual work. Lack of basic education can therefore become a constraint on business development with firms finding it difficult to move up the value chain.

The ***fifth*** pillar is higher education and training which is crucial for economies that want to move up the value chain beyond simple production processes and products. Today's globalizing economy requires economies to nature pools of well-educated workers who are able to adapt rapidly to their changing environment. The extent of staff training is also important for ensuring a constant upgrading of workers' skills to the changing needs of the evolving economy.

The ***sixth*** pillar focusses on efficient goods markets to ensure that these goods can be most effectively traded in the economy. The best possible environment for the exchange of goods require a minimum of impediments to business activity through government intervention. Market efficiency also depends on demand conditions such as customer orientation and buyer sophistication.

The ***seventh*** pillar is labour market efficiency which is critical for ensuring that workers are allocated to their most efficient use in the economy and provided with incentives to give their best effort in their jobs. Efficient labour markets must ensure a clear relationship between worker incentives and their efforts as well as the best available talent.

The ***eighth*** pillar on financial market sophistication highlights that an efficient financial sector allows the resources saved by a nation's citizens as well as those entering the economy from abroad to their most productive uses. Economies require sophisticated financial markets that can make capital available for private sector investments from such sources as loans from a sound banking sector, well regulated securities exchanges, venture capital and other financial products

The ***ninth*** pillar on technological readiness measures the agility with which an economy adopts existing technologies to enhance the productivity of its industries. Technology has increasingly become an important element for firms to compete and prosper. The stock of FDI especially in developing countries went down from a stock of US $1.9 trillion in 2007 by an estimated 15 percent

in 2008 as a result of limited technology. Porter and Ketels (2003) also contribute that technology assimilation is a central challenge for developing countries.

The ***tenth*** pillar is market size, which affects productivity because large markets allow firms to exploit economies of scale. International markets have become a substitute for domestic markets especially for small countries. Exports can be thought of as a substitute for domestic demand in determining the size of market for firms of a country.

The ***eleventh*** pillar focusses on business sophistication as conducive to higher efficiency in the production of goods and services leading to increased productivity enhancing a nation's competitiveness.

The ***twelfth*** and last pillar of competitiveness is innovation. Innovation is important for economies as they approach the frontiers of knowledge. This means sufficient investment in research and development (R&D) especially by the private sector, the presence of high quality scientific research institutions and the protection of intellectual property. For advanced economies, innovation is a matter of pushing the world frontier of knowledge. The creation and commercialisation of new knowledge is a final, and crucial source of dynamic improvements in productivity (Porter and Ketels, 2003).

The twelve pillars are related to each other and tend to reinforce each other. For example innovation cannot be performed in a world without institutions that guarantee intellectual property rights. In turn, patents cannot also be effective in countries with poorly educated people and poorly trained labour force and is more difficult in areas with poor business sophistication and poor technology.(Schwab, 2010a)

2.3 FDI as a measure of Competitiveness

As earlier stated, the definitions on competitiveness suggest that economic growth marked by an increase in income and employment of the inhabitants of a city makes the city more competitive than its peers. According to Hosseini (2005), the main concern of FDI is not necessarily the international mobility of capital but also includes a package that contains transfer of managerial skills and technical knowledge. Inward foreign investment improves the business environment by elevating the level of domestic competition, and raising the level of buyer sophistication through the procurement standards and choices of foreign multinationals. It also provides an economy with an inflow of new technologies, operational practices, and other knowledge developed elsewhere (Porter and Ketels, 2003). Narula and Marin (2003), believe that policy-makers are beginning to see MNEs as a practical and efficient method of promoting economic development, as the ownership advantages are believed not only to affect the nation's productivity directly, but also indirectly through spill-overs, making FDI a good measure of competitiveness.

FDI investments are largely categorised into two: Greenfield and Merger and Acquisition (M&A). Greenfield FDI is perceived as a net increase in capital stock with corresponding stronger implications for employment and income growth (Mullen and Williams, 2005). M&A's are more likely to be a channel of technology diffusion compared to Greenfield investment. According to Wang and Wong (2009), Greenfield project entails building a subsidiary from bottom up to enable foreign sale and/or production while promoting economic growth with use of the investor's resources and assets acquired from local markets. M&A acquires existing firms in the host country and uses primarily assets of a local firm combining them with the investor's resources, notably managerial capabilities. Some authors such as Meyer and Estrin (2001) refer to M&A as Brownfield investments with the definition of a foreign acquisition undertaken as part of the establishment of a local operation where resources and

capabilities are primarily provided by the investor, replacing most resources and capabilities of the acquired firm.

In Greenfield investment, real estate is purchased locally, new facilities are built and employees are hired and trained using the investor's management, technology, know-how and capital. It gives the investor the opportunity to create an entirely new organization specified to its own requirements, but usually implies a gradual market entry. (Meyer and Estrin Saul, 2001); (Wang and Wong, 2009). The new affiliate joins the investing company as a going concern that normally possesses production facilities, sales force, and market share.

A study conducted by Wang and Wong (2009) on the impact of Greenfield and M&A in a city's economy showed that Greenfield investment is positively and significantly associated with economic growth regardless of the host country's level of human capital while M&As can positively affect economic growth only when the host country reaches a sufficient level of human capital. The same study concluded that Greenfield investment can create additional employment and increases the level of competitiveness in the host country while M&A's may transfer ownership and control from domestic to foreign hands which add no production capacity. Research conducted by Mullen and Williams (2005) reveals that FDI has a positive and significant impact regardless of how it is measured and has a causal effect on per capita output. In addition, inward FDI plays a strong, vital role in regional economic activity.

A brief explanation on the theories of FDI as given by Dunning (2000) suggests that FDI takes place in these different situations: First is where the MNC possesses ownership advantages that are not available to the host country firms. These advantages can be tangible (such as superior technology, superior product, or transferable economies of scale and scope), or they can be intangible (brand name, trade mark, etc.). Second is whereby there can be some locational advantages that would make the investment (i.e. FDI) in the host country more profitable or easier than exporting to that country. This can be because of the market size, transportation costs, tariff or non-tariff barriers, or severe anti-dumping laws and finally the internalization advantages, when the MNE believes that its ownership advantages are best exploited internally (through FDI, etc.), rather than sold directly through spot markets, or offered to other firms through contractual arrangements such as licensing, the establishment of joint ventures, or managerial contracting.

The firms are categorized into four:

1. Market-seeking/ Demand oriented FDI; designed to satisfy a particular foreign market, or set of foreign markets;
2. Resource seeking/Supply oriented FDI; designed to gain access to natural resources, e.g. minerals, agricultural products, unskilled labour
3. Rationalized / Efficiency seeking FDI; designed to promote a more efficient division of labour or specialization of an existing portfolio of foreign and domestic assets by MNEs
4. Strategic Asset Seeking FDI; those designed to protect or augment the existing O specific advantages of the investing firms and/or to reduce those of their competitors

In the port cities, shipping lines have become major investors contributing to the growth of ports. The terminal handling industry has become global with international groups such as PSA, HPH,DP World, SSA, Eurogate, APMT being major investors.

2.4 Determinants of Foreign Direct Investments (FDIs)

The modelling of FDI indicators by economist Dunning (2000) represent the eclectic paradigm that explain the choice of location of FDIs. Dunning identifies three determinants prefixed as OLI (Ownership, Location and Internationalization). In his theory, a firm will chose to locate in an area where it can acquire ownership of assets or resources. A company must enjoy ownership advantages (O) in order to compete favourably with other firms so as to invest in a specific country. Anastassopoulos (2007) also concludes that Ownership advantages determine 'who is going to produce abroad' and relate to technology, marketing and management skills or even expertise in the coordination of international activities. Companies search for better locations- lower cost, new markets, competitively high skills - in order to maximize the returns of their investment strategies. If a location is chosen as the destination of FDI, then from the investor's point of view, it must be more profitable to produce in that location than in others, given the location choice of other investors (Cheng and Kwan, 2000).

All the (L) (*Location*) variables described by Dunning (2000), be they labour costs, tariff barriers, the presence of competitors or agglomerative economics rest on the tenets of one or other contextually related location theory, and also the assumption that firms will seek to site their value-added activities at the most profitable points in space. The higher the net innovating, production and transaction costs (or the lower the net benefits) of using cross-border markets, relative to those of internal administrative fiat, as a mechanism for coordinating resource usage, the greater will be the incentive for firms to engage in FDI.

Anastassopoulos (2007) also concurs with Dunning (2000) concerning the choice of location of firms determined by a number of factors which include the existence of raw materials or other assets (e.g. abundant and/or cheap labour), intermediate markets, technological expertise, international transport and communication costs, less rigorous legislation and a more favourable domestic business environment (including institutional framework and resource allocation).

Governments also do have an effect on the physical and human infrastructure of the country and set the rules to carry out business activity. Government policies such as preferential tax treatment, the time and effort needed to gain government approval, the environment of doing business, etc., however have an impact on the location's attractiveness to foreign investors. Competitiveness is hindered by distortionary or burdensome taxes and by restrictive and discriminatory rules on foreign direct investments hence limiting foreign ownership as well as on international trade. Theoretically, the location choice of FDI is determined by relative profitability. (Cheng and Kwan, 2000, Anastassopoulos, 2007, Schwab, 2010a). The way ports are territorially institutionalized is thus crucial for their competitiveness and growth potential, as it determines their scope of strategic action. (Jacobs, 2007).

2.5 Summary of Literature Review and Emerging Trends in Port Development

The trends in port operations suggests that shipping companies shipping lines have the choice of using more than just a single port for the facilitation of their door-to-door cargo movements placing ports at a constant risk of losing its customer base. ((Slack, 1993, Carbone and Martino, 2003, Cullinane, Wang, et al., 2006b). The competitive position of a port is not only determined by internal strengths (efficient cargo handling and hinterland connection) but is also affected by its links in a given supply chain. Ports have become just a part of the supply chain system as port functions shift from economies of scale to economies of scope. (Slack, 1993, Notteboom and Winkelmans, 2001, Cullinane, Wang, et al., 2006a).

The developments in maritime sector, reflected in the activities of major ocean carriers now influence port traffic to a greater degree. Ports have become dependent on the shipping lines and have been forced to enlarging back-up areas, with the creation of logistic centres and new terminals, so as to enhance and/or sustain their relative competitiveness (Lee, Song, et al., 2008).
Since competitiveness is generally measured by the ability to realize central economic policy goals, especially growth in income and employment (Arzu, 2003) ports have to make themselves favourable places to attract both higher volume and high value FDI. Companies search for better locations- lower cost, new markets, competitively high skills in order to maximize the returns of their investment strategies (Cheng and Kwan, 2000) therefore, ports have to consider such variables as well as inland accessibility which has become a cornerstone in port competitiveness.

The findings of this study are of paramount importance to contribute to literature on ports and provide information to various stakeholders on the influence of a port on the volume and value of FDI.

2.6 Conceptual Framework

Definition of Concepts

The conceptual framework identifies dependent and independent variables while controlling for port and non-port cities to check for the significance of a port in attracting volume and value of FDI. The dependent variable is the FDI inflows in both port and non-port cities.

Based on the pillars of competitiveness developed by Schwab (2010a) as well as previous literature on competitiveness and FDI (Anastassopoulos, 2007, Hosseini, 2005, Dunning, 2000, Jacobs, Ducruet, et al., 2010, Wall, Burger, et al., 2011, Merk, 2013, Agrawal and Khan, 2011, Arzu, 2003, Burger, van der Knaap, et al., 2013, Cheng, 2006, Cullinane, Teng, et al., 2005, Wang, Alba, et al., 2013, CHIANG and HWANG, 2013, Schwab, 2010b), the independent variables were identified.

The Real GDP growth measure the growth in income which is a determinant of competitiveness. FDIs, according to Wall (2011) directly contribute to the development of the income of the host country and is measured by Real GDP Growth. A report by Schwab (2010a) also outlines that more competitive economies tend to be able to produce higher levels of income for their citizens. Dunning (1995) suggests that the most widely accepted measure of national performance is the Gross National Product (GNP) per head of the population, or the change in GNP per head over time and GNP is equal to GDP.

The fifth pillar of competitiveness indicates that higher education is crucial for economies that want to move up the value chain beyond simple production processes and products. Companies also search for better locations- lower cost, new markets, competitively high skills (human capital) - in order to maximize the returns of their investment strategies. (Cheng and Kwan, 2000). The population that has attained higher education will be used as the indicator for determinant of human capital in the city.

Governance is has a direct impact on the number of FDI inflows into a city. It affects the physical and human infrastructure of the country and sets the rules to carry out business activity. Government policies such as preferential tax treatment, the time and effort needed to gain government approval, the environment of doing business, etc., have an impact on the location's attractiveness to foreign investors. Theoretically, the location choice of FDI is determined by relative profitability. (Cheng and Kwan, 2000, Anastassopoulos, 2007). The present legal and administrative structure is a major impediment in port cities. The way ports are territorially institutionalized is crucial for their competitiveness and growth potential, as it determines their scope of strategic action (Jacobs, 2007)

The population density is used to measure the market availability and consumer demand that is desirable by investors.

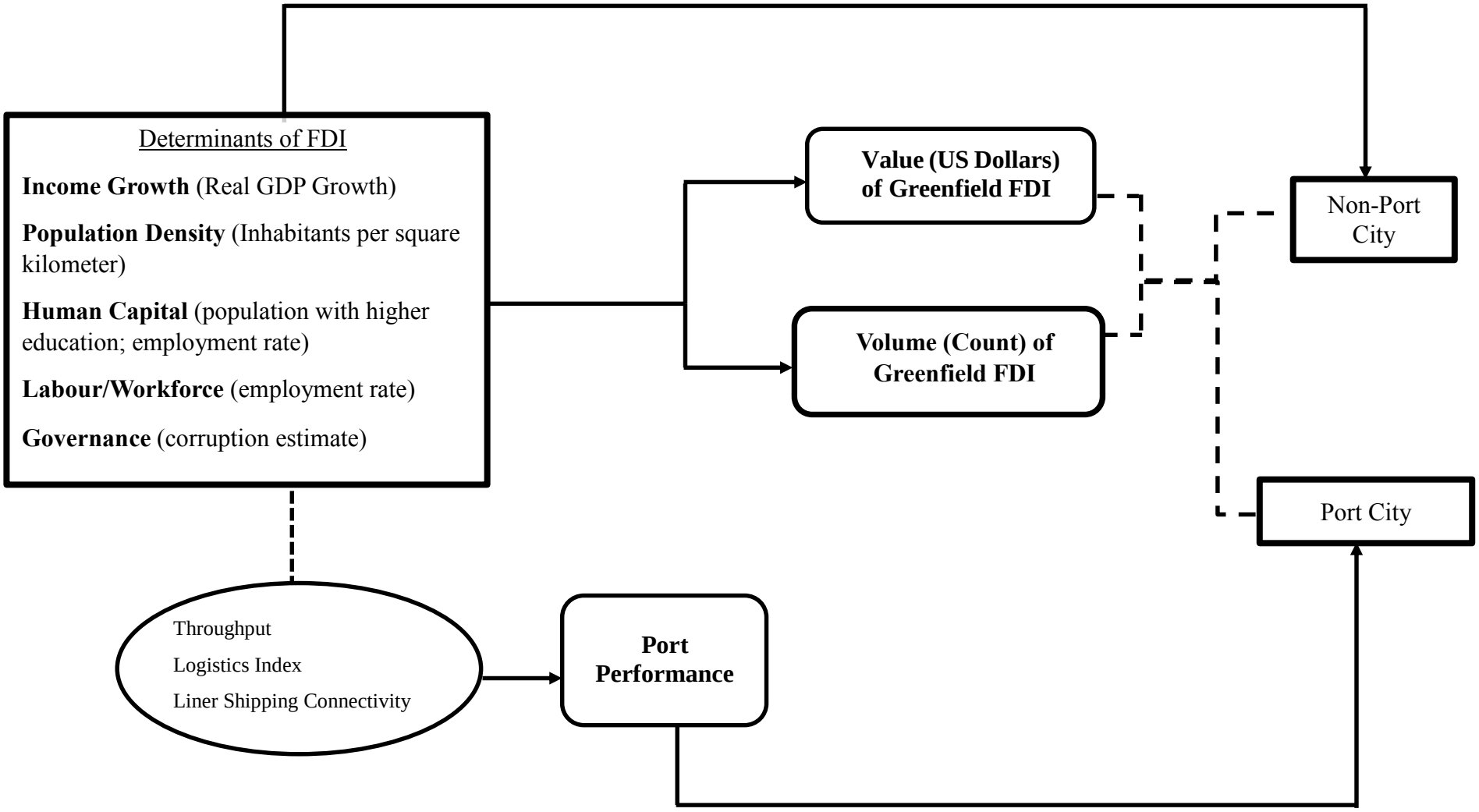


Figure 3: Conceptual Framework. Source: Author's

Chapter 3: Research Design and Methods

3.1 Operationalization: Variables and Indicators

In this study, Based on the literature on FDI and its determinants, (Anastassopoulos, 2007, Hosseini, 2005, Dunning, 2000, Jacobs, Ducruet, et al., 2010, Wall, Burger, et al., 2011, Merk, 2013, Agrawal and Khan, 2011, Arzu, 2003, Burger, van der Knaap, et al., 2013, Cheng, 2006, Cullinane, Teng, et al., 2005, Wang, Alba, et al., 2013, CHIANG and HWANG, 2013, Schwab, 2010b) several variables have been used to identify the influence of the port on volume and value of Greenfield FDI *see annex 1.*

The independent variables used are obtained from Euromonitor Passport survey is similar to those used by Wong and Wang (2009) in their study on the determinants of economic growth. Their research argues that Greenfield FDI leads to a percentage increase in per capita Real GDP growth and can create additional employment as well as increase the level of competitiveness in the host country. The Real GDP in a city measures the potential pool of investors and the abundance of capital present. (Wall et al 2011). A report by Schwab (2010a) outlines that more competitive economies tend to be able to produce higher levels of income for their citizens. The population density represents the population of people per square kilometre and is a representation of the city's market and consumer demand. Governance is assessed based on the six dimensions of governance quality by Kaufmann (2004) which include voice and accountability, political stability, effectiveness of government, quality of regulation, rule of law and control of corruption. The corruption estimate is used as the indicator for governance based on data availability.

The employment rate represents the potential pool of labour and the purchasing power of the population. The population with higher education represents the presence of smart people in the city and their ability to develop new ideas and quickly grasp use of new technology.

The performance of the port is measured using variables obtained from the World Bank Maritime Statistics. These variables are chosen based on data availability and they are:

a. Throughput-measures as the flow of containers from land to sea transport modes, and vice versa, in twenty-foot equivalent units (TEUs).
b. Logistics Performance Index- an overall score reflecting perceptions of a country's logistics based on efficiency of customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time. The index ranges from 1 to 5, with a higher score representing better performance.
c. Liner shipping connectivity- measures the networks of port authorities with global shipping lines

3.1.1 Sample Size and Selection

The research analyses one hundred and twenty eight global cities *see annex 2* chosen based on the survey by EuroMonitor Passport which is a global market research database which provides statistics, analysis and surveys on industries, countries and consumers worldwide. The data on the companies is obtained from FDI Markets Survey which is a

comprehensive database of cross-border Greenfield investments covering cities, countries and sectors worldwide. The data covers investment projects, capital investments and job creation as well as companies investing overseas.

3.1.2 Validity and Reliability

The variables selected were most appropriate measure of FDI inflows into a city. Most of the variables, with the exception of the port city indicators, had projections until 2025 making provisions for the data to be used for further studies in the same field or other fields that require use of similar variables.

3.1.3 Data Analysis Methods

Volume (Count) FDI

The research analyses the volume (Count) and value (US Dollars) of Greenfield FDI in the cities. The port cities and non-port cities are coded as binary variables to measure the effect of the port on the investments. The determinants of FDI (Real GDP growth, population density, employment rate, higher education and corruption estimate) are used as control variables.

A first attempt of the appropriate model is using the OLS regression to predict volume (Count) FDI in port and non-port cities however, a simple histogram in figure 3 below shows skewness of the data meaning that the mean is less than the mode while ideally it should be at the centre indicating that the mean is equal to the mode.

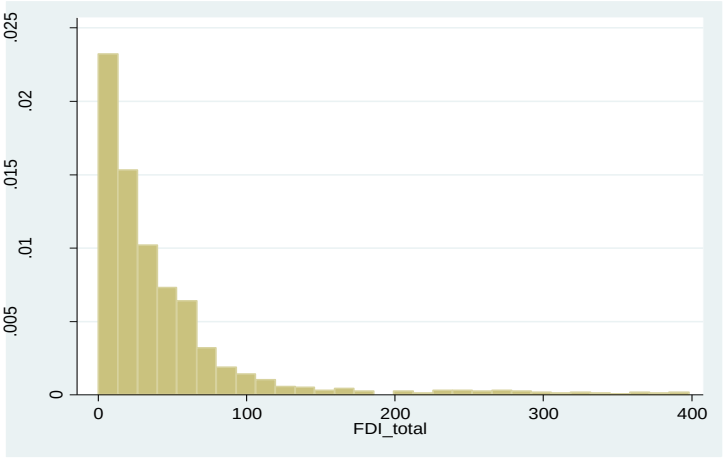


Figure 4: Histogram of dependent variable-Total number of FDI

An OLS regression is therefore inappropriate.

Since the volume of FDI in this study is count data, it often follows a Poisson distribution. A test to find out whether Poisson is a best fit should show that the mean and variance are the same. A summary of the volume (Count) FDI in Figure 4 below indicates that the variance is nearly 84 times larger than the mean.

FDI_total

	Percentiles	Smallest		
1%	0	0		
5%	2	0		
10%	4	0	Obs	1152
25%	11	0	Sum of Wgt.	1152
50%	25		Mean	44.80556
		Largest	Std. Dev.	60.93109
75%	54	384		
90%	97	389	Variance	3712.598
95%	161	390	Skewness	3.153903
99%	330	398	Kurtosis	14.40978

Figure 5: Mean and Variance of dependent variable with Poisson regression

The distribution of Count FDI displays signs of over-dispersion, that is, greater variance than might be expected in a Poisson distribution. An alternative analysis is done to test the Poisson goodness-of-fit.

The results as in Figure 5 below reveal that the large value for chi-square in the **goodness-of-fit** is another indicator that the Poisson distribution is not a good choice.

```
Deviance goodness-of-fit =  36780.46
Prob > chi2(1144)        =    0.0000

Pearson goodness-of-fit  =  50008.87
Prob > chi2(1144)        =    0.0000
```

Figure 6: Goodness-of-fit with Poisson Model

An alternative to Poisson, one which allows for the variance to be greater than the mean is the Negative Binomial distribution which is often more appropriate in cases of over-dispersion. In a Negative Binomial Analysis, a test of the over-dispersion parameter alpha is used to determine the model's goodness of fit. When the over-dispersion parameter is zero the negative binomial distribution is equivalent to a Poisson distribution. In Figure 6 below, alpha is more than zero and thus reinforces that the Poisson distribution is not appropriate.

_cons	2.697789	.1317313	20.48	0.000	2.439601	2.955978
/lnalpha	-.2568129	.0409731			-.3371186	-.1765072
alpha	.7735129	.0316932			.7138241	.8381927

Likelihood-ratio test of alpha=0: chibar2(01) = 3.2e+04 Prob>=chibar2 = 0.000

Figure 7: Test with Negative Binomial Regression

For further verification, one final check is done to see how well the dependent variable, (Count) FDI, fitted both the Poisson and Negative Binomial distributions. The results as shown in Figure 7 below, give clear evidence that a Poisson model is not the best fit for this analysis. The results of the Poisson model show zero while those of the Negative Binomial show a smooth curve.

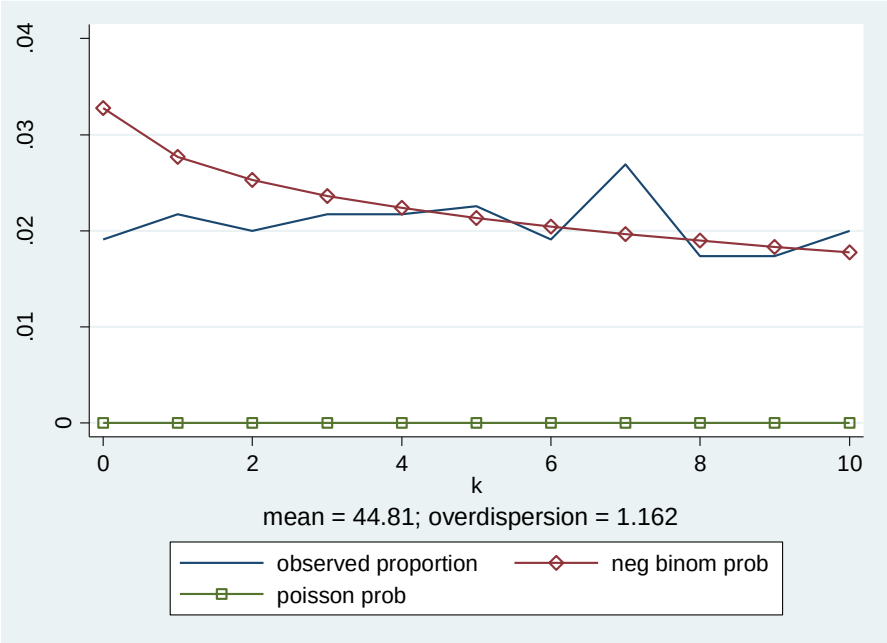


Figure 8: Comparison of Poisson and negative Binomial Regression

Having known that a Negative Binomial regression is the most appropriate model for the analysis, a test has to be performed to find out what model is appropriate between fixed effects and random effects.

A fixed effects model explores the relationship between dependent and independent variables within an entity, in this case, the city is the entity. Each city has its own individual characteristics that may or may not influence the dependent variables (for example, being a port city can/cannot influence the volume and value of FDI; or the throughput of port cities can influence the type of FDI received in the city).

The model for the fixed effects is

$$\mathbf{Y}it = \boldsymbol{\beta}\mathbf{1}\mathbf{X}it + \boldsymbol{\alpha}i + \mathbf{u}it$$

where

- αi(i=1....n) is the unknown intercept for each city (city-specific intercepts).
- Yit is the dependent variable (FDI) and i= entity and t= time.

- Xit represents one independent variables,
- β1 is the coefficient for that independent variable,
- εit is the error term

In the random effects model however, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the dependent or independent variables included in the model.
An advantage of random effects is that time invariant variables such as gender can be included. In the fixed effects model these variables are absorbed by the intercept.
The random effects model is:

$$\mathbf{Y}it = \boldsymbol{\beta}\mathbf{X}it + \boldsymbol{\alpha} + \mathbf{u}it + \varepsilon it$$

where
- εit represents within-city error
- uit represents between-city error

Random effects assume that the entity's error term is not correlated with the dependent variable which allows for time-invariant variables to play a role as explanatory variables.

The results of the Hausman test in figure 8 below show that a fixed effects model is most appropriate since the chi square is <0.05.

```
    chi2(5)  =  (b-B)'[(V_b-V_B)^(-1)](b-B)
             =         26.64
 Prob>chi2  =        0.0001
```

Figure 9: Results of the Hausman Test

Value of FDI

An OLS regression is tested for its bet fit for the value (US Dollars) of FDI. A simple histogram shows negative skewness meaning that the mean is less than the mode.

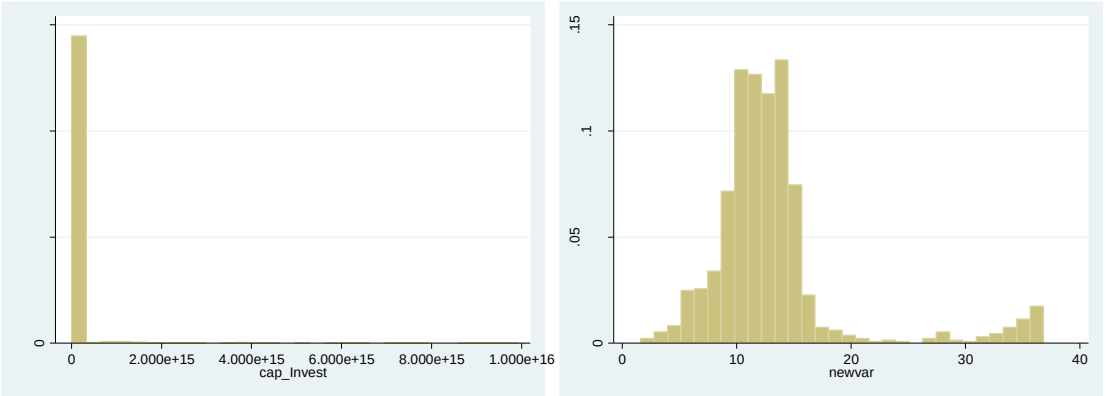


Figure 10: Value of FDI in US dollars (left histogram shows the skewness and the one on the right shows the logarithm(normal curve)

To correct the skewness of the data, a logarithm of the value of investments is applied to normalise the data. The results in figure 9 above show a normal distribution indicating that the logarithm of the investments is most appropriate.

Chapter 4: Research Findings

4.1 Hypothesis 1: Ports cities attract more volume of count Greenfield Foreign Direct Investments (FDI) than non-port cities.

In this hypothesis, the interest is whether the dummy variable (Port_non-port) has an influence over the number of Greenfield investments (Count FDI). The port cities are coded as 1 and non-port cities as 0.

From Table 1 below, it is clear that switching from a non-port city to a port city will reduce the number of Greenfield FDI by 26%. The result makes hypothesis 1 null since port cities do not attract more Greenfield FDI than non-port cities. **In this case, hypothesis 1 is rejected.**

Count FDI	All cities
Port_non-port=1	-0.26*
	(0.12)
Port_non-port=0	0.00
	(.)
Real GDP growth	1.78
	(3.06)
population_density	-0.07
	(0.04)
employment_rate	2.10
	(3.95)
higher_education	0.22***
	(0.05)
corruptionestimate	-0.15*
	(0.06)
Constant	2.02***
	(0.27)
Observations	1152
R^2	
Adjusted R^2	

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 1: Testing the influence of port city on the number of Greenfield FDI

With other control variables, we can deduce that an increase in the number of highly educated people will increase the volume (count) of Greenfield FDI. Smart people are able to grasp and make use of higher level of technology much faster compared to people with a lower level of education. Since they are more knowledgeable, they contribute unique ideas that investors seek in order to compete with their peers. A decrease in the

corruption estimate of the city also increases the volume of Greenfield FDI Companies would prefer to locate in cities where accountability and transparency are principles that govern the city in order to reduce financial losses associated with corruption. Real GDP Growth and Employment rate, though not significant, are positive indicating that companies, will prefer to locate in cities where the income of the population and the employment rate is relatively higher, as it signifies a stronger purchasing power of the population. The negative relationship of population density with Greenfield FDI suggests that an increase in the number of people per square kilometre in the city will decrease the number of investments. A rise on population density signifies a scarcity of land and higher land rates. Since a Greenfield investment purchases Real estate and establishes the company from the ground up, it will incur more expenses setting up the company and may choose to locate in another area where the land rates are lower. An example is Sameer Group of Companies which moved its headquarters from Dubai to Nairobi where land rates are relatively cheaper.

Network of Inward Investments in Sampled Cities

The total number of Greenfield investments received in the sample cities between 2008 and 2013 is shown in the network in Figure 11 below. The thickness of the lines represents the magnitude of investments received in the cities and those with more investments have a bigger green circle. Most of the inward Greenfield investments are concentrated in Europe, North America and East Asia regions with the European region receiving most of the investments. Cities in Africa, Latin America and Australia regions have also received a number of Greenfield FDI within the nine years albeit in smaller numbers compared to the other regions mentioned above.

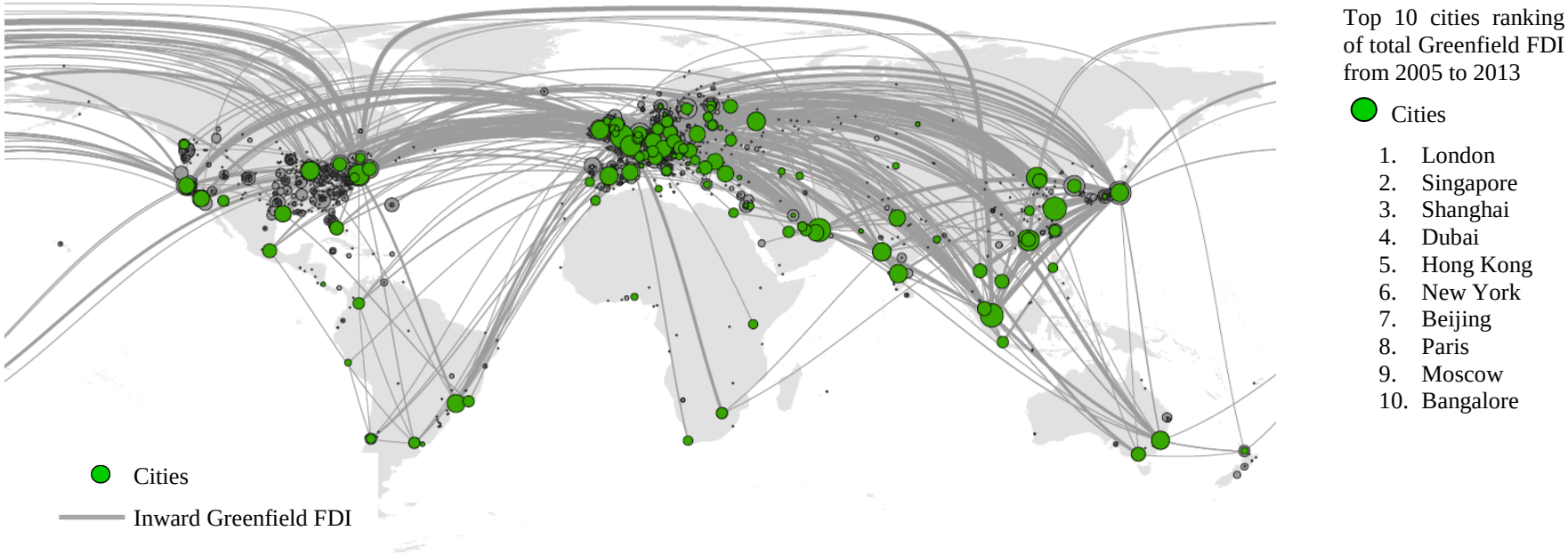


Figure 11: Total Greenfield Investments in the sample cities

Sampled Non-Port Cities

The investments in non-port cities are highly concentrated in the European Region as shown in Figure 12 below. The Asia-Pacific Region and North American region also shows a number of Greenfield FDI received in the cities indicated by the thickness of the lines.

Figure 12: Inward Greenfield FDI network in sampled non-port cities

Sampled Port Cities

Most of the port investments in Figure 13 below are located in South and East Asia, North America and Europe. New York, as seen at the eastern most part of North America receives a high volume and value of investments as indicated by the magnitude and intensity of the lines. Cities such as Singapore, Hong Kong and Shanghai, which rank the highest in port performance globally, also receive a lot of volume and high value of investments. The legend gives the ranking of the cities in volume of Greenfield FDI.

Figure 13: Inward investments in sampled port cities

4.2 H_2 Port cities attract less value (US Dollars) of investments compared to non-port cities.

The test for the second hypothesis uses the same variables as those in section 4.1 above but the dependent variable in this case is the value of investments in US Dollars. As shown in Table 2 below, the port has a negative effect on the value of investments meaning that having a port is less attractive to investors. This affirms the hypothesis that port cities attract less value of investments compared to non-port cities. **The second hypothesis is therefore confirmed.**

	Value(USD)
Port_non-port=0	0.00
	(.)
Port_non-port=1	-0.87
	(0.54)
Real GDP Growth	0.09*
	(0.04)
population_density	2.43***
	(0.72)
employment_rate	2.77*
	(1.29)
higher_eduction	-0.80
	(0.69)
Corruption_estimate	0.60
	(0.31)
Constant	-11.36*
	(5.57)
Observations	1105
R^2	
Adjusted R^2	

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: Testing for the influence of a port on the value (USD) of FDI

While controlling for other factors that are attractive to FDI, an increase in the income of the city indicted by Real GDP Growth increases the value of investments. A higher proportion of smart people and a lower number of unemployed persons creates a favourable environment for high value investments.

4.3 Hypothesis 3: The performance of a port (higher container throughput, high logistics performance and global shipping networks) affects the volume (count) and value (US Dollars) of Greenfield FDI

To test this hypothesis, the model is run only on port cities and with port specific indicators since the interest is how a change in maritime freight in the port affects the volume (count) of Greenfield FDI.

FDI_total	(1) Count FDI	(1) Value(USD)
Real GDP Growth	5.26	0.16*
	(5.83)	(78.08)
population_density	-1.56***	1.61
	(0.34)	(5.08)
employment_rate	1.07*	9.37
	(0.49)	(7.08)
higher_education	1.67***	4.53
	(0.33)	(4.29)
Corruption_estimate	-0.59***	-2.78
	(0.10)	(2.21)
throughput	-0.05	0.61
	(0.07)	(1.29)
logistics_index	0.61	-6.55
	(0.52)	(7.56)
Liner_shipping_connectivity	-0.01**	-0.05
	(0.00)	(0.05)
Constant	17.98***	29.93
	(2.89)	(47.20)
Observations	510	501
R^2		0.03
Adjusted R^2		-0.12

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3: Testing for port performance with volume (count) and value (US Dollars) of FDI

In Table 3 above, an increase in the number of throughput in terms of TEUs reduces the total number of Greenfield investments in port cities

4.4 Hypothesis 4: Ports cities attract less FDI in High Knowledge Intensive Activities (R&D, Headquarter, ICT, Sales, Marketing & Support, Business Services, Customer Contact Centre, Education & Training) than non-port cities

The interest of this test was to find out the industries that are most suited to port cities and how this affects the competitiveness of the city by measuring its ability to attract activities that are linked to innovation. The results of the model are as shown in Table 2 below.

Knowledge Intensive Activities	All cities
Port_non-port=1	-0.29*
	(0.13)
Port_non-port=0	0.00
	(.)
Real GDP Growth	-0.54
	(3.39)
population_density	-0.10*
	(0.04)
employment_rate	3.59
	(4.38)
higher_education	0.28***
	(0.06)
Corruption_estimate	-0.19**
	(0.07)
Constant	1.85***
	(0.30)
Observations	1152
R^2	
Adjusted R^2	

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: Testing the influence of the port on knowledge intensive activities

It is clear that impact of switching from a non-port to a port city reduces the number of high knowledge intensive activities by 29%. Most of the activities in the port are industrial therefore oriented towards the manufacturing sector which is more labour intensive and tends to attract low skilled personnel. This **affirms the second hypothesis** since cities with a port attract less knowledge intensive activities than non-port cities.

An increase in population density as discussed in section 4.1 above reduces the number of knowledge intensive activities as a result of increased and values caused by scarcity of

land. More smart people attract high knowledge intensive activities. Highly educated people have a better understanding of complex issues compared to those of low education and are able to think creatively and contribute unique ideas that are required in the sectors of Research and Design and Sales and Marketing. They are also able to understand and also develop new innovations in software development, useful for the ICT sector. High knowledge intensive activities also choose to locate in cities that are less corrupt.

4.5 Hypothesis 5: The influence of the port in attracting volume (count) and value (US Dollars) of Greenfield FDI is the same across different regions

The interest of this hypothesis is to find out how the influence of the port varies across different regions. The six regions used here are: North America, Europe, Asia and Pacific (which includes Australia), Latin America, Africa and the Middle East region. The control variables used are similar to those used to measure all the above hypotheses with port and non-port cities as dummy variables. The results are displayed in Tables 5 and 6 below

FDI_total	North America Count FDI	North America Value(US Dollars)	Europe Count FDI	Europe Value(US Dollars)	Asia and Pacific Count FDI	Asia and Pacific Value(US Dollars)
Port_non-port=0	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)
Port_non-port=1	1.49**	0.10	-0.68**	-0.97	-0.75*	0.46
	(0.57)	(1.50)	(0.22)	(0.77)	(0.33)	(1.52)
Real GDP Growth	-0.02	-0.05	0.01**	0.17***	-0.01	0.14
	(0.01)	(0.28)	(0.00)	(0.05)	(0.01)	(0.11)
Population_density	-7.40***	-0.07	-0.26	1.16	-0.03	1.69
	(0.94)	(2.35)	(0.23)	(1.01)	(0.48)	(1.70)
Employment_rate	-3.66**	18.82	0.97*	2.62	1.12*	3.42
	(1.17)	(13.83)	(0.43)	(2.39)	(0.45)	(1.98)
higher_education	6.39***	5.47	0.53*	0.33	0.03	-0.47
	(0.41)	(3.08)	(0.22)	(0.99)	(0.35)	(1.57)
Corruption_estimate	-0.20	-3.58	0.06	0.19	-0.24	-0.08
	(0.33)	(2.65)	(0.08)	(0.41)	(0.15)	(0.86)
Constant	29.26***	-101.71	-2.79	-7.72	-1.27	-11.90
	(6.73)	(68.56)	(1.90)	(9.45)	(2.65)	(7.83)
Observations	117	117	468	467	243	243
R^2						
Adjusted R^2						

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Testing the influence of the port on volume and value of investments across different regions

Switching from a non-port city to a port city in North America will significantly increase the volume (Count) FDI and switching from a non-port city to a port city in the African region will also has a positive effect although not significant. **Our fifth hypothesis is therefore rejected.**

It is evident that the North American region will benefit from establishing a port and by so doing, will also attract a higher value (US Dollars) of investments. An increase in population density will however reduce the volume of investments as well as the value. An increase in the number of inhabitants in North American cities leads to scarcity of land and consequently high land values which are not favourable for Greenfield FDI. The

shift from non-port to port city or the improvement of existing ports should involve land reclamation to drive the activities of the port deeper into the sea to create more land for investment. This is exemplified by the port of Rotterdam in the Netherlands which is expanding its second phase of the port deeper into the North Sea by land reclamation practices.

An investment in quality facilities of higher education that produce smart people is beneficial for the North American region in attracting both volume and value of FDI since smart people produce better output compared to those with lower level of education. Smart people also have the potential to be employed hence reducing the rate of unemployment which produces many social ills such as drug abuse and crime. Perfect employment however is not desirable for the volume of FDI in the city. Take an example of a city where 90% of the population is employed with an average income of $40, 000p.a. A company that establishes itself in this city should be able to provide a better income package than the existing average. This may mean spending at least $50,000 or more per employee since the employed persons are not seeking for a job but for higher income. This creates more expense for the company and hence reduces the volume of investments that would otherwise be received in the city if the situation is different.

The Real GDP growth which depicts the income of the nation is negative meaning its increase will reduce both volume and value of investments. As argued by Dunning (1995), it is quite possible for a country's citizens to be relatively better off than those of another country, yet, in terms of GNP per head, to be worse off.

In Europe, switching from a non-port city to a port city will reduce the volume of Greenfield investments. Controlling for Real GDP growth, an increase in the income levels of the population will increase the volume and value of investments in the cities located in the European region. A slight increase in the number of people in the workforce and with a higher level of education will significantly increase both the volume and value of investments.

The Asia and Pacific region has the leading port cities in the world today. Ports such as Shanghai, Singapore, Hong Kong and Ningbo are among the topmost best performing ports in the world and are all located in the Asian region however, a non-port city that seeks to shift to a port city will reduce the volume of FDI. A slight increase in the proportion of employed persons however, will increase the volume of FDI in the non-port cities. The existing port cities in this region attract a high value of investments

	Latin America Count FDI	Latin America Value(US Dollars	Africa Count FDI	Africa Value(US Dollars)	Middle East Count FDI	Middle East Value(US Dollars)
Port_non-port=0	0.00	0.00	0.00	0.00	0.00	0.00
	(.)	(.)	(.)	(.)	(.)	(.)
Port_non-port=1	-0.07	-0.39	0.32	-1.98	-0.31	1.23
	(0.52)	(0.76)	(0.66)	(1.04)	(0.70)	(4.74)
Real GDP Growth	-0.03*	-0.08	-0.01	-0.15	-0.01	12.89
	(0.01)	(0.12)	(0.02)	(0.03)	(0.01)	(105.36)

Population_density	-0.54	2.36**	-4.01**	-8.69	0.09	6.28*
	(0.45)	(0.78)	(1.40)	(6.74)	(1.27)	(3.12)
Employment_rate	6.02***	0.66	3.00*	13.46	1.92	3.61
	(1.16)	(3.88)	(1.22)	(9.76)	(1.07)	(6.25)
Higher_education	1.26**	1.03	3.48**	7.82	0.42	-2.20
	(0.45)	(0.91)	(1.06)	(5.14)	(1.29)	(2.52)
Corruption_estimate	0.55	0.89*	-0.83*	-6.07	0.12	2.68*
	(0.32)	(0.38)	(0.41)	(3.79)	(0.24)	(1.08)
Constant	-26.75***	-15.29	-1.80	-23.92	-8.04	-34.31
	(4.74)	(17.13)	(6.57)	(29.56)	(5.01)	(27.76)
Observations	144	134	72	64	81	80
R^2						
Adjusted R^2						

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Testing the influence of the port on volume and value of investments across different regions

In the Latin American region, a shift from a non-port to a port city will reduce both volume and value of Greenfield investments. An increase in population will reduce the volume of Greenfield FDI but will attract a high value of investments. This inverse relationship can be explained by taking an example of a Headquarter Company like Samsung Mobile. This is just one investment but the value is much higher than three investments in a primary sector such as recycling.

A shift from a non-port city to a port city in Africa will attract more volume of FDI though not as significant as the North American region perhaps due to the relatively low potential of establishing the port infrastructure which is highly capital intensive. While controlling for population, an increase in the population density reduces the volume of investments however a rise in the employment rate and an increase in the number of highly educated people will significantly create an attractive environment for the volume of FDI. Most of the cities on the African region rank among the most corrupt cities according to the World Justice Project Report (2012) and Transparency International statistics. More transparency and accountability of governments in Africa will significantly increase the volume of FDI.

The cities in the Middle East region would not benefit switching from a non-port city to a port city however, the existing port cities attract a high value of investments. A slight increase in the population of the cities in this region will increase the value of investments.

North America- All Cities

Most of the investments in North America as shown in Figure 13 below are received in the Eastern part of North America as shown indicated by the magnitude of the lines. These cities are New York, Boston and Washington DC. The western part which in this case is Los Angeles also receives a high value of investments indicated by the intensity of the lines. The legend on the right shows the top five cities with highest order ranking of the cities with most investments

Figure 14: Inward investments in sampled cities in the North American Region

North America-Port Cities

The map below shows the investments received in the port cities of North America over the period of nine years, from 2005 to 2013. As shown, New York, Boston and Los Angeles receive the most volume of investments with high value as indicated by the magnitude and thickness of the lines respectively. The non-port cities in the region however as shown in Figure 15 receive fewer investments compared to the port cities.

Figure 15: Inward investments in sampled non-port cities in North America

North America- Non-Port Cities

The non-port cities in North America below receive fewer investmenst and of lesser value than the port cities as indicated by the magnitude and thickness of the lines respectively. Investing in institutions of higher education to increase the number of smart people will significantly increase the volume of investments and have a positive effect on the value of investments

Figure 16: Investments in sampled port cities in North America

Europe- All cities

The sampled cities in the European region, receive numerous volume and value of investments. The intensity of the investments is mostly seen in Western European cities particularly London and Paris as indicated by the frequency and intensity of the lines in the network. The legend shows a ranking of the top cities in volume of FDI.

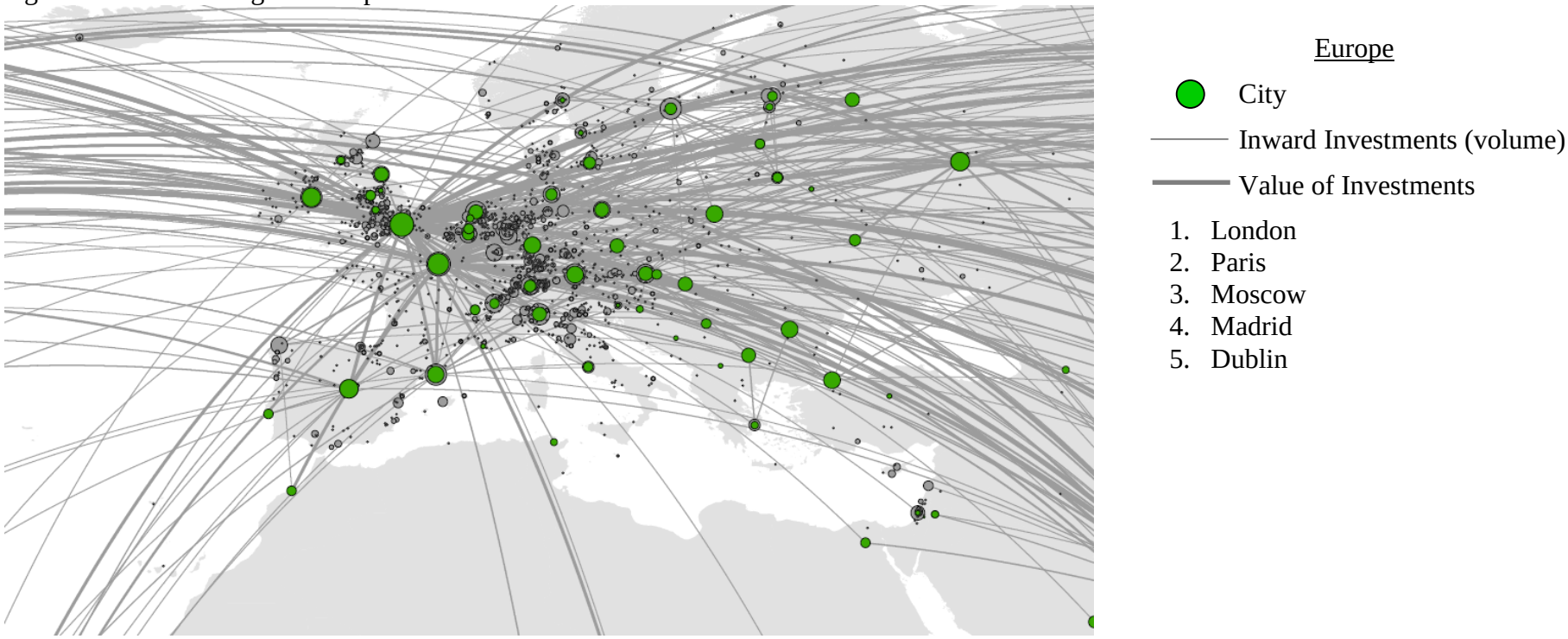


Figure 17: Inward investments in sampled cities in the Europe

Europe- Non-Port Cities

The sampled non-port cities especially London and Paris receive numerous volumes and value of investments. London receives the most number of investments in all the one hundred and twenty eight sampled cities in this study. Since the non-port cities would be unatrractive to the volume and value of investments if they attempt to become port cities, an increase in the incomef the population, represente by growth in the Real GDP willsignificantly increase intensity of the network below. A slightly higher proportion of smart people and creation of jobs will also increase the volume and value of investments.

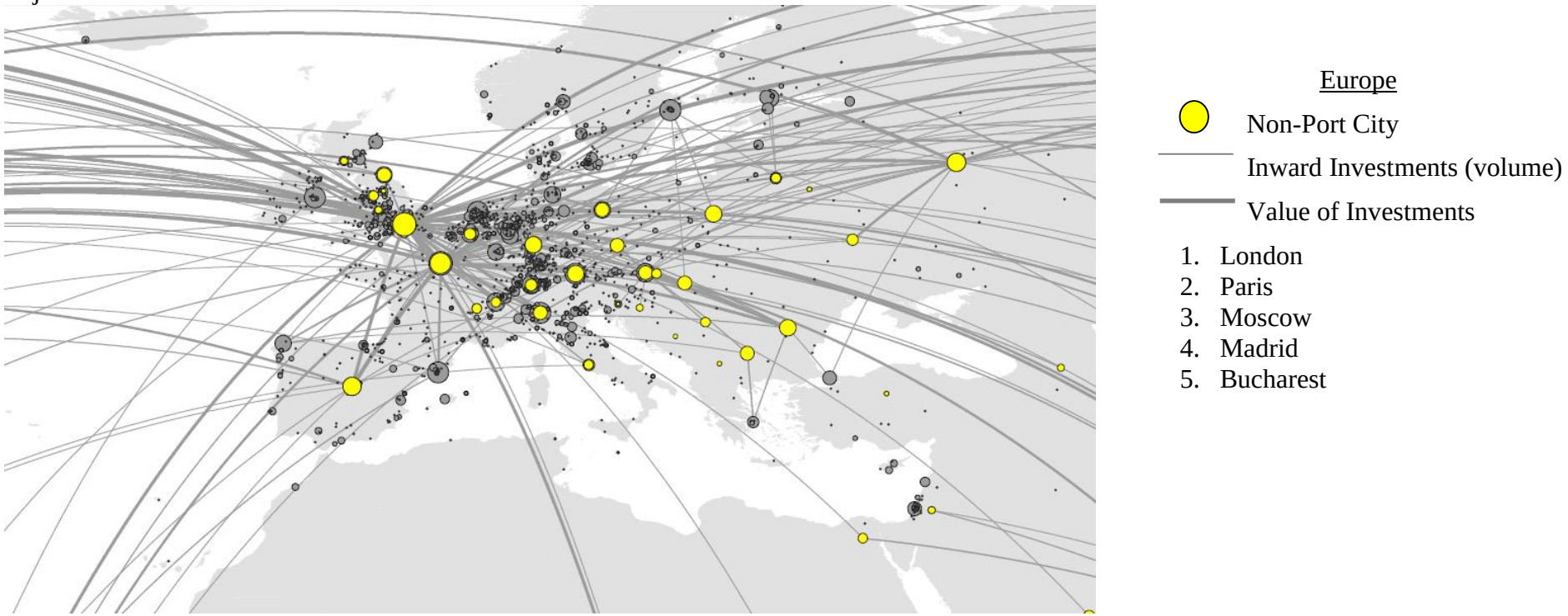


Figure 18: Inward investments in sampled non-port cities in Europe

Europe-Port Cities

The sample port cities in the European region shown in Figure 18 below receive a lot of investments but compared to the non-port cities, the intensity of the connections is much thinner meaning the investments received of lower value compared to the non-port cities. The results in Table 5 show that a switch from a non-port city to a port city would reduce the volume of investments however, the port cities have the potential of attracting more FDI by concentrating on non-port functions such as investments in institutions of higher education increase the number of highly educated people.

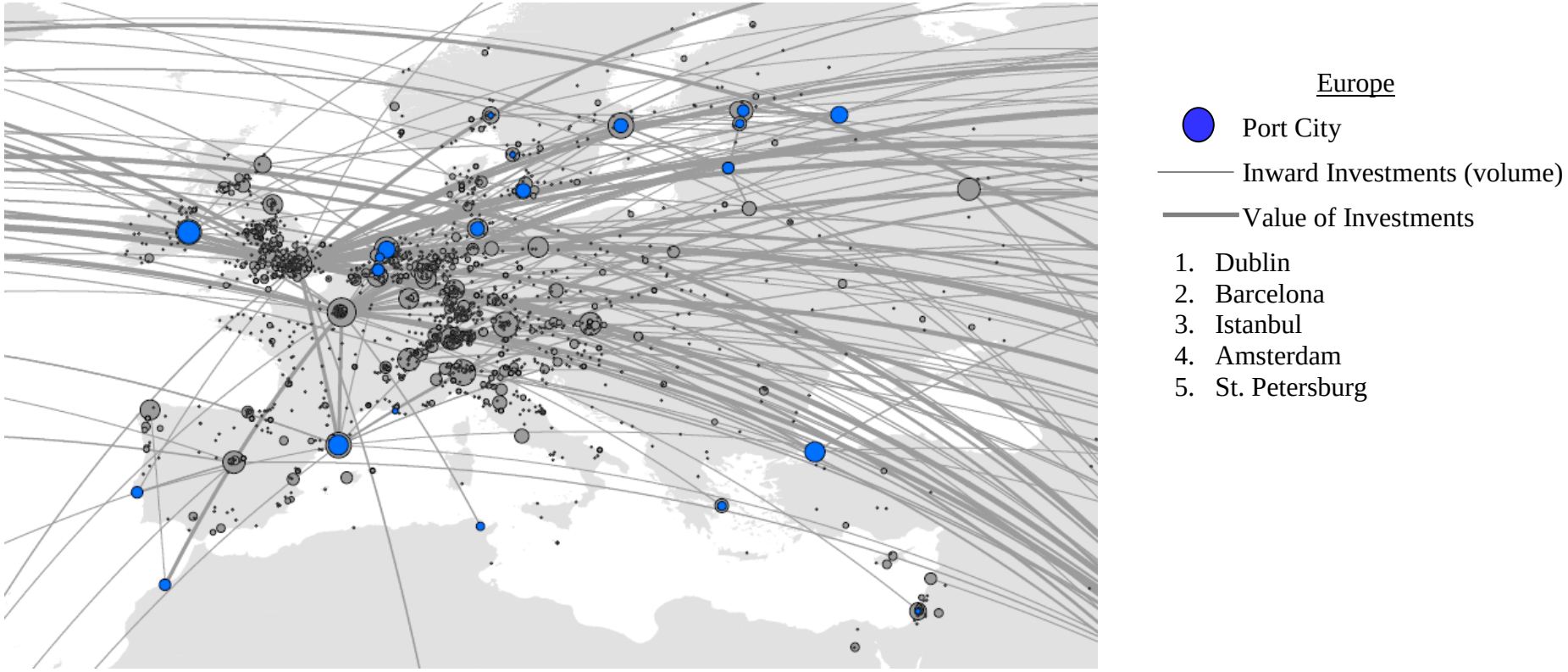


Figure 19: Inward investments in sampled non-port cities in Europe

Asia and Pacific- All cities

The Asia and Pacific region has the highest ranking busiest port cities in the world. Though the investments received in the sampled port and non-port cities, are few as shown in the network in Figure 19 below, the intensity of the lines shows high value of investments received in the cities. Singapore and Shanghai rank the second and third after London in volume of investments in all the 128 sampled cities in this study. The legend on the right shows a ranking of the top five cities in this region with highest volume of investments

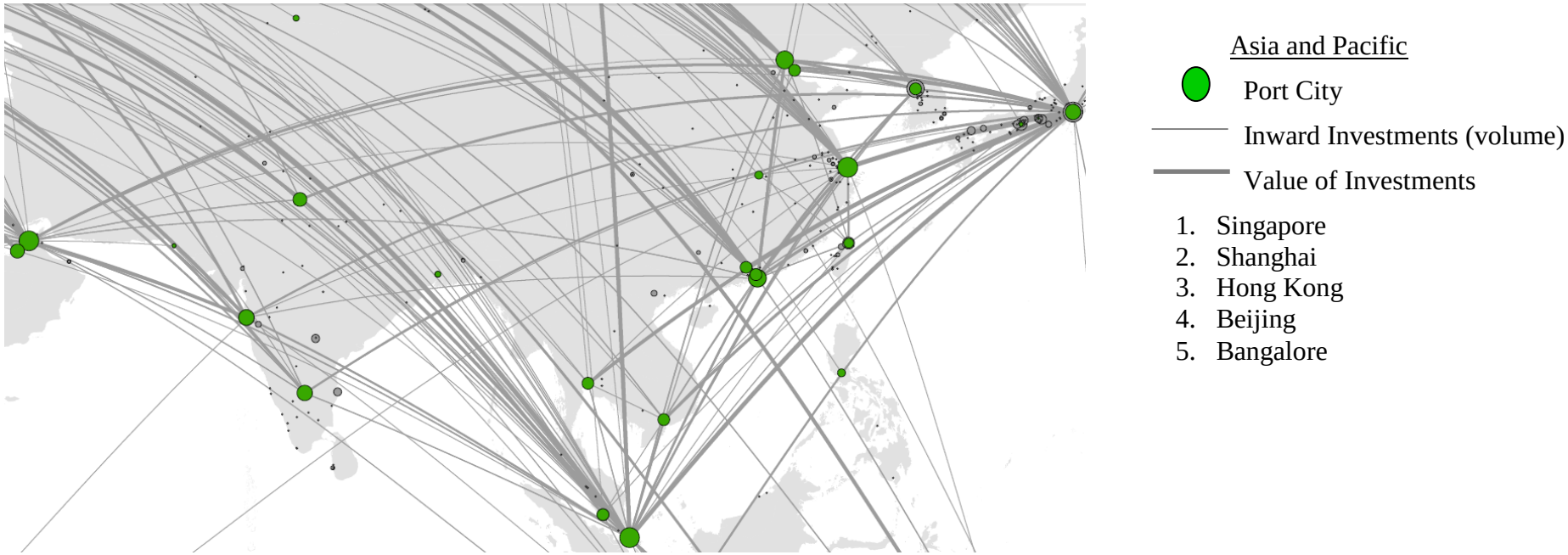


Figure 20: Inward investments in sampled cities in Asia and Pacific region

Asia and Pacific- Non-Port Cities

A shift from non-port to port city in the Asia and Pacific region significantly reduces the volume of investments in this region. Looking at the intensity of the lines, the value of investments received is considerably lower than that of the port cities in Figure 21. An increase of the proportion of the population in employment will create a potential pool of volume (count) FDI into the cities. The legend shows the ranking of the top non-port cities in volume of investments.

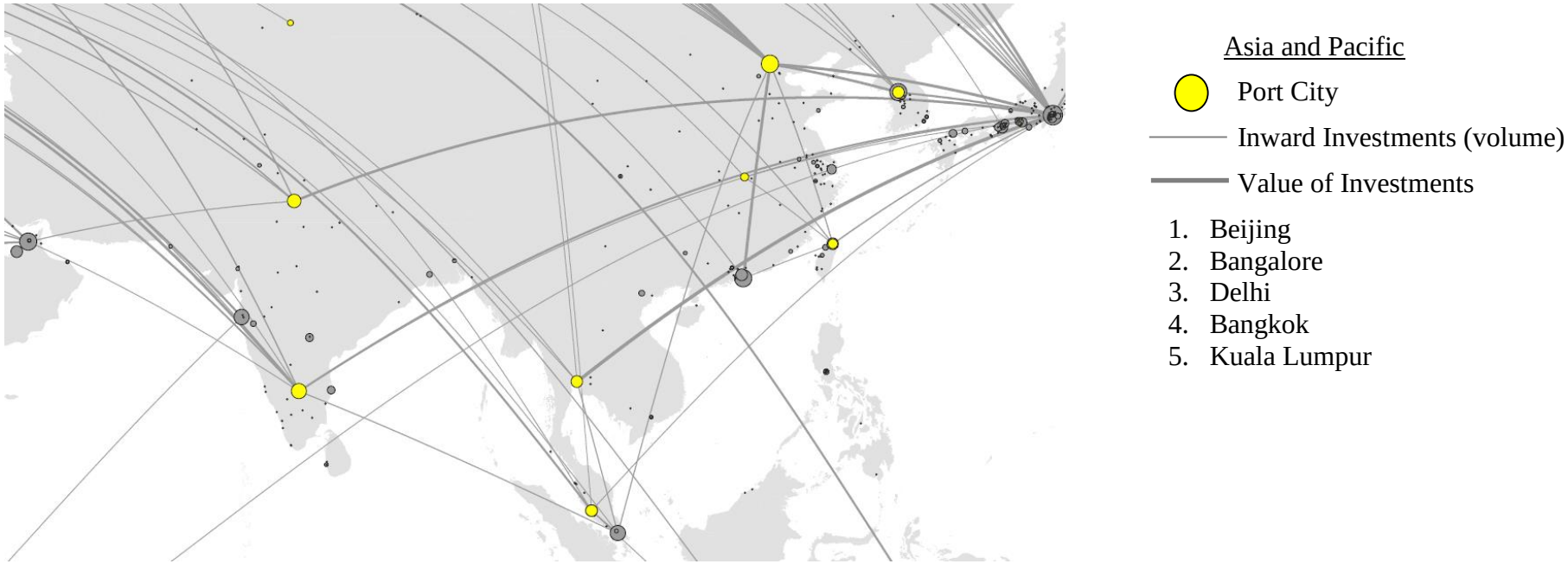


Figure 21: Investments in sampled non-port cities in Asia and Pacific region

Asia and Pacific- Port Cities

The port cities in the Asia and Pacific region as in Figure 21 below receive the most volume and value of FDI compared to port cities in all the other five regions. The volume of the investments is high as indicated by the intensity of the lines. The port cities have the highest rank of port performance with relatively larger throughput. In fact, the throughput is very large that the number of TEUs received in the European ports from China every year, if arranged in a line, would circle the earth more than three times. The performance of the port is contributes tremendously to the economy of the sampled cities in this region

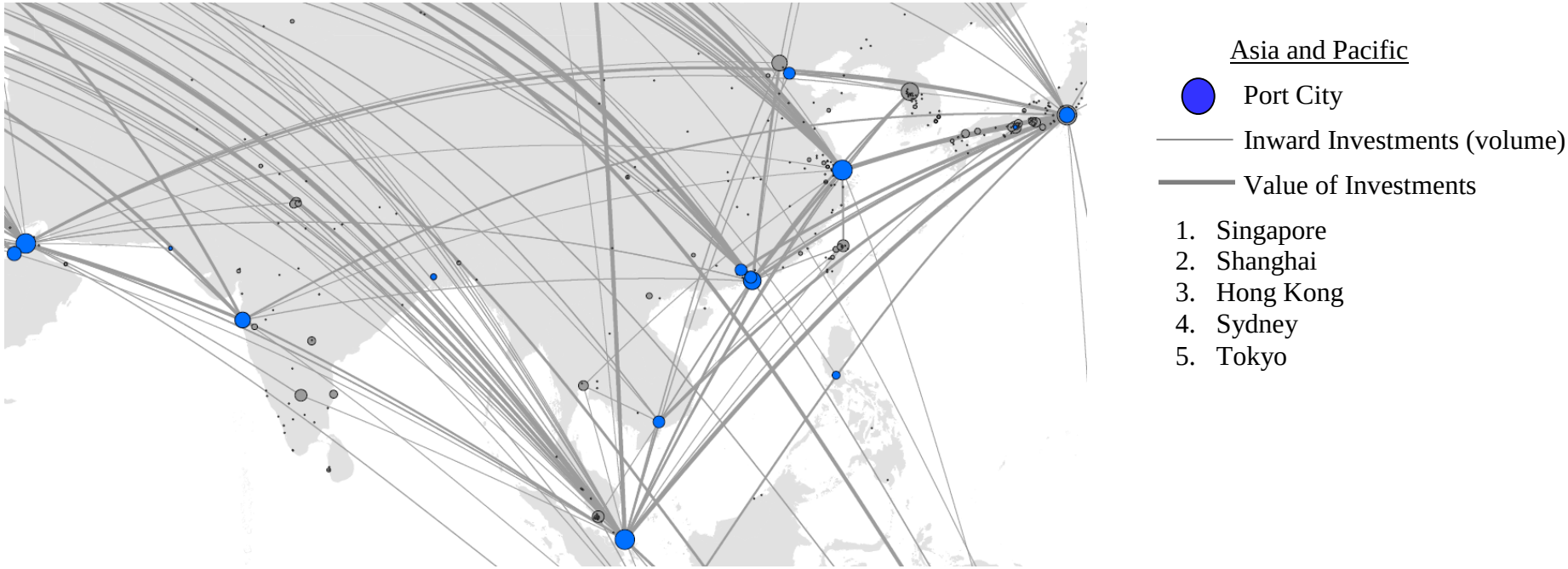


Figure 22: Inward investments in sampled port cities in Asia and Pacific region

Chapter 5: Conclusions and recommendations

5.1 Conclusions

In most regions of the world today, a non-port city that seeks to switch to a port city, perhaps to take advantage of endowment factors is likely to reduce the number of investments received in the city and resultantly, become less competitive. Most of the port cities in the world today have only concentrated on improving their port functions and neglected other factors can influence the competitiveness of the city. Ports have been known as industrious places and very labour intensive only attracting manufacturing companies due to economies of scale in cheap transport of raw materials. The tides have shifted and having a port no longer creates an advantage in attracting FDI over a city without a port. The example given earlier in this research of a manufactured shoe from china transported in a container to Europe shows that countries prefer to export finished products. This attracts only specific sectors into ports such as warehousing, transportation and logistics which are of lower value compared to investment activities such as Headquarters, R&D etc. Port cities therefore have to look into other sectors that can make them competitive. Kaplinsky and Paulino (2005) argue that innovative activity is reflected by the use of R&D expenditure and percentage of skills of different sorts in the labour force. Ports are associated with low skilled labour due to the high industrial activity but having a higher percentage of skilled personnel will contribute to the competitiveness of the cities. A larger proportion of the population with higher education will be attract more investors especially in the high knowledge intensive sectors and as a result make the cities more competitive.

Echoing the conclusions made earlier in this chapter, '*a non-port city that seeks to switch to a port city, perhaps to take advantage of endowment factors is likely to reduce the number of investments received in the city and resultantly, become less competitive*'. This is not so for a non-port city that is located in the North American region. The effect of a port is in fact significant and highly beneficial for attracting a higher volume of investments compared to a city without a port. The North America region has the largest consumer market in the world than any other region. Famous cities such as New York, Los Angeles, Chicago, Boston, Washington DC and Miami most of which are port cities, have a large share of the population with a high purchasing power. Los Angeles and San Fransisco in Carlifornia, for example are location to 102 Fortune 500 companies New York-New Jersey has over ten percent of the Fortune 1000 companies headquarters. The cluster of this companies as argued by Porter and Ketels (2003) increases the capacity for innovation and productivity growth making these cities very competitive places. They have the potential of becoming even more competitive by improving their port functions. It is imperative for the port cities to improve the status of their ports if they wish to become more competitive and attract more volume of investments. The government of USA can even get into research to identify potential cities that can have a port. Looking at Maine for example, none of the Fortune 1000 company headquarters is located in this state yet it borders the North Atlantic Ocean and could be a potential port area. Port regionalization, which is the sixth phase of Notteboom and Rodriguez (2005) model on port development can be a factor for the port cities in the North American region to explore in order to expand the capacity of the ports.

The presence of numerous headquarter companies in North America creates a lot of employment opportunities for the inhabitants of the cities. The unemployment rate is 5.3% meaning that only less than 6% of the population are actively looking for a job. This indicates a high purchasing power and consumer demand that is attractive to investors, however, a move

towards perfect employment will deter the number of investments received in this region. Taking for example that an average employee earns $40000p.a. A Greenfield investment that seeks to set up an office in such an environment has to provide a package that is at least more than $50, 000 for the least paid worker. Now assume that the company needs to hire 100 employees; the remuneration expense is at least $5,000,000 every year excluding other costs that the company has to incur. This is costly for an average company that is seeking to diversify in this region and would therefore prefer a different location. Does this mean that North America should increase unemployment rate? Certainly not. It would benefit the region to reduce the wealth disparity gap whereby the current state is that the upper income family wealth is 70 times larger than the lower income family wealth.

Additionally, cities in North America, especially those that have fewer number of investments have the potential to increase both the volume and value of investments by having a larger pool of smart people in the city. The governments can invest in institutions of higher education to produce a cadre of creative people who will be attractive to investors especially in high knowledge intensive activities.

The port cities in Africa have a lot of potential in attracting increased volume of FDI. The port of Mombasa in Kenya, for example is East Africa's gateway and serves the landlocked regions of Uganda, Rwanda, Burundi, Ethiopia and South Sudan. This port however lacks the infrastructure that would make it attractive for shipping lines. Douala, which was sampled in this research has only received two investments over a period of nine years yet is strategically placed, just like Mombasa to serve other regions within its vicinity. It would be beneficial for non-port city in the African region to switch to a port city to attract a large volume of investments and become competitive than its peers.

5.2 Recommendations

It is imperative for port cities to improve their location factors and allow a more diversified palette of sectors and activities in order to become more attractive to investors. Investing in institutions of higher education as well as scientific institutions to produce smart, creative and innovative people will open up the cities to other investments that are not necessarily linked to the port. The reverse may be true for the port cities in the North American region which should improve their port functions to attract more investments related to the ports.

Cities should also control their population if they desire to attract more volume and value of investments. While an increase in the population is beneficial for cheap labour as is the case of China, Greenfield FDI, characterised by establishing a company from the ground up through purchase of real estate may require a large piece of land depending on the size of the company. Headquarters or investments in chemicals and oil and gas require large tracts of land to establish their companies but an increase in population most likely results in land pressure and escalating of already high prices in the heart of the city where these companies prefer to locate.

Finally, further research can be done on the performance of the ports across different regions to measure the effect of good performing ports on the volume and value of investments.

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Annexes

Annex 1

Port Cities		Non-Port Cities	
Abu Dhabi	Los Angeles	Almaty	Nairobi
Amsterdam	Manama	Amman	Novosibirsk
Antwerp	Manila	Ankara	Paris
Athens	Marseille	Bangalore	Phoenix
Auckland	Melbourne	Beijing	Prague
Baku	Miami	Belgrade	Quito
Barcelona	Montevideo	Berlin	Geneva
Boston	Montreal	Birmingham	Glasgow
Buenos Aires	Mumbai	Bogota	Riyadh
Cape Town	New York	Bratislava	Rome
Casablanca	Osaka	Brussels	San Jose
Copenhagen	Oslo	Bucharest	Santa Cruz
Doha	Philadelphia	Budapest	Santiago
Douala	Riga	Cairo	São Paulo
Dubai	Rio de Janeiro	Caracas	Sarajevo
Dublin	Rotterdam	Chicago	Seoul
Gothenburg	Salvador	Delhi	Skopje
Guangzhou	San Francisco	Frankfurt am Main	Sofia
Guayaquil	Santo Domingo	Guatemala City	Taipei
Hamburg	Shanghai	Jerusalem	Tbilisi
Helsinki	Shenzhen	Johannesburg	Tehran
Ho Chi Minh City	Singapore	Kuala Lumpur	Toronto
Hong Kong	St. Petersburg	Leeds	Vienna
Houston	Stockholm	Ljubljana	Vilnius

Istanbul	Sydney	London	Warsaw
Jakarta	Tallinn	Lyon	Washington Wuhan
Karachi	Tel Aviv	Madrid	Zagreb
Kolkata	Tianjin	Manchester	Zurich
Kuwait	Tokyo	Mexico City	Bangkok
Lagos	Tunis	Milan	Geneva
Lima	Vancouver	Minsk	Glasgow
Lisbon		Moscow	
		Munich	
		Nagoya	

Annex 2

Variable		**Indicator**	**Source of Data**
Dependent	**FDI**	Volume of inward investments and value in US dollars	FDI Markets
Control	GDP	Real GDP Growth	EuroMonitor Passport Data
Independent	Human Capital	Population with Higher Education	EuroMonitor Passport Data
	Connectivity	International airport	EuroMonitor Passport Data
	Demography	Population Density	EuroMonitor Passport Data
	Governance	Corruption	World Justice Project
	Port Performance	Throughput Logistics Performance Index Liner Shipping Connectivity	World Bank