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MMFI Research Report- A Comparative Analysis of the Extent of Investment Banking In Africa versus Other Emerging Markets

Submitted in partial fulfilment of Masters of Management in Finance and Investments

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ABSTRACT

This comparative study examines and explains investment banking levels in African emerging markets to the Asia Pacific counterparts. It examines how investment banking activities, especially the raising of capital, influence financial development. There is a paucity of studies conducted in these emerging markets to identify and contrast why their financial development levels are significantly different. African emerging markets appear to be lagging while the Asia Pacific emerging market economies are among the fastest-growing in the world. Finance theory underpins the framing of the study that demonstrates plausible relationship between financial development and economic growth.

The methodological procedures followed a quantitative deductive approach through desktop and secondary data analysis to draw conclusions and make inferences. A multiple regression model was used to quantify the effects and extent to which investment banking contributes to financial development. GDP per capita and human development level relate positively to African countries' financial development level. The literature review also revealed some interesting and relevant facts about African economies and the challenges they face. Despite some marked growth in some African economies vis-a-vis others, important structural adjustments appear necessary prerequisites for enhancing Africa's financial and economic development more sustainably. Surprisingly, the empirical analysis identified no evidence of statistically significant relationship between the measure of level of investment banking (in this study) and financial development.

Keywords: Investment Banking; Emerging Markets; Financial Development; Finance Theory.

DECLARATION

I, Solomon Mphakathi, declare that this thesis report is my work, except as specified in the references and acknowledgments. This submission is in partial completion of the requirements for the degree of Master of Management in Finance and Investment at the University of the Witwatersrand, Johannesburg. It has not been previously submitted for any degree or examination in this or to any other university.

Solomon Mphakathi

Signed at ……

On the ……... day of …… 2020

DEDICATION (OPTIONAL)

I dedicate this dissertation to my wife Nezisa and sons Sithi and Lelo. Without you, I would not have had the strength, necessary energy, and drive to complete this work.

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CHAPTER 1: Introductory Chapter

1. Introduction

This study examines and explains investment banking levels in African emerging markets compared to Asia Pacific emerging markets. Furthermore, it examines how investment banking activities, especially the raising of capital, influence financial development. A paucity of studies has been conducted in these emerging markets to identify and contrast why their financial development levels are significantly different. African emerging markets appear to be lagging, while the Asia Pacific emerging market economies are among the world's fastest-growing economies.

The investment banking levels consider the availability of investment banking, financial development, and firms' problems in accessing external finance or capital**.** This research work is structured as follows to give context to the study: Firstly, the literature review on a broad overview of investment banking and related services. Secondly, a closer look and synthesis of critical investment banks in African emerging markets and some of the emerging comparative market is provided. Furthermore, the study also covers the role of investment banking in financial development. A model on investment banking's financial development role with key variables carefully selected based on their relevance and robustness to the study is proposed.

Emerging markets are growing or transitioning from developing countries to developed countries (Stowell, 2013). Countries such as India, Mexico, China, with most of South East Asia, countries in Eastern Europe, and the Middle East are known to fall within emerging markets using the MSCI Barra's Emerging Market Index (Stowell, 2013). Operational investment banking activities in the emerging market countries is seen as both a significant revenue opportunity and a big risk. Stowell (2013) argues that investment banks that have prioritised and focused on these regions have earned benefits and are thriving. These investment banks including but not limited to; Citi Group, Goldman Sachs, J.P. Morgan, UBS, and Morgan Stanley. Their product/service range varied from securities underwriting, syndicated lending, mergers and acquisitions, and several other trading

and investing activities. Table 1 presents countries listed in the MSCI Barra's Emerging Market Index.

***Table 1**: MSCI Barra's Emerging Market Index*

The Morgan Stanley Capital Markets International (MSCI) Barra's Emerging Market Index is designed to measure equity market performance in Global Emerging Markets. This index is a float-adjusted market capitalisation index. As of July 2011, it consisted of the indices from 21 emerging economies; namely:

Brazil	Hungary	Morocco	Taiwan
Chile	India	Peru	Thailand
China	Indonesia	Philippines	Turkey
Colombia	Korea	Poland	
Czech Republic	Malaysia	Russia	
Egypt	Mexico	South Africa	

Source. MSCI (2011)

There is no universally agreed definition of investment banking. As such, this study has looked at several definitions from different authors, as presented below.

- Iannotta (2010) defines investment banking as whatever banking that is not commercial banking. He argues for including the services provided by investment bankers, which comprise of a heterogeneous set of activities, which can be classified into (a) underwriting and advisory services, (b) trading and brokerage, and (c) asset management, both traditional and alternative portfolios.

- Fleuriet (2008) defines investment banking as purchasing securities from issuers and reselling to the public. He notes that major groups in investment banking include companies involved in the underwriting, purchasing, selling, or brokerage of securities and other financial contracts in their account or for the account of others. Some of an investment bank's core functions include raising capital, trading securities, and advising on corporate mergers and acquisitions. He summarises as: "The scope of investment banking includes all major capital market activities

such as underwriting, private placement, M&A, venture capital, market making, proprietary trading, financial engineering, clearing and settlement, and financing and money management." Investment banks' role is crucial in providing finance for growth and development globally, particularly in the emerging markets and small and medium enterprises.

These definitions provide a framework through with this study conceptualises investment banking to mean.

World Bank's Enterprises Survey (2014) surveyed enterprises that aimed to develop a new measure of firms' credit-constrained status, using hard data instead of perceptions data. Veselin Kuntchev (2014) argues that the findings from that analysis were that small and medium enterprises are likely to be more credit constrained than large firms. Furthermore, those small and medium enterprises tend to finance working capital and investment using trade credit and other informal finance sources, more often than large firms. This phenomenon is the case in most of the developing countries across the world. The observation made is that companies are less likely to be credit constrained in countries with high credit to gross domestic product. In the developing world, access to credit is inversely related to company size or magnitude, and a positive relationship with productivity and financial deepening. These are important observations as they reaffirm the need for investment banks and their growth and development role.

1.1. Analysis and Motivation

This sub-section presents investment banking analysis in African emerging market economies compared to Asian emerging market economies. Asian emerging market economies are among the fastest-growing in the world. Unfortunately, the same cannot be said about the African emerging market economies. In table 3 of Chapter Two, where a comparison of financial development by region is shown, a clear contrast is noted. Asian emerging markets have been averaging just over 50 on Liquid Liabilities to GDP while African emerging markets were far below just at over 20 regarding their financial development. Based on private credit extended by deposit money banks to GDP, Asian emerging markets were higher, averaging over 40 percent, while African emerging markets lag, averaging less than 20 percent. Six countries were selected from Africa and Asia as part of this study. Countries like the United States of America and those in the Asian emerging

markets are raising billions of capital from the equity market through Initial Public Offerings (IPOs). According to the capital market watch report, China raised capital through IPOs over 60 billion US dollars between 2015 and 2016.

In comparison, Malaysia raised over 3 billion US dollars through IPOs. In the African countries, Nigeria could only raise 400 million US dollars from 2010 to 2019, while Ghana could only raise 349 million US dollars from IPOs for the same period. South Africa raised 8.4 billion US dollars from IPOs for the period from 2010 to 2019. As can be seen from the numbers above, the availability of capital for African emerging economies is quite limited.

The discussion is important because part of investment banking's key activities is to raise capital from the equity market through Initial Public Offerings. The disparities in these emerging market economies can be ascribed to our investment banking capacity, among other things. This phenomenon is depicted in figures 4 to 7 of Chapter 2. African emerging markets are far from raising this type of capital. This disparity is directly attributable to either the size of these markets' investment banks or lack of adequate investment banking within these markets. The noted disparities between these countries regarding their ability to raise capital and economic growth levels make this research worthwhile and an important gap for further investigation by researchers and academia. The selected countries are South Africa, Nigeria, Ghana, China, Malaysia, and South Korea. However, because of the data limitations on investment banking specific data, six top banks from each of the countries selected were identified. Many banks have corporate and investment banking as a division within the bank, especially in South Africa, termed a universal banking model.

The banks' information was sourced from different stock exchanges and other relevant websites (such as google scholar, JSTOR, Booksc.org, World Bank, to mention a few). The banks' information denominated in its country currency was converted into US Dollars ($), using the average spot rate at the reported data date. Table 2 presents the specific countries banking situations concerning capitalisation

Table 2: Market Capitalisation outlook in both African Emerging Markets and Asian Emerging Markets

Africa	**Total Assets (USD Billion) 06/2017**	**Market Capitalisation (USD Billion)**	**Country GDP (USD Billion)**	**Total Assets to GDP**	**Market Cap to GDP**
South Africa	507.7529	70.9602	348872	0.1455%	0.0203%
Nigeria	71.2717	2.5351	375770	0.0190%	0.0007%
Ghana	6.8709	0.8200	58996	0.0116%	0.0014%
Total	585.8955	74.3153	783,638	0.0748%	0.0095%
Asia	**Total Assets (USD Billion) 06/2017**	**Market Capitalisation (USD Billion)**	**Country GDP (USD Billion)**	**Total Assets to GDP**	**Market Cap to GDP**
China	16,263.9700	1,054.4040	12,237,782	0.1329%	0.0086%
Malaysia	453.2886	79.6000	314,500	0.1441%	0.0000%
South Korea	1.8685	63.1000	1,530,751	0.0242%	0.0041%
Total	16,719.1270	1,197.1040	14,083,033	0.1187%	0.0085%

Source: Created from various sources

Table 2 shows that banks in Africa have lower total assets to GDP at 0.0748% than their counterparts in Asia, sitting at 0.1187%. However, banks from Asia have a lower market capitalisation to GDP at 0.0085% compared to Africa's banks at 0.0095%. This comparison is an attempt to analyse and quantify the extent of banking in these economies. This analysis can then be extrapolated about the extent of investment banking activities in these economies. The difficulty in obtaining investment banking specific information necessitates conducting such an analysis and concluding. South African banks reflected high percentages of total assets to GDP and market capitalisation to GDP compared to other African banks. While in Asia, it was Chinese banks that reflected such strength.

1.2. Background Literature

In conducting this study, several research papers written on the related topic are reviewed and considered. Jill (1980) discusses the role investment banks can play in developing emerging domestic financial markets to mobilise funds and provide innovative financial assistance and service. In his concluding remarks in the article, he notes that development banks play an important

part and potentially significant role in promoting financing in those countries where investment banking does not exist or where existing securities markets are weak.

Dimitris (2019) makes important observations about the emergence and the future of emerging market economies. He argues that the evolution of emerging markets as a distinct economic development segment can be traced to the establishment of the MSCI Emerging Market Index in 1987. This index started with ten countries making up 1% of the global equity market, as shown in the All Country World Index (ACWI). These markets have seen significant growth and transformation to the extent that the countries in the index have grown to 24, accounting for 12% of the MSCI ACWI.

Dimitris (2019) further argues that emerging markets are likely to shape the global equity market's future in the next decades. These include economic growth and fiscal discipline, ongoing capital market liberalisation, the adoption of free-market policies, the emergence of world-class companies, the transition from natural resources extraction, manufacturing, and exporting to higher added-value economic activity and domestic consumption. He notes that emerging markets represent 12% of the global equity market free-float and that this will be increasing to about 20% by total market capitalisation and 40% of global economic activity (GDP) and share of company revenues.

Another important piece of work is by Goodhart (2016), who seeks to make a case about the increase of US investment banks' market share in the aftermath of the global crises while European banks look to be on the decline. He also argues for China, noting that since 2015, Chinese investment banks have overtaken American and European investment banks' position in the Asian-Pacific market.

Norden (2015), in his inaugural address series -- Research in Management --, made important points about the role of banks in SME finance. He contends that Banks play a pivotal role in finance provision to small and medium-size firms (SMEs). These usually form a considerable part of world economies and contribute quite significantly to employment numbers. Secondly, these firms tend

to be more dependent on bank finance than large firms. SMEs are usually credit constrained and bank dependent, according to Norden (2015).

1.3. Problem Statement

Investment banking does not appear to be playing a prominent role as it ought to in the financial development of African emerging economies, compared to other emerging economies such as the Asia Pacific emerging economies. In the Asia-Pacific emerging market economies, the situation is different. The economies in that region are growing faster than the African emerging market economies. This development can be directly or indirectly linked to investment banking's prominent role in raising capital, primarily through Initial Public Offerings (IPOs). In the development and growth of economies, investment banking plays a critical role, via IPOs and other services relating to the provisioning access to capital for new business creation and/or expansion. The comparison between African emerging markets and Asian Pacific emerging markets covers banks' characteristics in these regions, such as size, regulations, and general macroeconomic performance using indicators such interest rates, gross domestic product (GDP), and inflation rates. This study identifies the key financial ratios in these banks and relate them to some of the selected variables mentioned above to draw a few relevant inferences about investment banking and financial development.

1.4. Research Questions

Therefore, this study's main aim is to conduct comparative analysis research on the availability of investment banks and banking in Africa versus select emerging markets in Asia. The study also examined the question of the lack of investment banks and banking in these regions on firms' access to capital. The specific research questions that embody the twin aim of the study are as follows:

- What impediments to investment banks in African emerging economies inhibit them from playing the role they should be playing in financial development?
- Are there any differences in the regulatory framework of these two emerging markets which could be contributing to the differences in the levels of financial development?
- What are the investment banks of emerging markets in Asia doing that will be a lesson for those in Africa emerging market as they grow their investment banking capabilities?

1.5. Overview of Research Methodology

The study uses regression analysis – ordinary least square (OLS), using a model borrowed from Allen et al. (2014). Another key research methodology followed is secondary data (i.e., desktop literature review) analysis. The literature identified includes, but not limited to, research papers by Berth Caprio et al. (2001), Cetorelli and Gambera (2001), Beck et al. (2001), and Clarke et al. (2001). In addition to the above, several books about investment banking will be reviewed. These books include, for example, Iannotta (2010) *and* Fleuriet (2008).

Data Collection

Data are collected from various sources for the financial econometric model for analysis. Data related to credit to the private sector as a percentage of GDP, Human Development Index, GDP per capita for all countries were sourced from the World Development Index of the world bank. IPO data for South Africa were obtained from the JSE. IPO data for the Asia-Pacific countries were obtained from the World Federation of Exchanges website. IPO data for Ghana and Nigeria were obtained from the Capital Market Watch report 2019-PWC. I performed my calculations of IPOs as a percentage of GDP. The data were prepared for analysis on Gretl. The econometric model was used to produce the results. The results are presented in Chapter 4 of this report.

Hypothesis

The hypotheses tested in the study, based on the borrowed/modified Allen et al. (2014) model, are are as listed below:

Hypothesis 1. There is a positive relationship between the level of financial development and the level of investment banking.

Hypothesis 2. There is a positive relationship between financial development and the combined effects of investment banking and education level in a country.

1.6. The Model

Brooks (2014) defines regression in general terms as describing and evaluating the *relationship between a given variable and one or more other variables*. Therefore, the regression model's purpose in this study was to evaluate the relationship between financial development and

investment banking, education, economic development, and openness. This model is similar to Allen *et al*. (2014). The study does not seek to establish a causal relationship but uses these as explanatory variables as determinants of financial development (Allen *et al*., 2014).

The model is stated as follows:

$$\boldsymbol{Financial\ Development} = F(Extent\ of\ investment\ banking, Openness, Econ\ Dev, Education)$$

$$Yit = \propto + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \varepsilon it$$

Thus,

-
- Y_i - represents the measure of the level of financial development,
- X_1 - represents the extent of investment banking,
- X_2 represents openness,
- X_3 represents the level of economic development, and
- X_4 represents the level of education, εi, is the error term, and t indexes time.

1.7. Potential Outcomes and Benefits

This work will assist policymakers with information to use in setting a possible new policy direction that could impact the economic development and growth of their countries. Non-financial firms and investment banks alike are likely to benefit from this research's outcomes by understanding the regulatory environment and challenges related to access to capital. Regulators will also benefit from identifying different regions' regulations to enhance their countries' banking systems' stability and sustainability.

1.8. Outline of the Research Report

The presentation of the research report is in five chapters. These being:

- **Chapter 1** introduces the study and provides context, overview, and the purpose of the study.
- **Chapter 2** discusses available to uncover the relevant works relating to investment banking and financial development of the macroeconomic environment,

- **Chapter 3** outlines the research methodology and the theoretical underpinning of the study utilised to analyse data and outlines the data used.
- **Chapter 4** discusses the findings of this study emanating from the research methodology followed.
- **Chapter 5** presents the concluding remarks and puts forward based on documented findings and insights from the literature review.

CHAPTER 2: Literature Review on Relationship between Investment Banking and Financial Development

2. The literature review

2.1. Introduction

Based on the search conducted from various sources such as google scholar, finance journals, and other research websites, literature covering investment banking in African emerging markets and its relationship to financial development is very limited compared to the Asia Pacific emerging markets and European markets. Allen *et al.* (2014) investigated the African financial development and financial inclusion gaps relative to other peer developing countries. Although this study is related to Allen *et al.* (2014), it focuses more on investment banking in financial development. Table 3 below reflects the region's financial development levels based on two selected variables to measure financial development—the variables Liquid liabilities to GDP and Private credit extended by deposit money banks to GDP.

Table 3: Financial Development by Regions

Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Liquid liabilities/GDP												
East Asia and Pacific	49	50	50	50	51	54	55	58	59	64	67	72
Europe and Central Asia	20	22	24	24	26	29	32	36	39	45	45	45
Latin America and the Caribbean	41	43	44	45	45	45	44	45	46	49	51	52
Middle East and North Africa	57	60	58	60	60	59	63	64	61	79	84	96
South Asia	37	39	41	43	50	50	50	47	50	54	56	58
Sub-Sah ran Africa	24	24	25	26	25	26	27	28	29	33	35	36
Private credit extended by deposit money banks/GDP												
East Asia and Pacific	35	34	34	33	34	38	39	40	44	47	48	51
Europe and Central Asia	11	12	13	14	17	20	25	32	42	42	40	40
Latin America and the Caribbean	33	34	33	31	29	29	30	32	35	37	37	38
Middle East and North Africa	32	33	29	29	28	29	32	33	31	35	37	47
South Asia	21	22	22	22	25	29	32	32	36	38	39	40
Sub-Saharan Africa	14	13	14	15	15	15	16	17	18	20	21	22

This table reports the evolution of liquid liabilities over GDP and private credit over GDP by regions. The period runs from 2000 to 2011. Only middle- and low-income countries are considered. Offshore financial centres are excluded from the sample of countries. Regions in the table correspond to the World Bank

Classification. The data source is the World Bank Database on Financial Development and Structure (Beck and Demirguc-Kunt 2009)

One of the severe challenges of African countries is sustainable growth that will create employment and reduce poverty (source). Besides, many scholars such as Demirguc-Kunt and Maksimovic (1996), Levine and Zervos (1998), Rajan and Zingales (1998), and Beck et al. (2000) have researched the finance theory and delved into the notion of the relationship between financial development and economic growth with more emphasis on the causality of the relationship. Therefore, it appears that there is more support for finance that precedes growth (Ojah and Kodongo, 2014). Several studies support this dominant viewpoint, among others, include Demirguc-Kunt and Maksimovic (1996), Levine and Zervos (1998), Rajan and Zingales (1998), and Beck et al. (2000). This discussion is important for this topic because one way to measure the extent of financial development in a country is the extent of investment banking in that country, responsible for engaging in investment funding activities and related services critical for economic growth.

Menyah *et al.* (2014) argue that developing countries with infantile financial systems are confined in a vicious circle. Weak financial development leads to weak economic performance, and in turn, substandard economic performance leads to substandard financial development (Fung, 2009). In contrast, countries with the well-established and developed financial system are inclined to develop quicker, and therefore finance does not only support growth but also pro-poor proposing that financial development aids the deprived to catch up with other economies as it develops (see Demirgüç-Kunt, and Levine, 2009; Baltagi et al., 2009). Table 4 shows the level of financial development across regions (Menyah et al., 2014).

***Table 4**: Financial Depth and financial efficiency for the latter part of the sample period*

Source: World Bank, Wor1d Development Indicators. 2008.

		World	Sub-Saharan Africa	East Asia & Pacific	South Asia	Middle East & North Africa	Latin America & Caribbean
Domestic credit provided by banking sector (% of GDP)	1995	147.7	79.9	91.6	43.6	63.7	44.1
	2005	164.6	82.3	121.4	57.2	53.6	52D
Domestic credit to private sector (% of GDP)	1995	I 13.2	63.9	88.4	23.J	31.4	32.7
	2005	133.8	64.9	JOI.I	38.7	39.9	*27B*
Interest rate spread (lending rate minus deposit rate)	1995	7.3	I 0.5	6.6	NA.	NA.	J0.4
	2005	6.5	12.2	5.5	5.9	4.8	*7B*
Liquid liabilities (M3) (% of GDP)	1995	95.5	37.2	86.5	43.0	60.2	282
	2005	94.8	33.8	141.0	62.7	70.8	40.7
Money and quasi money (M2) (% of GDP)	1995	95.0	33.6	78.2	40.4	54.5	245
	2005	95.J	36.6	130.7	58.4	62.9	383
Quasi-liquid liabilities (% of GDP)	1995	324.7	19.9	56.3	26.2	31.0	19.7
	2005	741.0	23.0	91.6	41.7	39.0	20A
Bank liquid reserves to bank assets ratio	1995	9.7	13.J	11.8	13.4	13.2	14.7
	2005	JO.I	15.7	J0.5	15.5	21.8	*JOB*
Gross savings (% of GDP)	1995	21.5	14.2	38.3	25.3	25.J	*17B*
	2005	21.3	J S.I	44.8	32.6	30.4	21D
Gross capital formation (% of GDP)	1995	22.3	18.4	39.5	25.J	25.J	195
	2005	21.8	19.2	38.4	31.9	26.0	203

2.2. Definition of key concepts

Rajan and Zingales (1998) define financial development as the extent to which the financial activity or nominal economy enables and fosters real economic activities. Levine (2002) defines finance-activity as a measure of stock markets and financial intermediaries' activity. To measure stock markets' activity, Levine (2002) uses the total value of shares traded and measures banks' activity, and he uses the private credit ratio. The private credit ratio activity implies the value of credit to the private sector as a percentage of GDP, while he defines the finance-size as the combined size of the stock market and intermediaries.

To this end, he uses the market capitalisation ratio as a measure of size. The work of Levine (2002) is critical for this study. It helps to understand these measures, especially as they relate to investment banking in interest areas.

Creane, Goyal, Mobarak, & Shab (2004) define financial development as a multifaceted concept, encompassing not only monetary aggregates and interest rates but also regulation and supervision, degree of competition, financial openness, institutional capacities such as the strength of property rights, the variety of markets and financial products that constitute a nation's financial structure.

According to Misati & Nyamongo (2011), the evidence available on finance and growth has ignored the relationship between financial development and investment and focused more on economic growth. Misati and Nyamongo (2011) argue that the objective of mobilising resources through financial intermediaries and capital markets development is to provide finance for private investment, and this notion supports the postulations that financial development first impacts capital formation or investment, then it is translated into economic growth.

While Africa's dismal economic growth can be attributed to a multitude of factors, there is no denying the fact that past barriers to free international trade and lack of financial development are among the prominent factors that could have contributed to the continent's low economic performance (Beck *et al.* 2011; Ndulu *et al*. 2007). The definition of financial development encompasses investment banking as part of the financial intermediaries responsible for raising resources and allocating capital. Therefore, it is crucial to have well developed and well-functioning investment banks to carry out this critical task. One way investment banks can execute their task is by raising capital through Initial Public Offerings.

The study looks at Initial Public Offerings (IPOs) organised by the investment banks to measure the investment banking activity and examine the number of investment banks in the emerging market economies. These will indicate the extent of investment banking in a particular country. It is also worth stressing that the study will not be examining causality between investment banking activities in a particular country and the level of financial development. Nevertheless, it will merely examine to what extent there is a positive relationship between the level of investment banking and financial development, if at all, there is any.

Chiarella et al. (2016) have argued that banks require a more fundamental change in the way they operate. Further, the traditional capital markets and investment banking models are no longer an

option, especially after 2007/2008. The global crisis has seen declining revenues for the banks and rising operating costs.

Chaudhuri, Vinayak, & Poullet (2011) have noted the economic rise of Asia. However, they also noted that the rise results from India and China's rise and other countries within the region, particularly countries in the Association of Southeast Asian Nations (ASEAN). They argue that this region contributed about 9% of Asian growth in wholesale banking revenue and 13% from the Capital Markets and Investment Banking (CMIB) revenues. They are noting several factors for this impressive growth, such as the need to develop roads, ports, power plants, and the governments' determination to expand capital markets.

Rajan & Zingales (1998) argue that financial development ought to measure the easiness with which those that borrow money and those who save money can come together and, once together, the confidence they have in one another. Financial development ought to be correlated to the variety of intermediaries and markets available, the adeptness with which they execute the assessment, monitoring, accreditation, communication, and dissemination of funds roles, and the associated legal and regulatory framework guaranteeing performance. The table below reflects the level of financial development across countries by Rajan and Zingales (1998).

Table 5: Financial Development across Countries

Country	Accounting Standards	Total capitalization over GDP	Domestic credit to the private sector over GDP	Per capita income (dollars)
Bangladesh		0.20	0.07	121
Kenya		0.28	0.20	417
Morocco		0.41	0.16	807
Sri Lanka		0.44	0.21	252
Pakistan		0.53	0.25	290
Costa Rica		0.53	0.26	2,155
Zimbabwe		1.01	0.30	441
Jordan		1.16	0.54	1,109
Egypt	24	0.74	0.21	563
Portugal	36	0.82	0.52	2,301
Peru	38	0.28	0.11	842
Venezuela	40	0.34	0.30	3,975
Colombia	50	0.21	0.14	1,150
Turkey	51	0.35	0.14	1,081
Chile	52	0.74	0.36	2,531
Brazil	54	0.33	0.23	1,650
Austria	54	1.00	0.77	9,554
Greece	55	0.74	0.44	3,814
India	57	0.50	0.24	240
Mexico	60	0.39	0.16	2,651
Belgium	61	0.65	0.29	11,226
Denmark	62	0.56	0.42	12,188
Germany	62	1.08	0.78	12,345
Italy	62	0.98	0.42	6,460
Korea	62	0.63	0.50	1,407
Netherlands	64	0.91	0.60	11,155
Spain	64	1.02	0.76	5,087
Israel	64	1.18	0.67	3,573
Philippines	65	0.46	0.28	729
Japan	65	1.31	0.86	9,912
France	69	0.70	0.54	11,337
New Zealand	70	0.59	0.19	7,490
South Africa	70	1.51	0.26	2,899
Norway	74	0.63	0.34	13,430

Country	Accounting Standards	Total capitalization over GDP	Domestic credit to the private sector over GDP	Per capita income (dollars)
Canada	74	0.98	0.45	10,486
Australia	75	0.82	0.28	9,866
Malaysia	76	1.19	0.48	1,683
Finland	77	0.52	0.48	10,181
UK	78	0.78	0.25	9,600
Singapore	78	1.96	0.57	4,661
Sweden	83	0.79	0.42	14,368

Notes: Accounting standards are an index developed by the Center for International Financial Analysis and Research, ranking the amount of disclosure in each country's annual company reports. Total capitalization to GDP is the ratio of the sum of equity market capitalization (as reported by the IFC) and domestic credit (IFS lines 32a-32f but not 32e). Domestic credit to the private sector is IFS line 32d. Per capita income in 1980 is in dollars and is from the IFS.

Essentially investment banks are responsible for working with corporations that seek to raise capital through public or private capital markets. Investment banks also manage risks in their existing capital, and also complete Mergers and Acquisition (M&A) - related tractions, provide financing through direct investments in corporate entity and debt securities, provide loans to corporate clients, and assist government entities in raising capital and manage risk (Stowell, 2010).

2.3. Theoretical Framework

The study is underpinned by the finance theory, where there is a universal acceptance that there is a relationship between financial development and economic growth. However, the disagreement is on the causality of the relationship (Schumpeter, 1934), (Robinson, 1929), (King & Levine, 1993a&b), (Levine, 2002) and (Rajan & Zingales, 1998). According to Schumpeter (1934), financial development precedes economic growth, while Robinson (1929) posits that economic growth precedes financial development. Levine et al. (2000) postulate that the cross-country differences in legal and regulatory systems influence financial intermediation development. Levine (2002) argues that classifying as bank-based or market-based is not useful, and though there is a robust link between financial development and the economy, there is no support for either bank-based or market-based view.

2.4. Investment Banking Comparison

Investment banks in the United States of America, Europe and Asian markets are much bigger than the African markets investment banks by market capitalisation and revenues. Below are the top 10 investment banks by http://graphics.wsj.com/:

Global Investment Banking Bank Ranking

YTD 2020			YTD 2019		
Bank	**Revenue $m**	**% share**	**Rank**	**Revenue $m**	**% share**
JPMorgan	7,409.8	9.2	1	6,327.9	8.9
Goldman Sachs	6,660.1	8.3	2	5,310.7	7.5
Morgan Stanley	5,378.0	6.7	3	4,379.1	6.2
BofA Securities	5,370.0	6.7	4	4,369.6	6.2
Citi	4,307.1	5.4	5	3,573.1	5.0
Credit Suisse	3,527.6	4.4	7	2,703.0	3.8
Barclays	2,867.5	3.6	6	3,039.1	4.3
Deutsche Bank	2,107.0	2.6	8	1,985.2	2.8
Jefferies LLC	1,763.0	2.2	12	1,349.3	1.9
Wells Fargo Securities	1,594.1	2.0	9	1,549.5	2.2
Subtotal	40,984.1	51.1		34,586.5	48.7
Total	**80,183.5**	**100.0**		**71,023.4**	**100.0**

Source: Investment Banking Scorecard - WSJ.com

The African markets investment banks are much smaller, and the capital markets in the developed countries are larger by market capitalisation and volume trade than African countries. The size of the investment banks and capital markets translates to financial development in the developed and Asian markets.

2.5. Role of investment banking

Gill (1980) argues that the promotion of securities markets, especially equity markets, is crucial in improving domestic financial markets' efficiency. Investment banks, merchant banks, and brokers are critical to this process, and development institutions can, and some have already played a role.

The development of investment banking is traced way back to the 15th century in Europe and predated both the commercial banks and the securities markets. The Glass Steagal Act of 1933 then separated commercial banking from the corporate securities underwriting in North America (Gill, 1980). In many developing countries, investment banks evolved for new needs created by the development of the financial sector or the gaps in the existing services offered by commercial banks, and to a lesser extent, the development banks contend (Gill, 1980).

2.6. Investment banking and the acquisition process

As part of its key activities and functions, investment banks exist to assist corporations in raising capital. Firms raise funds for investing purposes by selling diverse securities, which they market in diverse ways. According to the Dealers' Digest (1985) reports, $355.3 billion in public securities trades have been sponsored or underwritten between 1980 and 1984. Of the total amount, 24 percent is common stock, 5 percent is preferred stock, 63 percent is debt, 2 percent is convertible preferred stock, and 6 percent is convertible debt (Smith, 1986).

Smith (1986) found that the average stock price responses to public security issues are either negative or not materially far away from zero. He argues that the hypothesis also has implications for other associated events, such as dividend variations and security buybacks. Therefore, it is conceivable to appraise their comparative merit by taking lessons from prevailing evidence about price responses to the associated announcements.

As corporations choose the type of security to be issued, they need to be aware of the announcement's market reaction implications. There are numerous hypotheses for the pattern of relative stock price reactions, such as the optimal capital structure, implied cash flow change, unanticipated announcements, information asymmetry, and the ownership changes (Smith, 1986).

2.7. Cost of going public

This section discusses the cost of going public as an investment banking activity.

Ritter (1987) argues that for companies going public, capital markets are not without friction. Moreover, there are costs involved, and these can be quite significant. The costs involved are

classified between direct and indirect costs. The direct costs include the investment banker fees, while indirect costs are under-pricing costs, also known as leaving money on the table.

Ritter (1987) continues to argue both components are economically substantial, with the total costs, stated as a percentage of the realized market value of the securities issued, are on average 21.22% for firm commitment offers and 3l.87% for best efforts offers. It is important to note that with both forms of investment banking contracts, the process of going public begins with the registration statement, encompassing descriptive information about the issuing company and the planned offer, which is filed with the United States Securities and Exchange Commission (SEC). Upon SEC approval, the issuing entity and the investment bank hold a pricing meeting from which an offer price and the number of shares to be issued is agreed upon.

According to Ritter (1987), when an offer price has been fixed, shares cannot be traded at a higher price even if the issue's demand is suddenly high. Although the investment banker can sell shares at a lesser price, it disrupts the syndicate. It is also worth noting that while the costs of going to the public are, on average, considerably high for best efforts offers, this is partly because there are considerable economies of scale, and best efforts offer are inclined to be lesser than firm commitment offers.

One probable reason for choosing a firm commitment and a best-efforts deal, given by Mandelker and Raviv (1977), relates to the optimal bearing of proceeds risk, explained as the uncertainty around the extent of money being raised. Mandelker and Raviv argue that in a best-effort offering, the proceeds risk is born by the issuing company, whereas in a firm commitment, the risks are born by the investment banker. For firm commitment offers, a preliminary prospectus is usually dispensed some weeks before the actual offer. The preliminary prospectus indicates possible lowest and highest offer prices and a possible quantity of shares to be traded (Ritter, 1987). Pyles et al. (2009) found that consistent with previous studies, Real Estate Investment Trusts (REITs) IPOs are associated with lower under-pricing levels relative to legal issues. It was also found that REITs are associated with smaller file price revisions. Both findings are potentially attributable to the lower level of uncertainty associated with pricing REITs.

Both the apparent costs billed by the sponsors or underwriters and the hidden or implicit costs of mispricing are studied (e.g., Ritter 1987; Lee et al. 1996). According to Ritter (1987), this line of works is extended by examining whether openly available material before the initial public offering (IPO) decreases initial pricing ambiguity and, thus, the costs of going public. Muscarella and Vetsuypens (1989) examine the asymmetric information hypothesis as it relates to the under-pricing of IPOs through a comparison of a sample of initial public offerings that previously experienced a leveraged buyout (LBO) with a control sample of non-LBO IPOs (Ang and Brau, 2002).

2.8. The economics of securities and the role of government in investment banking

The extent of investment banking includes the role played by government and development finance institutions in raising capital. To this end, Bkhchandani (1993) alludes to the fact that there are several auction types that governments engage in raising funds. The study focuses mainly on the American perspective—the Department of Treasury usually auctions thirteen weeks and twenty-six-week bills weekly. The department also auctions more extended maturity notes, bills, and bonds less frequently than short maturity instruments. Bills for a year are auctioned every month, while bonds with a 30-year maturity are auctioned biannually (see Fabozzi (1991) for an auction schedule). Presently, thirty-eight primary dealers are permitted to submit sealed bids at the auction (Bkhchandani, 1993).

Bkhchandani, (1993) suggests that there are also non-competitive bidders, mostly single investors, who submit closed bids that stipulate only the quantity required, up to the highest stipulated by the Treasury department. The non-competitive bids often succeed at a price equal to the quantity-weighted average of the successful competitive bids. The Federal Reserve Bank also partakes in the auction, both on its account and as a proxy for foreign central banks. The forms of auction comprise a discriminatory auction (*successful bidders pay the unit price they tendered*), uniform-price auction (*beginning with the uppermost price bidder downward, are fulfilled or satisfied until all the objects are allotted. Nevertheless, the successful bidders pay only the uppermost losing bid price, even if their bids were higher*), ascending-price auction (*the auctioneer begins with a low price, and prices are call out at increasing sequence*), and a descending-price auction (*begins with*

the highest price, the auctioneer calls out prices at a decreasing sequence until a bidder buys more or less all of the objects at the current price).

2.9. The right private equity for African economies

This section discusses private equity as an activity of investment banking.

Ojah (2009) contends that the most valuable commodity for an entrepreneur the world over is access to external finance, whether in debt or equity contracts. By definition, entrepreneurs are looking for production opportunities beyond the resources they own or control, and that requires external finance as its foundation of existence. This foundation is predominantly significant because entrepreneurs are a most critical foundation of creating jobs that never existed and economic growth in both advanced and unindustrialized economies (Blau, 1987; Wennekers and Thurik, 1999; Schramm, 2006; Acs & Szerb, 2007 and Klapper et al., 2007).

Ojah (2009) argues that finance can be made available to entrepreneurs in various ways, including firming up the banking industry, establishing government-sponsored credit funding programs, and establishing private equity markets. Of the different mechanisms available to entrepreneurs to raise capital, private equity markets appear to be more suitable for both innovation and can progress into sustainable public enterprises (i.e., it seems most appropriate to generating publicly held companies).

Further, Ojah (2009) argues that the right kind of private equity market for African countries is the Venture Capital / Angel Finance three platforms. Sometimes called a finance-cum-managerial support platform, an equity investment fund is made available to entrepreneurial (privately held) companies or start-ups that hold attractive product concept(s) that are still to accomplish maintainable consumers' acceptance. The Buy-Out / Going-Private platform is the wrong kind: a private equity scheme intended to uplift or foster production efficiency in a part of or all of an existing company by managing that operation or activity as a private company.

2.10. Structuring syndicated loans

The structuring of syndicated loans is discussed here as an activity that flows from investment banking. Dennis and Mullineaux (2000) found that a loan is most likely going to be syndicated as

more information about the borrower or person borrowing the money becomes more transparent, as the syndicate's managing agent turns out to be more "reputable," and as the loan's maturity increases. The lead manager holds more incredible scopes of information-problematic loans in its portfolio. Loan syndications, more like loan sales, seem to be driven, in part, by capital regulations, and the liquidity position of the agent bank impacts the probability of syndication, but not the extent.

Esty (2001) found that Banks partake in the syndicated loan market for diverse reasons. Arranging banks are usually more concerned with making fee income, looking to structure, and leading transactions. Partaking banks, those attracted primarily in making loan assets while remaining within regulatory constraints on leverage and loan size, look to spread credit exposures to specific borrowers, industries, or countries and develop loans in markets where they do not have origination capabilities.

Furthermore, Esty (2001) argues that when financing, it is critical to have certainty. Borrowers often ask for or request completely guaranteed or underwritten bids, meaning that the lead arranger(s) must commit or undertake to provide the loan's full amount on specific terms and pricing. The alternative is a best efforts bid in which the lead arranger undertakes to guarantee or underwrite part of the loan—usually the amount it is willing to keep on its balance sheet—and endeavour to put the balance in the bank market. Although guaranteed or underwritten contracts can be financed more rapidly, the underwriting fee is usually greater to reward the guarantor or underwriter for more significant credit and syndication risks. In practice, just about seventy percent of contracts are concluded on an underwritten basis.

2.11. The performance of hedge funds

The performance of hedge funds is discussed in this section as an activity of investment banking. Liang (1999) found that hedge funds vary considerably from traditional investment firms, such as mutual funds. Unlike mutual funds, hedge funds track dynamic trading strategies and have small systematic risk. Furthermore, hedge funds bring into line the fund manager's rewards to the performance of the fund. Hedge fund targets for yields or returns vary from mutual fund targets. Hedge funds are total or absolute performers; for hurdles, some targets such as the T-bill rate plus

a premium or LIBOR plus a premium are used. In contrast, mutual funds are relative or comparative performers; such benchmarks as the S&P 500 Index for equity funds and the Lehman Brothers Aggregate Index for bond funds are used.

2.12. Financing in developing economies

A vibrant private sector is an essential pre-requisite for triggering economic dynamism, enhancing productivity, diffusing new industrial technologies, maintaining competitiveness, contributing to entrepreneurship development, and reducing poverty (Niklaus, 2005). Although government actions and external support are undoubtedly necessary, the required growth level will only be achieved and sustained due to sustained private sector activity (Nyamongo & Morekwa, 2011).

Mlachila et al. (2013) notes that Sub-Saharan Africa is a continent with huge problems on the one hand and massive potential on the other. Its past has been challenging and filled with considerable challenges to further development remain. Poverty is pervasive, human development is relatively low, and growth has not been inclusive. The region faces a huge infrastructure gap, while the investment climate and regulatory environment are relatively weak. There are still weaknesses and challenges in governance and institutional capacity that require further work.

According to Bending et al. (2015), The banking sector in sub-Saharan Africa has grown progressively over the past decade. It has bee assisted by the efforts to reforms (Kasekende, 2010), the depth and coverage of financial systems—as measured or quantified by all the standard indicators of financial development, such as the ratios of private sector credit to Gross Domestic Product and broad money (M2) to Gross Domestic Product—there were substantial improvements over the period 2000 to 2013, notwithstanding from a small base

Table 6 *SSA: Indicators of financial development by income group, 1995-2013*

	Average of 1995	Average of 2003	Average of 2013
Domestic credit provided by financial sector (% of GDP)			
AFR LIC	19.9	23.7	27.2
AFR MIC	42.3	48.2	48.6
Other LIC	24.7	28.8	33.8
Other MIC	43.2	43.6	60.7
Money and quasi money (M2) as % of GDP			
AFR LIC	22.9	29.6	34.5
AFR MIC	34.5	40.4	44.9
Other LIC	28.2	33.2	49.8
Other MIC	43.0	50.8	64.6

Moreover, Nyamongo (2011) argues that considerable academic literature going way back to Bagehot (1873), Hicks (1969), Schumpeter (1911), McKinnon (1973), and Shaw (1973) puts substantial prominence on the positive contributions of financial systems to investment and economic growth. According to this literature, financial instruments, markets, and institutions arise to improve information asymmetry, enforcement, and transaction costs, which lead to, impacts saving rates, investment choices, technological innovations, and steady-state growth rates. Here, it is acknowledged that well-running financial systems reduce external financial constraints that hinder companies and industrial progression and hence economic growth (Acharya, Amanulla, & Joy, 2009; Boyd & Prescott, 1986; Burcu, 2009; Greenwood & Jovanovic, 1990; King &Levine, 1993a, 1993b; Levine, 1997).

Nyamongo (2011) also observed that Table 4 is contrary to financial sector development's expected outcome. It was expected that stock market development in Africa would boost domestic savings and provide complementary sources of long-term financing that would, in turn, increase both the quality and quantity of investment. The unexpected outcome may be explained in a broader context that compares the stock market trend with other emerging markets. However, the stock market development in Africa exhibit upward trends, the average capitalisation (excluding South Africa) of about 27% of GDP is lower than in most emerging markets. For example, Malaysia and Singapore had a capitalisation ratio of about 160% on average during the period under review, which would explain why such countries have realised greater investment levels compared to those in Africa.

Table 7: Trend in private investment and financial development in selected countries

Trends in private investment and financial market development in selected countries.

	Private investment as % of GDP				Market capitalisation						Annual % growth 2004–2008
	% Growth 1995–1998	% Growth 1999–2003	% Growth 1995–2003	% Growth 2004–2008	Volume $ US Millions		As a % GDP				
					1995	2003	1995	2003	2008	Annual % growth 1995–2003	
Botswana	−0.3	13.2	7.57	2	397	2131	9.2	28.3	27	17.07	3.84
Ghana	14.7	7.26	15.07	4	1680	1426	26.6	18.7	21	−0.478	30.0
Kenya	11.5	−6.7	0.51	−1	1889	4178	20.8	29.1	32	11.68	25
Mauritius	−2	−4.486	−2.08	17	1381	1955	35.2	37.4	40	2.774	2.56
Nigeria	5	14.25	8.22	20	2033	9494	7.6	16.3	23	10.84	43.7
S. Africa	−1.2	3.29	0.66	34	280,526	267,745	206.2	167.5	178	7.3	−15
Zimbabwe	−6.9	−50	−34.35	−18	2038	4975	31.2	87.9		34.602	130.7
Cote D' Ivoire	−6.329	−4.46	−1.62	2	867	1650	8.6	12	30	6.01	0
Namibia	3.4	2.39	0.44	0	189	442	6.2	7.2	7	16.2	30
Swaziland	14.02	7.43	6.39	7	339	172	26.85	9.3		−2.54	100
Zambia	2.44	1.33	2.63	7	19	217	6.8	6		9.68	58.3
Malawi	3.67	5.49	5.46	−6	–	156	0.97	9.2	41	72.05	0
Tanzania	2.63	16.55	10.11	6	–	398	–	4.2	6	11.38	0
Uganda	−8.8	16.95	11.53	6	–	36	–	4.2	74	66.6	68.18
Morocco	−16.7	−17.47	−9.71	27	4376	13152	14.4	30.1	53	12.02	8.16
Egypt	−10.42	−1.57	−3.35	−17	8088	27073	17.1	32.8		8.96	
Tunisia	−1.55	3.47	3.39	2	4006	2464	22.3	9.8		−7.01	
Algeria	−2.99	6.38	2.89	−17	–	145	–	–		−18.85	

Figure 1: Trend of credit to the Private Sector and Interest Rate Spread

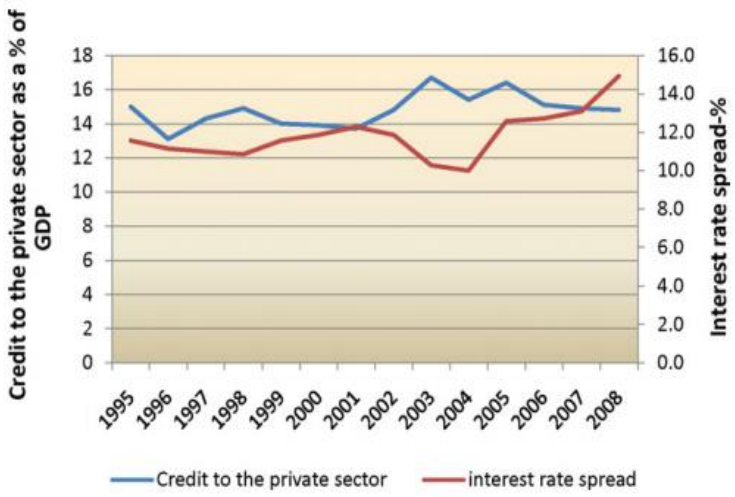


Fig. 1. Trends of credit to private sector and interest rate margins (the trends are based on selected countries listed in Table 1).

PWC (October 2016, p. 46) found that African banks had the most remarkable year in 2015, growing their entire net interest income by more than twenty percent compared to 2014. South Africa's banking sector is hugely the most established on the continent. Retail banking in South Africa is categorised by intense competition, notwithstanding industry concentration. The report also noted that the South African banking sector has been evolving, and all its banks were ranked by tier 1 capital in the top four banks in Africa. Nigeria's banking sector continues to be driven by loans; the dwindling oil sector has placed pressure on corporate balance sheets and the banking

system. Kenya's banking sector continues to grow, motivated by a steady domestic currency, economic growth from within, and middle-class customers' demand for more diversified products. The report also covered the top 5 banks largest bank in the continent by tier 1 capital, as reflected in the figure below:

Figure 2 Top sub-Saharan banks ranked by Tier capital

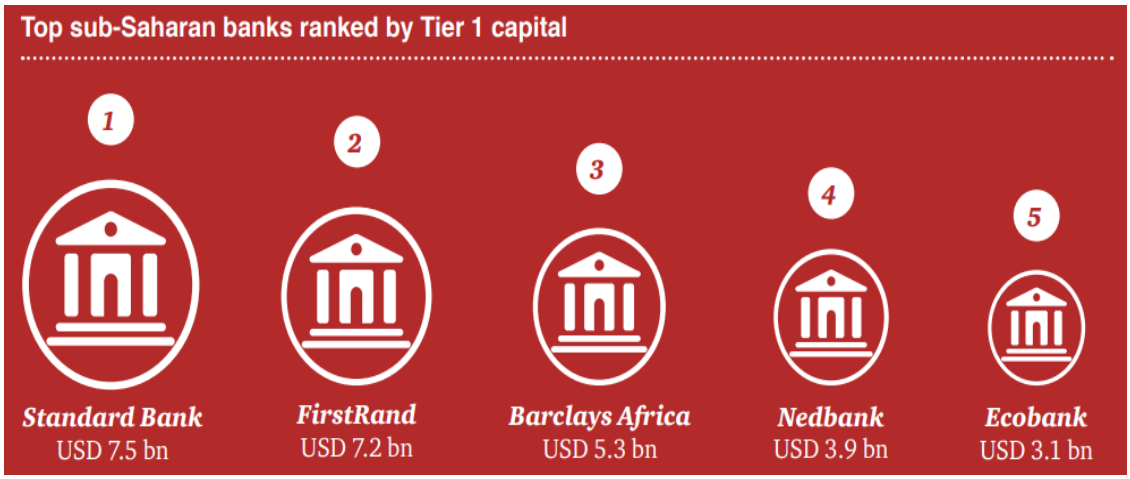
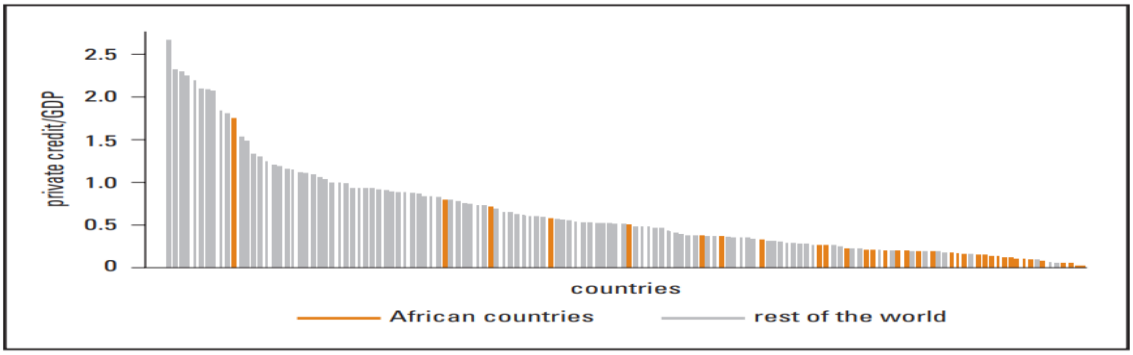


Figure 3 Relative size of African banks



Source: Beck, Demirgüç-Kunt, and Levine (2010).
Note: Sample size: 140 countries. The highest African values are for Mauritius, Morocco, South Africa, and Tunisia.

The African countries lag in private credit as a percentage of GDP, and there are about four countries that are fairly compared. Therefore, this contributes to access to capital and limits growth and development in African countries.

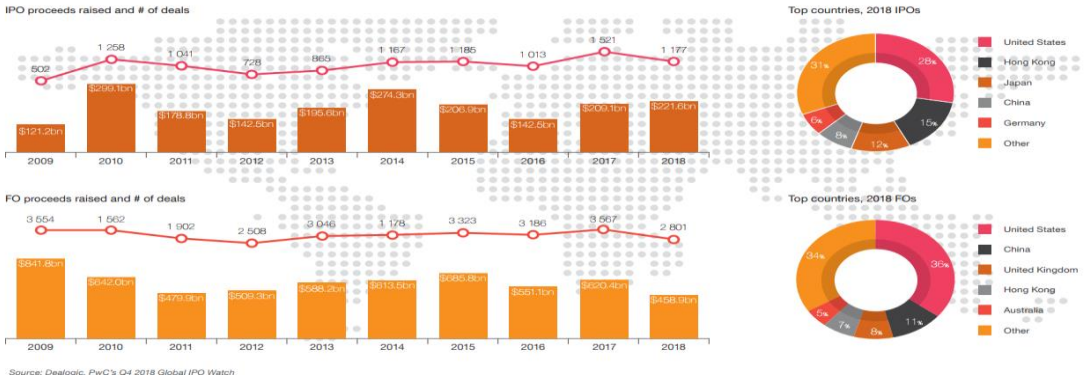
According to Beck, Demirguc-Kunt, & Maksimovic (2004), in more concentrated banking markets, companies of all sizes face higher financing obstacles. The impact seemed to be reducing as they moved from smaller to medium and more massive companies. It was further noted that there appears to be a necessary interaction between bank concentration, on the one end, and

regulatory and institutional country characteristics and the banking system's ownership structure, on the other end. They argue that the relation between banking concentration and financing obstacles becomes less significant in countries with relatively high levels of GDP per capita, relatively well-developed institutions, an efficient credit registry, and a high share of foreign banks.

2.13. Analysis of Global IPOs

According to the 2018 PWC Africa Capital Market Watch Report, African capital markets have historically not featured as the most popular exit route for Private Equity (PE) firms, who have pursued other exit strategies for local portfolio companies, such as sales to strategic investors or management, or other secondary sales to other PE or financial investors. As can be observed from the figure below, the United States has contributed the most IPOs and FOs from 2009 to 2018, followed by the Asian markets like Hong Kong, Japan, and China. The deduction in figure 4 points to the extent of investment banking in these markets as IPOs and FOs are activities facilitated by investment bankers in underwriting and other services.

Figure 4: Global proceeds raised via IPO and FOs, 2009-2018



Turner et al. (2017), in the Delloite IPO 2017 Report, found that on a value-weighted basis, Private Equity exits through Initial Public Offerings were equivalent to trade sales in 2016. However, we have realised a substantial deterioration in activity from a $7bn peak in 2014. The drop in the number of Initial Public Offerings and capital value of Private Equity-sponsored Initial Public Offerings in 2016 mostly reveals the exit of numerous substantial investments over the past

three years (including Healthscope, Spotless Group, Link Group, and MYOB), and the current stage of Private Equity fundraising.

Figure 5 Private Equity debate

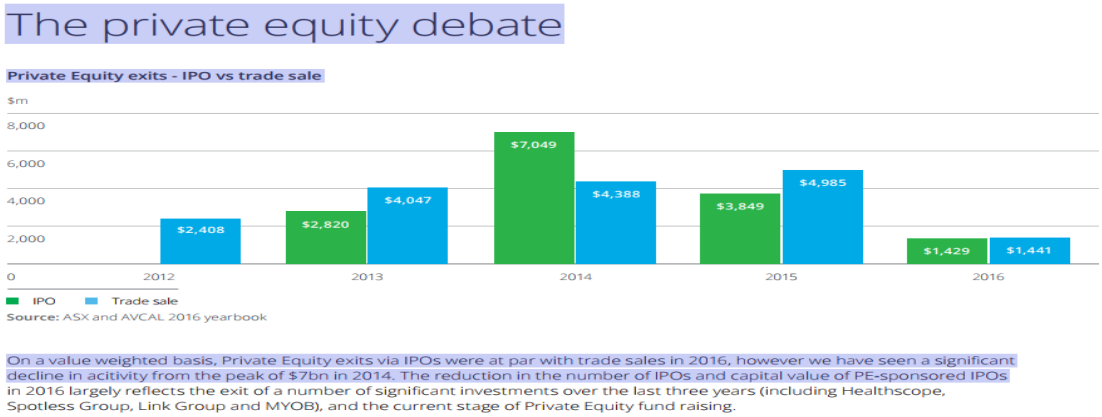
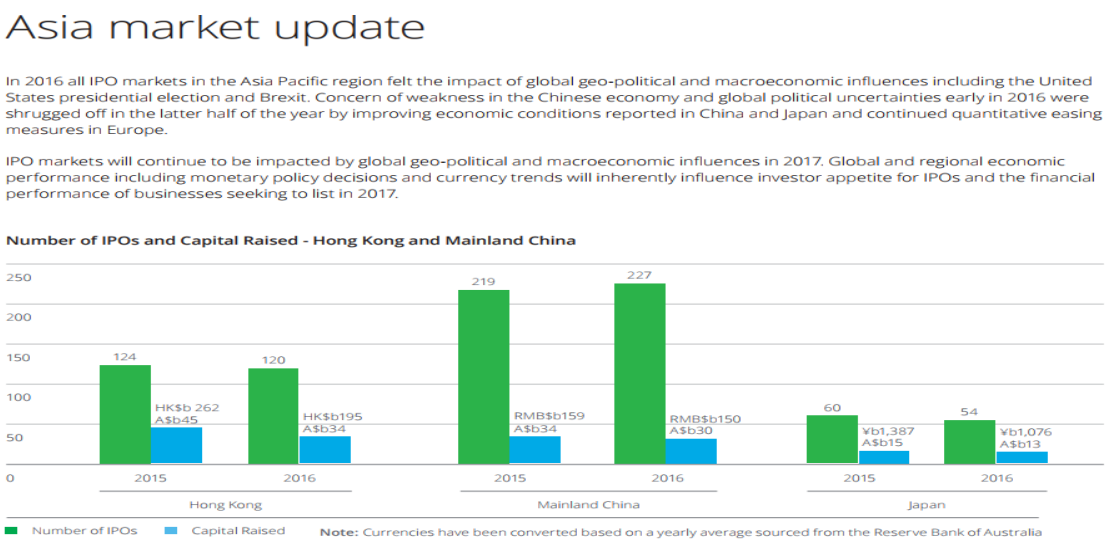
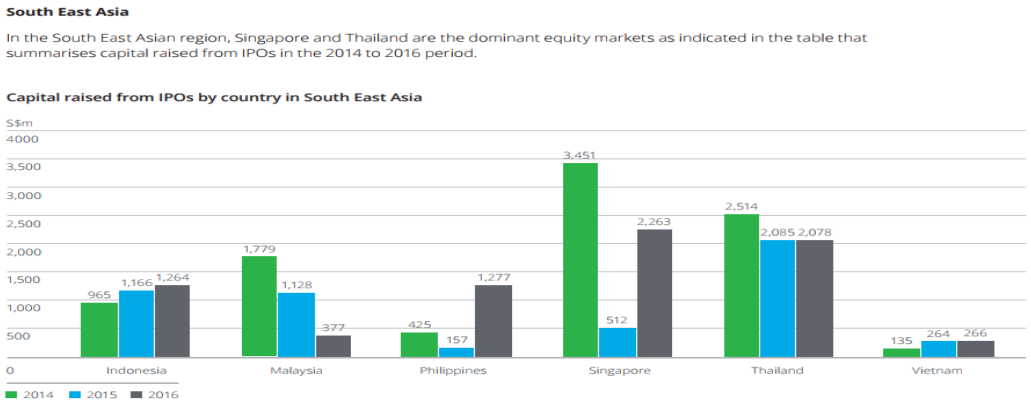


Figure 6 Asia market update



Based on the outcomes of figure 4 above, Mainland China is by far the most significant contributor to the number of IPOs that have been facilitated during the period between 2015 and 2016 with over 200 IPOs. However, in terms of the country's currencies, the capital raised seems entirely aligned between Mainland China and Hong Kong.

Figure 7 Capital raised from IPOs by country in South East Asia



These figures demonstrate the extent to which Asia has contributed to the IPO activities over several years. Both the number of IPOs and the capital raised. It is quite clear that Thailand and Singapore are leading in that space, and they have been consistent over the period reviewed, as reflected in figure 5. Malaysia and Indonesia come second, with the latter showing an upward trajectory. A country with the lowest activity in Vietnam. It would be interesting to compare these to the African countries; however, similar analyses were not found. I presume the analysts have not found exciting trends and activities within the African countries to analyse the IPO performance.

2.14. Conclusion of the chapter

Based on the findings from various researchers highlighted in the literature review, Africa is lagging. The financial systems of African economies are small and underdeveloped. The stock exchanges and capital markets are small. The African economy's situation remains unchanged despite the progress made from financial reforms and policy development perspective. Especially in Asian markets, other emerging market economies have improved significantly and participate meaningfully in global space as reflected by the capital raised through their IPOs in the figures above. The banking systems are relatively small in the African context, and many people remain unbanked. Access to credit is a huge problem.

CHAPTER 3: Research Methodology

3. Introduction

Chapter 3 presents the research methodology model used to analyse the results of this study. The methodology follows a quantitative approach using secondary data obtained from the World Bank Development indicators, World Association of Exchanges website, JSE and the Capital Market Watch report. The data collection is a data series from the year 2000 to 2018. The data focuses on the three explanatory variables: GDP per capita, Human development index and Capital raised through IPOs. The data is analysed through Gretl an econometric model that produces econometric results for analysis and conclusions. Allen *et al.* (2014) used similar explanatory variables when assessing the African financial development and financial inclusion gaps relative to other peer developing countries. The research paradigm and design are discussed as part of this chapter. The chapter also covers the parameters of the data analysed and the method of sampling used, and the techniques of collecting data. The chapter also covers the discussion on the validity and reliability of data and the robustness of the model.

3.1. Research Methodology

The study uses regression analysis of the explanatory variables identified as related to financial development. The analysis is done to test or investigate whether there is a relationship between these variables (mostly proxy for investment banking level or presence) and financial development. The study's crux is to contrast these relationships for Africa economies to those of the other emerging markets, especially Asian economies. The model that is used is borrowed from Allen *et al*. (2014). The details of the model are discussed below, including the variables considered. Various sources used include credible research information, such as the websites of banking regulatory authorities, websites of the banks, websites of global magazines, and other sites such as World Business Environment Survey (Enterprises Survey), MSCI, HBSC, Bankscope, Bank focus, Bloomberg, Global Finance magazine, and so on. Cross-sectional data will be obtained from these various sources for analysis and comparison. Secondary data is obtained from the various investment banks' websites selected from the country's sample for regression analyses.

The data covers the period from 2000 to 2018 for each of the countries selected for the study. The proceeds from Initial Public Offering (IPOs) is used as a proxy for the extent of investment banking, the gross domestic product and/or per capita are used to represent the level of economic development. Lastly, the human development index from the World Bank will be used as a proxy for education, contributing to financial inclusion, according to Allen *et al.* (2014). The IPOs and human development index data will be logged and lagged where necessary to avoid spurious results and enhance the findings' validity. The analysis will include both the regression analysis results and the literature review above to draw conclusions that sound and supported sound theoretical framework.

3.2. Population and Sampling

According to Morgan Stanley Capital Markets Index, there are 21 countries categorised as emerging market economies. Of the 21 countries, a random selection of a sample of six countries was made for the study. In the sample of six countries, three were selected from African countries and another three from Asian countries. For the study's purposes, data related to the three explanatory variables for each of these countries from the year 2000 to 2018 was obtained from World Bank development indicators, the World Association of Exchanges website, JSE, Capital market watch report, and the UNCTAD Statistics page. The explanatory variables are GDP per capita, Human capital index and the Capital raised through IPOs. The data series is analysed using Gretl software to obtain statistical results for analysis and inferences to reach conclusions.

3.3. The Model

The regression model used is borrowed from Allen *et al*. (2014). The model has three explanatory variables: the extent of investment banking, the level of economic development, and the level of education. The model is used to test the hypothesis given above. The model is as follows;

$$Financial\ Development = F(Extent\ of\ investment\ banking, Openness, Econ\ Dev, Education)$$

$$Yi = \propto + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where Y_i represents the measure of the level of financial development, and X_1 represents the extent of investment banking, X_2 represents openness, X_3 represents the level of economic development, and X_4 represents the level of education. The variables were carefully selected based on previous studies by Beck et al. (2008) and Levine et al. (2000). Because this study's analysis is

closely linked to banking activities, the ratio of credit to the private sector to GDP was chosen as a representative variable measure of financial development. Levine et al. (2000) argue that this variable is also robustly linked with long-run economic growth.

The explanatory variables were also carefully considered because of their relationship to financial development. As measured through capital raised from Initial Public Offering, the level of investment banking is an important variable and a variable of interest in this study. The level of education measured by the human development index, and the GDP per capita also contributes to financial development. Allen *et al*. (2014) argue that the explanatory variables used are based on the earlier studies on the finance-growth nexus by Levine (2005) and the analysis of financial determinants by Beck *et al*. (2008); Cull and Effron, (2008). Of particular interest in the variables is the use of per capita income, which lagged. Cole *et al.* (2014) found that education positively impacts financial inclusion and positively impacts financial management. Further lack of education and lack of financial management capacity can deter financial development (Allen *et al.*,2014).

3.4. Limitations of the study

Data on investment banks as a unit is difficult to obtain, especially in the African context, where banks have adopted the universal banking approach where investment activities come with other commercial banking activities. To this end, the form of proceeds from the IPOs as an investment banking activity is used to represent the extent of investment banking in each of the countries selected for the study.

3.5. Conclusion of the chapter

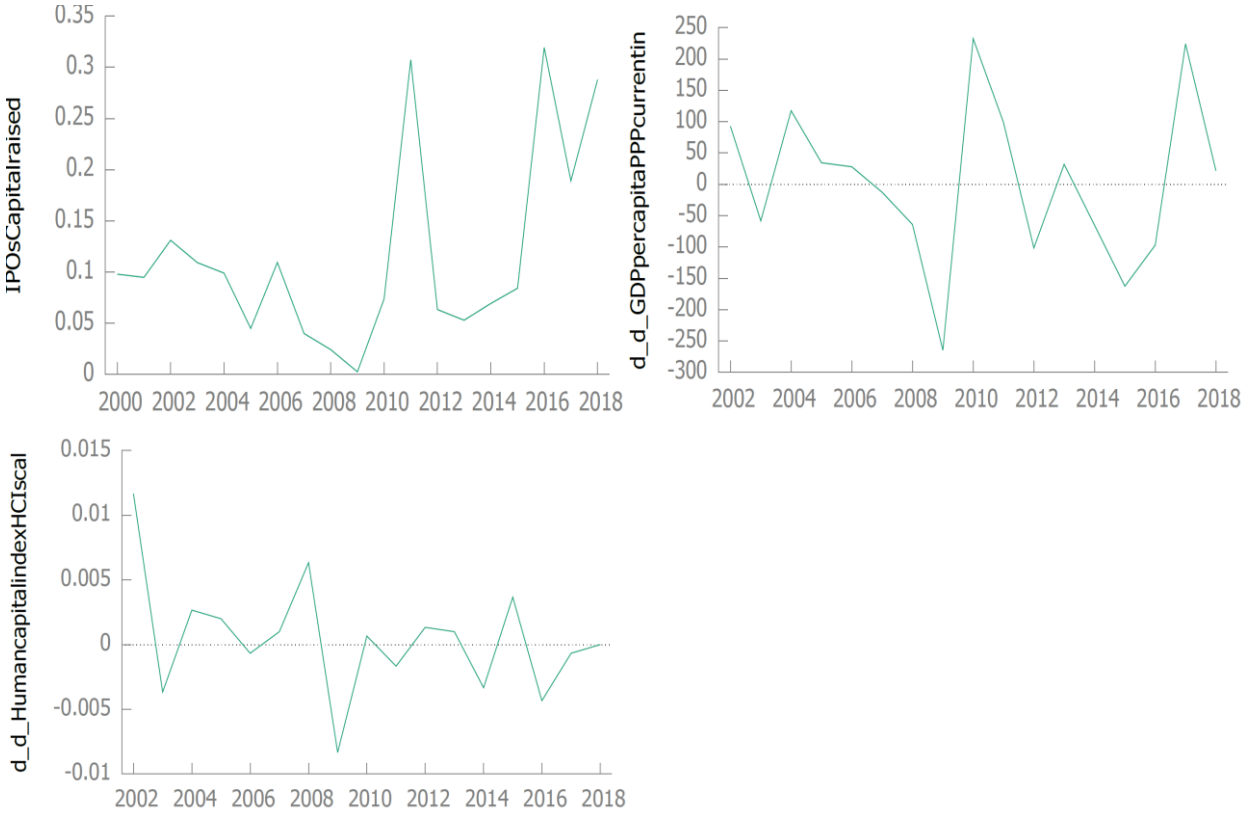
The chapter sets out an applicable theoretical framework and useful data and data sources relevant to producing quality work relating to the study. It logically presented how the data will be analysed and presented in order to reach sound conclusions. The explanatory variables that are paramount in this study have been set out in detail. It served as the foundation from which detailed analysis and presentation of findings can take shape.

CHAPTER 4: Presentation of Findings

4. Introduction

The chapter presents the findings of the study. The results are extracted from regression analysis, using ordinary least square – OLS. The regression analysis examines the relationship between a financial development (dependent variable) and the independent variable, namely, level of investment banking, economic development, and education level in the six selected countries of Africa and Asia. The results are compared to identify similarities and differences to answer the main research question. The results are presented to include summary statistics and regression results for each of the selected countries. The summary statistics extracted consist of graphs, charts and tables, data distributions, including the computation of other statistical information, such as means, variances, and standard deviations (Cooper *et al.*, 2008). Below are the results of the time series plot for African emerging markets data:

4.1. Data series plot of African emerging markets:



Source: Gretl software

Below are the results of the time series plot for the Asian emerging markets data.

4.2. Data series plot Asian emerging markets:



Source: Gretl software

4.3. Stationarity test

The data was tested for stationarity variables using the Augmented Dicky Fuller test before running the Ordinary Least Squares regression model (OLS). Data was found to be stationary, meaning that it did not contain any unit roots as per the table shown below except for IPOs capital raised data for African emerging markets.

ADF Results from Asian emerging markets

Variables	ADF-T-stat	P-value	Interpretation
GDP per capita	-4.42439	0.001944	Reject null hypothesis no unit root
Human Capital Index	-4.61713	0.000918	Reject null hypothesis no unit root
IPOs capital raised	-5.958	1.467	Do not reject null hypothesis

Source: Gretl software

ADF results in African emerging markets

Variables	ADF-T-stat	P-value	Interpretation
GDP per capita	-3.62434	0.02776	Reject null hypothesis no unit root
Human Capital Index	-4.46619	0.001658	Reject null hypothesis no unit root
IPOs capital raised	-5.88043	0.001062	Reject null hypothesis no unit root

Source: Gretl software

4.4. Descriptive statistics- African emerging markets

The annual data covering a period from the year 2000 to 2018 is used in this study, and it yielded 19 data points for each of the three variables. The GDP per capita and Human capital index was transformed using the first differences resulting in two data points being lost. Only 17 data points were remaining. IPOs capital raised was differenced once losing one data point remaining with 18 data points. GDP per capita had a minimum of -264.60 and a maximum of 232.45 throughout the analysis and a mean of 3.2350. GDP per capita has a negative skewness of -0.024845, as can be seen from the table below. HCI scale had a minimum of -0.008333 and a maximum of 0.011667 throughout the analysis with a mean of 0.00045098. HCI scale is positively skewed at 0.53772. IPOs capital raised had a minimum of -0.24393 and a maximum of 0.23501 throughout analysis with a mean of 0.010556. IPOs capital raised is positively skewed at 0.14258. Below is a table of the results of the full statistics drawn from Gretl software for the data series representing the variables used in this study:

Table 8 African emerging markets-full statistic summary *Statistics, using the observations 2000 – 2018.*

Variable	Mean	Median	Minimum	Maximum
GDP per capita PPP current in	3.2350	21.552	-264.60	232.45
Human capital index HCI scale	0.00045098	0.00066667	-0.0083333	0.011667
IPOs Capital raised	0.010556	-0.0067389	-0.24393	0.23501
Variable	**Std. Dev.**	**CV.**	**Skewness**	**Ex. kurtosis**
GDP per capita PPP current in	129.34	39.983	-0.024845	-0.23949
Human capital index HCI scale	0.0044580	9.8852	0.53772	1.0606
IPOs Capital raised	0.11225	10.634	0.14258	0.82299
Variable	**5% Perc.**	**95% Perc.**	**IQ range**	**Missing obs.**
GDP per capita PPP current in	undefined	undefined	176.79	2
Human capital index HCI scale	undefined	undefined	0.0048333	2
IPOs Capital raised	undefined	undefined	0.095871	1

Source: Gretl software

The skewness in the sample for the variables chosen is between -0.024845 and 0.53772, while the kurtosis is between -0.23949 and 1.0606. The skewness is close to zero, which assumes a normal distribution on the dataset. The kurtosis has both light and heavy tails away from the ideal kurtosis of 3.

4.5. Model 1 results of African emerging markets

An OLS model was used on Gretl software as specified in the methodology using the time series data from 2000 to 2018. The model was used both in the African emerging markets and the Asian emerging markets. The model seeks to evaluate a relationship between the credit to the private sector as a dependant variable and the GDP per capita, Human capital index and IPOs capital raised as independent or explanatory variables.

Below are the results of the multiple regression model for Africa's data series for the selected variables:

Table 9 Africa-model results

Model 1: OLS, using observations 2002-2018 (T = 17)
Dependent variable: Domestic credit to the private sector

	Coefficient	***Std. Error***	***t-ratio***	***p-value***	
const	58.2987	2.13132	27.35	<0.0001	***
IPOs Capital raised	−14.8938	14.2290	−1.047	0.3143	
GDP per capita PPP current in	−0.000739250	0.0114873	−0.06435	0.9497	
Human capital index HCI scale	−530.750	324.964	−1.633	0.1264	

Mean dependent var	56.29797	SD dependent var	5.401888	
Sum squared resid	355.6829	SE of regression	5.230700	
R-squared	0.238181	Adjusted R-squared	0.062377	
F(3, 13)	1.354807	P-value(F)	0.299940	
Log-likelihood	−49.96898	Akaike criterion	107.9380	
Schwarz criterion	111.2708	Hannan-Quinn	108.2692	
Rho	0.621287	Durbin-Watson	0.640988	

Source: Gretl software

For Africa results, the IPOs capital raised, which is a proxy for the level of investment banking, is statistically insignificant at a p-value 0.3143. In comparison, the GDP per capita PPP and Human capital index are also statistically insignificant, with p-values of 0.9497 and 0.1264, respectively. The R-squared and adjusted R-squared are at 24% and 6%, respectively. The low R-

squared and adjusted R-squared reflect the low explanatory power of the African emerging markets' variables based on the data series obtained. The coefficients for all three explanatory variables are negative. Based on the above results from the model on African emerging markets, there seems to be no relationship between financial development level as denoted by the credit level to the private sector and the three explanatory variables. Based on these results, a percentage increase in any of the explanatory variables results in a decrease in the dependant variable.

4.6. Descriptive statistics-Asian emerging markets

GDP per capita had a minimum of -871.30 and a maximum of 1470.1 for the analysis period. GDP per capita had a mean of 59.977. The Human Capital Index had a minimum of -0.0056667, a maximum of 0.0066667, and a mean value of -7.843. While IPOs raised had a minimum of -0.61535 and a maximum of 0.34887. The mean value for IPOs capital raised was -0.037637.

Below are the results of the full statistics for the Asian emerging market data series Gretl software for the period 2000 to 2018:

Table 10- Full statistics- Asian emerging markets

Summary Statistics, using the observations 2000 – 2018

Variable	Mean	Median	Minimum	Maximum
GDP per capita PPP current in	59.977	7.6919	-871.30	1470.1
Human capital index HCI scale	-7.8431e-005	-0.00033333	-0.0056667	0.0066667
IPOs Capital raised	-0.037637	0.00000	-0.61535	0.34887
Variable	**Std. Dev.**	**CV.**	**Skewness**	**Ex. Kurtosis**
GDP per capita PPP current in	517.06	8.6209	0.80281	1.6316
Human capital index HCI scale	0.0028322	36.110	0.38836	0.48094
IPOs Capital raised	0.22764	6.0482	-0.55994	0.66712
Variable	**5% Perc.**	**95% Perc.**	**IQ range**	**Missing obs.**
GDP per capita PPP current in	undefined	undefined	616.15	2
Human capital index HCI scale	undefined	undefined	0.0038333	2
IPOs Capital raised	undefined	undefined	0.29498	1

Source: Gretl software

Asian emerging market skewness is between –0.55994 and 0.80281, which around zero, and normal distribution can be assumed. The kurtosis is between 0.48094 and 1.6316, and this is away from the norm of nearly 4.

4.7. Model 2 results- Asia emerging markets

Below are the results of the multiple regression model for the Asian emerging market data series:

Table 11- Model results-Asia emerging markets

Model 1: OLS, using observations 2001-2018 (T = 18)
Dependent variable: Domestic credit to the private sector

	Coefficient	***Std. Error***	***t-ratio***	***p-value***	
const	128.121	6.49671	19.72	<0.0001	***
GDP per capita PPP current in	0.0143834	0.00453821	3.169	0.0068	***
Human capital index HCI scale	−2882.44	683.219	−4.219	0.0009	***
IPOs Capital raised	8.07362	8.39736	0.9614	0.3526	

Mean dependent var	124.8342	SD dependent var	10.72532
Sum squared resid	633.5972	SE of regression	6.727328
R-squared	0.676001	Adjusted R-squared	0.606573
F(3, 14)	9.736669	P-value(F)	0.000997
Log-likelihood	−57.59027	Akaike criterion	123.1805
Schwarz criterion	126.7420	Hannan-Quinn	123.6716
Rho	0.351833	Durbin-Watson	1.175134

Source: Gretl software

The R-squared and the adjusted R-squared are 68% and 61%, indicating that the explanatory variables have explanatory power over the dependant variable. For the Asia results, IPOs capital raised is statistically insignificant at a p-value of 0.3526. GDP per capita PPP is statistically significant at a p-value of 0.0068, and the Human capital index is statistically significant at a p-value of 0.0009. Based on the model results above, there is a relationship between the dependant variable and the two other explanatory variables: GDP per capita and Human capital index. While there is no relationship, be the dependant variable and the IPOs capital raised. Therefore, it can be concluded that there is no relationship between the level of investment banking and financial development.

4.8. Conclusion of the chapter

The chapter captured all the results of the multiple regression model and the statistical analysis of the data. The data relating to IPOs capital raised for South Africa were obtained from the Johannesburg Stock Exchange. Based on the model results, the p-values for the variables chosen were statistically insignificant for all the African countries in the sample.

Hypothesis 1. There is a positive relationship between the level of financial development and the level of investment banking. The results of the African emerging market data and the Asian emerging market data were statistically insignificant. Therefore, the hypothesis is rejected, and there is no relationship between investment banking and financial development.

Hypothesis 2. There is a positive relationship between the level of financial development and economic development in a country. This hypothesis results were statistically insignificant for all African countries, and the hypothesis is rejected while it was statistically significant for Asian emerging markets. Therefore the hypothesis is not rejected for Asian emerging markets, and there is a relationship between financial development and the level of economic development in a country.

Hypothesis 3. There is a positive relationship between the level of financial development and education level in a country. The hypothesis testing results were statistically insignificant for all African countries, and the hypothesis is rejected. The Asian emerging markets model results were statistically significant. Therefore, the hypothesis is not rejected; indeed, there is a positive relationship between financial development and education level in a particular country.

CHAPTER 5: Conclusion and Way forward

5. Introduction

This chapter provides the literature review findings and the analysis results based on the OLS model results for different countries. Furthermore, it outlines the study's implications and points to suggestions for future research.

5.1 Literature review

Literature review uncovered that Africa is lagging in terms of financial systems. The financial systems of African economies are either small or underdeveloped, and a vast majority of people remain unbanked stock exchanges and capital markets are tiny. The resultant problem emanating from the size and state is that of lack of access to credit. The African situation remains despite the progress that has been made from financial reforms and policy development perspective. Meanwhile, emerging market economies, especially in Asian markets, have improved significantly and participated meaningfully in global markets as reflected by the capital raised through their IPOs.

5.2 Hypothesis results testing

Hypothesis 1. There is a positive relationship between the level of financial development and the level of investment banking. The results of the African emerging market data and the Asian emerging market data were statistically insignificant. Therefore, the hypothesis is rejected and there is no relationship between investment banking and financial development.

Hypothesis 2. There is a positive relationship between the level of financial development and economic development in a country. This hypothesis results were statistically insignificant for all African countries, and the hypothesis is rejected while it was statistically significant for Asian emerging markets. Therefore the hypothesis is not rejected for Asian emerging markets, and there is a relationship between financial development and the level of economic development in a country.

Hypothesis 3. There is a positive relationship between the level of financial development and education level in a country. The hypothesis testing results were statistically insignificant for all African countries, and the hypothesis is rejected. The Asian emerging markets model results were statistically significant. Therefore, the hypothesis is not rejected; indeed, there is a positive relationship between financial development and education level in a particular country.

5.3 Implications of the study

This section deals with the implications and recommendations for the governments as policymakers, the investment banking community, both the banks and the companies that utilize the services of investment bankers, and the academia for future research. These are solely based on the results of this study.

5.3.1 Government

Governments should continue to concern themselves with creating and maintaining a conducive and supportive environment for entrepreneurship to thrive, thus facilitating economic growth. Based on this study, the government should continue to focus on entrepreneurial education and training initiatives, as education's relationship with financial development is supported by this study. The government is also encouraged to increase the support for industries that are performing well through the encouragement of investment banking, either by institutions of government or development of new investment banks, and to determine why other industries are not doing well. Support for investment banking and efforts to increase capital allocation might lead to more jobs being created, reduced trade deficit, and improved economic growth.

5.3.2 Investment banks

This study's results will be useful to investment banks, especially related to the literature review outcomes. There is a need for greater roleplaying by investment banks providing capital and necessary technical skills for business to thrive in Africa. The investment banks in Africa must grow. Perhaps new entrances enter the space to contribute to financial development and, ultimately, economic growth and more jobs being created so that Africa can be lifted out of poverty and underdevelopment.

5.3.3 Academia

There is, forever, a need for new knowledge in the ever-changing world. To that extent, this study's results can be challenged, improved, or confirmed, depending on the circumstances and context. Different samples and sample sizes for different economies can produce different results. Academics, therefore, can apply the methodologies in a different set of data and economies. There is a greater need for research in this field to form a substantial body of work for Africa to grow its financial development and economic growth. Data is very critical, and a lack of credible data hampers research in this field.

5.4 Further research & conclusion

The study was set out to investigate and explain the relationship between investment banking and financial development in African emerging markets and the Asia Pacific counterparts. The objectives of the study were achieved even though from the data used the relationship between the investment banking and financial development was found to be statistically insignificant from the parts of the literature review it is clear that there is a positive relationship between the two. The model results could be influenced by the small data points of 19 in the sample used. It is possible that with larger data points the results could be different. There are possible areas of future research identified by this study namely:

- A cross sectional data on investment banking comparing African countries to developed countries.
- Understanding the contributors to Africa's low levels of financial development.
- Investigate the government role in Africa in fostering investment banking and financial development.

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7. Annexure A

Country	Rank	Bank name	Total Assets (USD Billion) 06/2017	Market Capitalisation (USD Billion)	Country GDP(USD Billion)	Total Assets to GDP	Market Cap to GDP
South Africa	1.	Standard Bank Group	149.3894	23.9129	348872	0.0428%	0.0069%
	2.	FirstRand Ltd	93.1683	21.3926	348872	0.0267%	0.0061%
	3.	Barclays Africa Group	87.0604	N/A	348872	0.0250%	0.0000%
	4.	Nedbank Group	73.8967	9.4366	348872	0.0212%	0.0027%
	5.	Absa Bank	71.6682	11.8050	348872	0.0205%	0.0034%
	6.	Investec Bank Ltd	32.5698	4.4132	348872	0.0093%	0.0013%
Total			**507.7529**	**70.9602**	**348872**	**0.1455%**	**0.0203%**
Country	**Rank**	**Bank Name**	**Total Assets (USD Billion 06/2017)**	**Market Capitalisation (USD $ Billion 03/2017)**	**Country GDP(USD Billion)**	**Total Assets to GDP**	**Market Cap to GDP**
Nigeria	1.	Zenith Bank	15.7822	1.4863	375770	0.0042%	0.0004%
	2.	FBN Holdings	15.6339	0.3438	375770	0.0042%	0.0001%
	3.	United Bank for Africa	11.8199	0.0251	375770	0.0031%	0.0000%
	4.	Access Bank Group	11.0664	0.6199	375770	0.0029%	0.0002%
	5.	Guaranty Trust Bank	10.3528	N/A	375770	0.0028%	0.0000%
	6.	Diamond Bank Nigeria	6.6165	0.0601	375770	0.0018%	0.0000%
Total			**71.2717**	**2.5351**	**375770**	**0.0190%**	**0.0007%**

Country	Rank	Bank Name	Total Assets (USD Billion 12/2015)	Market Capitalisation (USD million 06/2019)	Country GDP (USD Billion)	Total Assets to GDP	Market Cap to GDP
Ghana	1.	Ecobank Ghana Ltd	1.7518	0.4787	58996	0.0030%	0.0008%
	2.	GCB Bank Ltd	1.2196	0.2483	58996	0.0021%	0.0004%
	3.	Fidelity Bank Ghana	1.0704	N/A	58996	0.0018%	0.0000%
	4.	UniBank Ghana	1.0029	N/A	58996	0.0017%	0.0000%
	5.	Barclays Bank of Ghana	0.9453	N/A	58996	0.0016%	0.0000%
	6.	CAL Bank	0.8809	0.0930	58996	0.0015%	0.0002%
Total			**6.8709**	**0.8200**	**58996**	**0.0116%**	**0.0014%**
Country	**Rank**	**Bank Name**	**Total Assets (USD Billion 06/2017)**	**Market Capitalisation (USD) Billion June 2019)**	**Country GDP(USD Billion)**	**Total Assets to GDP**	**Market Cap to GDP**
China	1.	Industrial and Commercial Bank of China	3764.2700	345.2140	12237782	0.0308%	0.0028%
	2.	China Construction Bank	3200.3800	257.3990	12237782	0.0262%	0.0021%
	3.	Agricultural Bank of China	3035.3700	203.2440	12237782	0.0248%	0.0017%
	4.	Bank of China	2866.0500	181.4690	12237782	0.0234%	0.0015%
	5.	China Development Bank	2080.2700	N/A	12237782	0.0170%	0.0000%
	6.	Bank of communications	1317.6300	67.0780	12237782	0.0108%	0.0005%
Total			**16263.9700**	**1054.4040**	**12237782**	**0.1329%**	**0.0086%**

Country	Rank	Bank Name	Total Assets (USD Billion 06/2017)	Market Capitalisation (USD Billion 02/2019)	Country GDP(USD Billion)	Total Assets to GDP	Market Cap to GDP
Malaysia	1.	Malayan Banking Berhad (MayBank)	149.2541	25.7000	314500	0.0475%	0.0082%
	2.	CIMB Group Holdings	96.5399	13.4000	314500	0.0307%	0.0043%
	3.	Public Bank	80.5879	23.8000	314500	0.0256%	0.0076%
	4.	RHB Capital	51.1315	5.5000	314500	0.0163%	0.0017%
	5.	Hong Leong Financial Group	45.4252	11.2000	314500	0.0144%	0.0036%
	6.	AMMB Holdings	30.3501	N/A	314500	0.0097%	0.0000%
Total			**453.2886**	**79.6000**	**314,500**	**0.1441%**	**0.0000%**

Country	Rank	Bank Name	Total Assets (USD) Billion 06/2017)	Market Capitalisation (USD) Billion 02/2019	Country GDP(USD) Billion)	Total Assets to GDP	Market Cap to GDP
South Korea	1.	KB Financial Group	0.3686	17.1000	1530751	0.0000%	0.0011%
	2.	Shinhan Financial Group	0.3613	18.4000	1530751	0.0000%	0.0012%
	3.	Hong Hyup Financial Group	0.3331	N/A	1530751	0.0000%	0.0000%
	4.	Hana Financial Group	0.3047	10.7000	1530751	0.0000%	0.0007%
	5.	Woori Bank	0.2759	9.8000	1530751	0.0000%	0.0006%
	6.	Industrial Bank of Korea	0.2248	7.1000	1530751	0.0000%	0.0005%
Total			**1.8685**	**63.1000**	**1,530,751**	**0.0001%**	**0.0041%**

8. Appendix B

Top 12 stock exchanges

By number of IPOs

Ranking	Stock exchanges*	Number of IPOs	% of global IPOs
1	Hong Kong (HKEx) and GEM	197	14.5
2	National (NSE and SME) and Bombay (BSE and SME)	161	11.8
3	NASDAQ	142	10.4
4	Tokyo (TSE), MOTHERS and JASDAQ	96	7.1
5	Australia (ASX)	85	6.3
6	New York (NYSE)	63	4.6
7	Korea (KRX and KOSDAQ)	62	4.6
8	Shanghai (SSE)	59	4.3
9	NASDAQ OMX and First North	55	4.0
10	Indonesia (IDX)	53	3.9
11	London (Main and AIM)	51	3.8
12	Shenzhen (SZSE and Chinext)	46	3.4
	Other stock exchanges (46)	289	21.3
	Global IPO activity	**1,359**	**100.0**

By proceeds

Ranking	Stock exchanges*	US$b	% of global IPOs
1	Hong Kong (HKEx) and GEM	35.4	17.3
2	New York (NYSE)	29.7	14.5
3	Tokyo (TSE), MOTHERS and JASDAQ	26.4	12.9
4	NASDAQ	23.1	11.3
5	Deutsche Börse (Main and Scale)	13.6	6.6
6	Shanghai (SSE)	13.6	6.6
7	London (Main and AIM)	8.5	4.1
8	Shenzhen (SZSE and Chinext)	7.6	3.7
9	National (NSE and SME) and Bombay (BSE and SME)	5.5	2.7
10	Australia (ASX)	5.0	2.4
11	Euronext and Alternext	4.1	2.0
12	NASDAQ OMX and First North	3.6	1.8
	Other stock exchanges (46)	28.7	14.0
	Global IPO activity	**204.8**	**100.0**

Ranking	Stock exchanges*	Number of IPOs	% of global IPOs
1	Shenzhen (SZSE and Chinext)	222	13.0
2	Shanghai (SSE)	214	12.5
3	National (NSE and SME) and Bombay (BSE and SME)	171	10.0
4	Hong Kong (HKEx and GEM)	159	9.3
5	NASDAQ	109	6.3
6	Australia (ASX)	96	5.6
7	Tokyo (TSE), MOTHERS and JASDAQ	90	5.3
8	NASDAQ OMX and First North	86	5.0
9	London (Main and AIM)	78	4.6
10	New York (NYSE)	71	4.1
11	Korea (KRX+KOSDAQ)	56	3.3
12	Thailand (SET+MAI)	44	2.6
	Other stock exchanges (53 exchanges)	318	18.6
	Global IPO activity	**1,714**	**100.0**

Ranking	Stock exchanges*	US$b	% of global IPOs
1	New York (NYSE)	30.1	15.7
2	Shanghai (SSE)	20.3	10.5
3	Hong Kong (HKEx) and GEM	16.1	8.4
4	London (Main and AIM)	14.8	7.7
5	Shenzhen (SZSE and Chinext)	13.7	7.1
6	National (NSE and SME) and Bombay (BSE and SME)	11.7	6.1
7	NASDAQ	10.3	5.3
8	Korea (KRX and KOSDAQ)	6.8	3.5
9	Tokyo (TSE), MOTHERS and JASDAQ	6.1	3.2
10	Sao Paulo (BM&F BOVESPA)	5.7	3.0
11	NASDAQ OMX and First North	4.9	2.6
12	SIX Swiss Exchange	4.6	2.4
	Other stock exchanges (53 exchanges)	47.2	24.6
	Global IPO activity	**192.3**	**100.0**

*Data based on domicile of the exchange, regardless of the listed company domicile. Euronext includes Amsterdam, Paris, Brussels and Lisbon; Shenzhen (SZSE) includes the Main Board, SME Board and ChiNext.

9. Appendix C

Regional IPO facts and figures: Americas

	Year to date comparison				Quarterly comparison					
Regions/country*	IPOs YTD	Change YOY%	Proceeds US$b YTD	Change YOY%	IPOs current quarter: Q4 2018	Change QOQ% (vs Q4 17)	Change previous quarter% (vs Q3 18)	Proceeds US$b current quarter: Q4 2018	Change QOQ% (vs Q4 17)	Change previous quarter% (vs Q4 18)
US	205	14%	52.8	31%	38	-37%	-32%	8.0	-36%	-36%
Canada[1]	38	31%	1.3	-55%	17	55%	240%	0.3	-61%	144%
Brazil[2]	3	-70%	2.0	-65%	0	-100%	NA	0.0	-100%	NA
Mexico	6	20%	3.2	24%	0	-100%	-100%	0.0	-100%	-100%
Jamaica	6	100%	0.1	1747%	1	NA	-67%	0.1	NA	26%
Chile[3]	2	0%	0.6	87%	0	NA	NA	0.0	NA	-100%
Trinidad & Tobago[4]	1	NA	0.0	NA	1	NA	NA	0.0	NA	NA
Americas	**261**	**14%**	**60.0**	**16%**	**57**	**-24%**	**-14%**	**8.4**	**-49%**	**-37%**

1. In 2018 , there were 17 IPOs raising US$1.1b on Toronto Stock Exchange and TSX Venture Exchange. There were also 21 IPOs on Canadian Securities Exchange that raised US$122m altogether – these listings were excluded on page 8. In Q4 2018, there were 5 IPOs raising US$235m on Toronto Stock Exchange and TSX Venture Exchange, while there were also 12 IPOs on Canadian Securities Exchange that raised US$27m altogether.
2. In Q3 2018 and Q4 2018, there were no IPOs on Brazil's B3 exchange.
3. In 2018, there were two IPOs on Chile's Santiago Stock Exchange which raised US$635m whereas in YTD 2017, there were two IPOs which raised US$339m. In Q2 2018, there were no IPOs on Santiago Stock Exchange.
4. In 2017 and 2018, there were no IPOs on Argentina's Buneos Aires Stock Exchange. There were 2 IPOs by Argentinean companies in 2017. one of the IPOs were dual listed on New York Stock Exchange and Buneos Aires Stock Exchange, while the other IPO was listed on New York Stock Exchange. In YTD 2018, there were 2 IPOs by Argentinean companies, both were dual listed on New York Stock Exchange.

10. Appendix D

Financial depth and efficiency for the latter part of the sample period.
Source: World Bank World Development Indicators, 2008 and Beck et al. (2008).

	Bank liquid reserves to bank assets ratio		Domestic credit provided by banking sector (% of GDP)		Domestic credit to private sector (% of GDP)		Interest rate spread (lending rate minus deposit rate)		Liquid liabilities (M3) as % of GDP		Money and quasi money (M2) as % of GDP		Quasi-liquid liabilities (% of GDP)		Bank concentration	
	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005	1995	2005
Benin	13.5	15.7	5.4	16.2	6.6	17.3	N.A.	N.A.	23.2	20.4	24.9	25.1	8.6	8.2	1.00	0.90
Burkina Faso	7.7	7.6	16.0	35.1	17.6	20.8	N.A.	N.A.	19.8	27.9	21.0	20.9	5.8	7.5	1.00	0.55
Burundi	3.0	12.3	16.0	35.1	17.6	20.8	N.A.	N.A.	19.8	27.9	20.9	25.9	4.3	7.6	N.A.	N.A.
Cameroon	5.6	28.7	19.2	12.4	9.0	9.4	10.5	12.8	15.7	17.0	16.2	16.7	8.0	7.7	1.00	0.57
CAR[a]	5.4	12.3	11.3	17.5	4.1	6.7	10.5	12.8	21.5	17.8	21.0	16.5	1.6	2.0	N.A.	N.A.
Chad	21.0	18.1	9.9	7.5	3.9	3.1	10.5	12.8	12.9	8.6	10.8	7.6	1.1	0.6	N.A.	N.A.
Congo, Rep.	5.1	76.7	17.3	1.5	8.1	2.9	10.5	12.8	15.1	17.1	15.1	14.8	2.3	2.3	1.00	0.68
Cote d'Ivoire	3.8	9.0	28.0	18.2	18.5	13.8	N.A.	N.A.	26.0	24.1	24.0	23.3	8.8	7.9	1.00	0.77
Egypt	15.5	21.8	81.8	105.5	37.0	52.4	5.6	5.9	82.9	106.9	76.2	92.4	59.4	72.4	0.59	0.62
Gabon	6.7	20.0	18.3	10.4	7.9	8.9	10.5	12.8	14.5	19.8	13.8	17.6	5.7	7.3	1.00	0.99
Gambia	18.8	20.7	7.7	23.7	10.0	13.0	12.5	17.6	25.1	46.6	23.5	43.9	12.2	21.4	18.8	1.00
Kenya	N.A.	9.9	52.7	38.4	34.5	25.9	15.2	7.8	50.9	40.3	42.2	38.9	36.6	20.9	58.1	43.6
Madagascar	17.2	20.1	18.6	12.9	11.6	9.9	19.0	8.3	21.5	20.1	18.1	19.9	5.8	6.1	1.00	0.89
Malawi	47.7	22.5	14.6	22.1	6.5	10.5	10.1	22.2	21.2	27.8	15.9	20.5	9.1	9.2	0.95	0.97
Niger	11.1	15.6	8.7	10.7	4.5	6.8	N.A.	N.A.	14.3	13.8	14.0	13.4	3.6	3.1	0.97	0.81
Nigeria	19.9	16.7	24.0	9.0	10.2	14.9	6.7	7.4	16.1	20.3	14.8	18.8	5.6	8.4	0.65	0.44
Senegal	6.3	13.6	24.1	23.1	16.0	23.8	N.A.	N.A.	22.4	35.7	21.7	34.3	8.3	13.5	0.92	0.64
Sierra Leone	9.2	10.9	64.8	24.9	2.7	4.5	21.8	13.5	10.1	20.6	9.3	18.1	2.5	8.5	N.A.	N.A.
South Africa	2.9	2.8	139.6	184.6	119.3	143.5	4.4	4.6	50.0	45.5	46.6	56.4	29.6	39.1	0.94	0.92
Sudan	25.4	17.7	11.1	12.7	3.1	10.0	N.A.	N.A.	16.5	20.5	13.1	17.4	6.8	8.4	0.75	0.85
Togo	6.4	8.1	26.0	17.2	20.1	16.8	N.A.	N.A.	30.6	27.0	27.8	26.7	10.5	10.9	N.A.	0.84
Zambia	NA	NA	52.3	55.3	33.8	15.8	8.8	144.6	45.1	48.9	26.8	45.4	26.8	14.1	80.6	57.2

N.A. = not available.
[a] CAR = Central African Republic.