VALUATION OF BANKS IN EMERGING MARKETS: AN EXPLORATORY STUDY

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ABSTRACT

Practitioners and academics in emerging markets are yet to agree on how best they can value companies in emerging markets. In contrast, academics and practitioners in developed markets seem to agree on mainstream valuation practices (Bruner, Eades, Harris and Haggins, 1998; Graham and Harvey, 2001). This study was therefore aimed at achieving such consensus with particular attention being paid to the emerging market banks. Emerging market banks are by no means small and are growing fast. Furthermore, these banks are currently involved in lots of cutting age economic activities such as mergers and acquisitions (M&A), joint ventures and strategic alliances which require sound valuation practices that are based on empirical evidence.

The primary purpose of this research was to establish consensus of opinion among experts with regard to the valuation of banks in emerging markets. To achieve the purpose of this study the Delphi technique, which is a structured survey method that relies on a panel of experts to answer questionnaires in two or more Delphi rounds, was used to gather data and develop consensus among experts (Kalaian and Kasim, 2012).

The main findings in this study pertain to aspects concerning the type of analysis considered by experts when analysing the performance of banks, how experts compare the discounted cash flow (DCF) approach to multiples valuation approach, the challenges encountered by experts when valuing banks in emerging markets, and how experts compute the cost of capital for banks in emerging markets.

The main findings of this study can be summarised as follows:

- When analyzing the performance of banks, it is essential to conduct a bank-specific, industry and macroeconomic analysis;
- When estimating the future performance of banks, the time series analysis and an explicit forecast period of between 4-10 years may be used;
- When estimating the terminal value for banks in emerging markets, the perpetuity with growth is used;

- When computing the value for banks, the DCF valuation approach (equity DCF and DDM valuation models) are used as primary valuation methods and the relative valuation approach (P/E and P/BV ratio) are used as secondary valuation methods;
- The DCF valuation approach is considered as more accurate and popular when valuing banks in emerging markets; and
- When estimating the cost of equity, the capital asset pricing model (CAPM) is used.

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DEDICATION

This thesis is dedicated to my late mum, Noami Tsokonombwe for her loving support throughout the years.

May her soul continue to rest in eternal peace.

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CHAPTER ONE
INTRODUCTION, BACKGROUND AND PURPOSE

1.1 INTRODUCTION

This study is on the subject of valuation of banks in emerging markets. Valuation, which is considered to be at the centre of financial theory, can be defined as the process of estimating how much an asset is worth (Damodaran, 2006: 2). According to Damodaran (2012: 9), knowing what an asset is worth and what determines that value is a pre-requisite for intelligent decision making which includes selecting portfolios for investments, deciding on the suitable price to pay or receive in a takeover and making investment, financing and dividend choices when running a business. According to Titman and Martin (2011: 1) valuation is considered to be both a science and an art. The science takes the form of quantitative risk-return models and the art includes experience and judgement on the part of the appraiser (Damodaran, 2012: 2).

Analysts use a wide range of valuation approaches ranging from simple to sophisticated ones, depending on the available information (Damodaran, 2006: 3). Traditional valuation approaches include the discounted cash flow (DCF) valuation approach (income valuation), which relates the value of an asset to the present value of the expected future cash flows (Damodaran, 2006: 3), and the multiples or relative approach (market valuation), which relates the value of an asset to the price of 'comparable' assets relative to a common variable such as earnings, cash flows, book value or sales (Reilly and Brown, 2012: 318). Other valuation approaches include those of liquidation and accounting valuation and the contingent claim valuation (Damodaran, 2006: 3). The key assumptions underlying these valuation approaches are what make their application challenging when they are applied in emerging markets (Nkala, 2012: 15).

The remainder of this chapter is organised as follows. Section 1.2 provides a detailed discussion on valuation in emerging markets. Section 1.3 presents a discussion on valuation of banks. Section 1.4 gives an overview of emerging market banks. Section 1.5 outlines the purpose of this study. Section 1.6 defines the key terms of this study. Section 1.7 describes

the research design and methodology of this study. Section 1.8 outlines the scope and delimitation of this study. Section 1.9 presents the plan of the whole study.

1.2 VALUATION IN EMERGING MARKETS

Industry practitioners and academics in emerging markets are yet to agree on how best they can value companies (Pereiro, 2002a: vii; Koller, Goedhart, and Wessels, 2010: 713). According to Pereiro (2002a: vii), the lack of agreement among practitioners and academics is focused on issues such as how accurate the income approach is compared to the market approach, which risk-free and market risk parameter should be used, or how cost of capital should be determined in emerging markets. In contrast, academics and practitioners in developed markets seem to agree on mainstream valuation practices (Bruner *et al.* 1998: 1; Graham and Harvey, 2001: 1). One of the aims of this study is to assist in the development of common valuation practices in emerging markets.

Gimpel (2010: 2) indicates that valuation in emerging markets is challenging because most of the common valuation models have been imported from developed markets as 'best practices' by practitioners with limited attention paid to their application in emerging markets. Furthermore, Koller *et al.* (2010: 713) suggests that valuation in emerging markets is typically more difficult because of various risks and possible obstacles faced by companies, such as lack of transparency in the financial system, low capital and investment liquidity, poor corporate governance, high transaction costs and high asset price and returns volatility. These supplementary risks in emerging markets warrant careful consideration, especially in the application of the valuation approaches (Bruner, Conroy, Estrada, Kritzman and Li (2002: 311).

Valuation in emerging markets has recently become topical among academics and practitioners given the recent financial activities that have seen emerging markets opening up their doors to Foreign Direct Investments (FDI) and foreign trade (Bruner *et al.* 2002: 311; Koller *et al*. 2010: 713). Furthermore mergers and acquisitions (M&A), joint ventures and strategic alliances have also been on the rise between entities in developed and emerging markets (Koller *et al.* 2010: 713). All these economic activities have raised the demand for sound valuation approaches among practitioners and academics in emerging markets.

1.3 VALUATION OF BANKS

The valuation of banks has always been challenging, but the 2008 global financial crisis seems to have elevated the concern to the top of the list of valuation issues (Damodaran, 2009: 1). According to Koller *et al.* (2010: 765), "Banks are among the most complex businesses to value, especially from the outside in. Published accounts give an overview of a bank's performance, but the clarity of the picture they present depends largely on accounting decisions made by management. External analysts must therefore make a judgment about the appropriateness of those decisions. Even if that judgment is favorable, analysts are still bound to lack vital information about the bank's economics, such as the extent of its credit losses or any mismatch between its assets and liabilities, forcing them to fall back on rough estimates for their valuation. Moreover, banks are highly levered, making bank valuations even more contingent on changing economic circumstances than valuations in other sectors. Finally, most banks are in fact multi-business companies, requiring separate analysis and valuation of their key business segments. So-called universal banks today engage in a wide range of businesses, including retail and wholesale banking, investment banking, and asset management. Yet separate accounts for the different businesses are rarely available."

In addition to the complexity of valuing banks, very little theoretical and methodological work is known with regard to how banks are valued since most of the standard valuation literature focuses on the valuation of industrial companies, especially in developed markets. For instance, Copeland, Koller and Murrin (2000); Koller *et al.* (2010) and Damodaran (2012), authors of most of the standard work on valuation, devoted only one chapter each to bank valuation.

Deev (2011: 33) defined bank valuation as an estimation of the bank's "market value in terms of money on a certain date, taking into account the factors of aggregate risk, time and income expectations". Hence the valuation of banks requires particular expertise in two important areas: an in-depth knowledge of the banking industry and the bank-specific characteristics of valuation, and a comprehensive understanding of the valuation approaches (Deev, 2011: 33). Valuation of banks is carried out by experts for different purposes and varying degrees of methodological accuracy of the estimates of the input factors (Horvatova, 2010: 50). Copeland *et al.* (2000) cited in Adams and Rudolf (2006: 4) indicated that the valuation of

banks is still one of the unsolved mysteries in financial theory. Furthermore, the recent 2008 global financial crisis raised bank valuation to the top of the list of valuation issues (Damodaran, 2009: 1).

Given the above discussion, the valuation of emerging market banks is especially suitable for investigation due to the critical role that banks play in the general economy of emerging markets. Furthermore, as suggested above, very little is known about these banks, especially with regard to their valuation. In order to generate a detailed understanding of this study, the following section provides an overview of emerging market banks.

1.4 OVERVIEW OF EMERGING MARKET BANKS

Van Horen (2012: 47) indicated that emerging markets banks are big and are continuously growing fast. Even though banks in emerging markets grew faster than developed market banks before 2008, the global financial crisis seem to have accelerated the trend resulting in a distinct shift from the developed markets to emerging markets (Pennington, 2010: 4). These banks are now well capitalised and large enough to compete with their international counterparts in developed markets. For instance, the world's largest bank with respect to market value is found in an emerging market, China, and the global top 25 of banks currently includes eight banks in emerging markets (Van Horen, 2012: 47). This list of eight emerging market banks includes three other Chinese banks, one Russian bank and three Brazilian banks. Given their current growth, India's banks are also expected to catch up with the top global banks (Pennington, 2010). According to Bloomberg data, "44% of the top 100 banks in the world are emerging banks; an increase from 21% and 30% in 2002 and 2007, respectively" (Skolkovo, 2011: 5).

The growth of assets among emerging market banks has also been impressive, with all the eight emerging banks in the top 75 banks worldwide, while all four Chinese banks are in the top 20 (Van Horen, 2012: 47). Furthermore, lower down in the global rankings is a list of small emerging market banks that when combined together represent a large portion of the market (Van Horen, 2012: 47).

According to Pennington (2010), emerging market banks present great potential because of the relatively immature development of their domestic financial markets. Chaia, Dalal, Goland, Gonzalez and Schiff (2010: 1) estimated that out of 2.5 billion people globally who do not use banks 2.2 billion live in Africa, Asia, Latin America and the Middle East. This offers great potential for emerging market banks.

Given the strong liquidity and high adequacy ratios, some analysts think that emerging market banks are in a stronger position than developed market banks (Pennington, 2010: 7). For instance, Chinese banks are starting to lend money to European companies for business transactions taking place in Europe.

Some emerging market banks have taken the challenge of opening up branches or subsidiaries overseas, which has helped them to generate income outside their domestic market (Van Horen, 2012: 48). For instance, Standard Bank of South Africa generated almost a quarter of its profits from branches outside their domestic market. This not only shows that do emerging market banks have the knowledge and expertise to undertake international operations but they can manage such operations (Van Horen, 2012: 48).

The main challenge of emerging market banks, as for all other companies, is to generate long-term sustainable success. They also need to understand their business activities, value drivers and how they are valued (Pennington, 2010: 6). Furthermore, it also shows the extent to which the banking industry is both a critical and susceptible part of the global economy (Koller *et al.* 2010: 766). Therefore it is important for "emerging markets to relearn how they can create and measure value especially if they are to protect themselves from future crisis" (Koller *et al.* 2010: 713).

Since there is no common practice with regard to valuation of banks, there is an opportunity to create, improve and adopt various valuation approaches to measure the value of banks (Horvatova, 2010: 50). Furthermore, the current investment flows and activities in emerging markets are large enough to warrant sound valuation practices that are not based on intuition only but also on empirical evidence. Better valuation practices may even enhance the inflow

of investments and allocation of resources, and in turn increase the social welfare of people in emerging markets (Bruner *et al.* 2002: 311).

1.5 PURPOSE OF RESEARCH

Against the background of valuation in emerging markets and valuation of banks provided from section 1.1 to 1.4, the primary purpose of this research is to establish consensus of opinion among experts with regard to the valuation of banks in emerging markets. To achieve the primary purpose of this study it was necessary to:

- Determine the type of analysis undertaken by expects when valuing banks in emerging markets;
- Determine the bank-specific, industry and macroeconomic factors considered by experts when valuing banks in emerging markets;
- Determine how experts compare the DCF to the relative valuation approach;
- Highlight some of the challenges encountered by experts when valuing banks in emerging markets; and
- Determine how experts compute the cost of equity for banks in emerging markets.

In achieving the purpose of this research, the following research questions were formulated:

- Which type of security analysis do experts undertake when predicting the performance of banks in emerging markets?
- Which macroeconomic, industry and bank-specific factors do experts considered when valuing banks in emerging market banks?
- How do experts compare the DCF with multiples valuation approach in relation to accuracy, popularity and manner of use?
- How do experts resolve some of the practical issues of the DCF model?
- Which variants of the DCF and multiples do experts use when valuing banks in emerging markets?
- What are some of the challenges encountered by experts when valuing banks in emerging markets?
- How do experts compute cost of equity for banks in emerging markets?

This study intends to contribute to a deeper understanding of valuation practices of banks in emerging markets. In essence this study aims to contribute to emerging market research in the field of bank valuation. Valuation of emerging market banks, in general, offers an ideal financial management research field because:

- Not much is known about valuation of banks (Adams and Rudolf, 2006: 4; Koller *et al.* 2010: 765; Horvatova, 2010: 50);
- Valuation of banks seems to be a topical issue after the recent 2008 global financial crisis (Damodaran, 2009: 1);
- There is no consensus among experts with regard to how companies in emerging markets should be valued (Pereiro, 2002a: vii; Koller *et al.* 2010: 713); and
- Current investment flows and activities in emerging markets are large enough to warrant sound valuation practices (Bruner *et al.* 2002: 311).

The findings of this research could be of interest to numerous stakeholders within the banking and financial services sector as well as potential investors, academics and government institutions, since they want to ensure high efficiency and development in the economy.

1.6 DEFINITION OF KEY TERMS

In order to provide greater understanding and clarity to the research design, the key terms which are central to this study are discussed below.

1.6.1 Emerging market

The term emerging market was coined in 1981 by economist Antoine W. Van Agtmael of the International Finance Corporation (IFC) of the World Bank in reference to countries whose level of wealth creation measured as gross national income (GNI) per capita falls below that of developed countries (Pereiro, 2002a: 2). Using the World Bank criteria, out of 206 countries, 155 countries are considered as emerging countries and the remaining 51 countries were considered developed (Pereiro, 2002a: 2). This definition is however not solely used as other leading institutions have also defined it differently as outlined below.

The Morgan Stanley Capital International (MSCI), a leading global provider of investment tools to investors, classifies countries into developed, frontier and emerging markets. Their

criteria of classification consist of economic development, size and liquidity requirements and the accessibility of markets (MSCI, 2013). According to MSCI classification criteria, as of 21 May 2013 there were 21 emerging market countries. Refer to Appendix A for an illustration of these countries.

The Standard & Poor's (S&P) Emerging Markets Database (EMDB) relates the term emerging market to equity markets that are in transition, meaning the equity markets are increasing in size, activity, or level of sophistication (S&P, 2011). Based on the S&P criterion, an equity market is considered as 'emerging' if it meets at least one of the following criteria:

- If the market has a low, lower-middle, or upper-middle-income economy as defined by the World Bank;
- If the market is characterised by a lack of transparency, lack of market depth (that is, few market participants), lack of market regulation, and operational inefficiency; and
- If the market has investable market capitalization that is low relative to its most recent GDP figures.

Refer to Appendix B for an illustration of S&P emerging markets.

The Financial Times and the London Stock Exchange (FTSE) Group classifies the world equity markets based on the development of the market infrastructure and national income (FTSE, 2012). The equity markets are classified into advanced emerging markets and secondary emerging markets. Countries are classified as advanced emerging markets if they have upper or lower middle GNI with advanced market infrastructure or high GNI with lesser developed infrastructure (FTSE, 2012). Secondary emerging markets are made up of countries with low income, lower middle, upper middle and high gross national income with reasonable market infrastructure or countries with upper middle gross national income with lesser developed market infrastructure (FTSE, 2012). Refer to Appendix C for the classification of emerging markets as of September 2012 by the FTSE group.

Mody (2004: 4) reported that the special characteristics of emerging markets which are supported by both popular perception and empirical evidence are a high level of volatility and transition in the economic, political, social and demographic arenas. Barry and Lockwood (1995: 15), Pereiro (2002a: 3), Fraser (2010: 4), Bruner *et al.* (2002: 312) and Mwenda (2000: 7) argued that emerging markets are characterised by excellent diversification opportunities, high average returns and high volatility. Generally, the term is defined by a number of variables that attempt to evaluate a stock market's relative level of development and or a nation's level of development (Nkala, 2012: 29). Furthermore, it is characterised by an environment that caters for the creation of a comfortable and attractive business environment suitable for conducting global business and international trade.

For the purpose of this study the term 'emerging markets' was defined using the definition of Nkala (2012) as "a country transitioning to a free market-oriented economy, with increasing economic freedom, gradual integration within the global marketplace, an expanding middle class, improving standards of living, social stability and tolerance, as well as an increase in cooperation with multilateral institutions".

1.6.2 Bank

The word 'bank' originated from the Italian word *banco* which was used when describing a desk or bench, covered by a green tablecloth, used several hundred years ago by Florentine bankers (Hull, 2012: 21). Universally they are defined as financial institutions that provide essential financial and banking services (Hull, 2012: 21). Their principal role is to allocate and receive deposits (Adams and Rudolf, 2006). Today most large banks are involved in both investment and commercial banking. Commercial banking involves mostly lending and deposit taking, while investment is concerned with assisting companies in raising debt or equity, and providing advice on mergers and acquisitions, major corporate restructuring, and other corporate finance decisions (Hull, 2012: 21). For the purpose of this study, both investment and commercial banks were considered.

1.7 RESEARCH DESIGN AND METHODOLOGY

To give effect to the purpose and research questions outlined in section 1.5 of this study, the data was collected using an online based questionnaire which was hosted by Lime survey, an

online survey service provider. The domain name for the online questionnaire was https://keith.limequery.com/. The questionnaire was generated after an extensive literature survey and was made up of a mixture of open and closed ended questions. Since the purpose of this study was to establish consensus, the Delphi technique, which is a structured survey method that relies on a panel of experts to answer questionnaires in two or more Delphi surveys, was used to gather data and develop consensus among experts. The Delphi survey is designed in such a way that after each round, the researcher provides an anonymous summary of experts' responses from the previous round to the panel of experts (Kalaian and Kasim, 2012: 7). As a result, it encourages experts to revise their earlier responses in light of the responses of other members of the panel. This allows for divergent opinions of participants to be refined and consensus of opinion which represents the views of the panel to be achieved (Kalaian and Kasim, 2012: 7).

For the purpose of this study, the Delphi technique was divided into three Delphi surveys. In the first Delphi survey, participants were asked to share their views on the information that was obtained from the literature search while at the same time providing additional information with regard to the subject matter. In the second Delphi survey, participants were required to rate their views based on the outcomes of the first Delphi on a five point Likert scale, while in the third and final Delphi survey, they were asked to review their individual opinions in light of the panel mean.

Purposive sampling, which refers to the selection of participants based on their expert ability to answer the research questions, rather than the general population (Fink and Kosecoff, 1985: 45) and snowball sampling methods were used to select experts who participated in this study. Statistical measures of central tendency such as mean, median and mode, levels of dispersion such as standard deviation and Spearman's rank correlation were calculated using Microsoft Excel. These statistical measures were used primarily for two reasons. Firstly, they helped to ensure that all experts' opinions were represented in the final data analysis, and secondly, they provided information about consensus of experts (Kalaian and Kasim (2012: 7).

Given the above information, an exploratory study approach together with a mixed methods research paradigm was adopted for the purposes of this study. A mixed methods research paradigm was considered because of the quantitative methods that were used to collect and analyse the data and the qualitative nature of the Delphi technique. A detailed explanation of the research design and methodology is provided in chapter four.

1.8 SCOPE AND DELIMITATIONS OF THE STUDY

The scope and delimitation of this study can be summarized as follows:

- The study was limited to experts who were directly involved in the valuation of banks in emerging markets or experts in developed markets following emerging market banks.
- It was fully appreciated that there could be different opinions regarding the subject matter but since this study only constitutes bank valuation experts for emerging market banks, it was likely that consensus could be achieved on the subject matter.
- Even though there are several valuation approaches that can be used to value banks, this study focused on the DCF and multiples valuation approach.
- It was assumed that experts answered all three Delphi questionnaires truthfully and independently.
- For the purpose of this study the term expert(s) was used synonymously with analyst(s).

1.9 PLAN OF STUDY

Chapter one introduced the topic of this study. The research purpose together with the definition of key terms, an overview of the research design and methodology, prior research, scope and delimitation of study and plan of study were presented.

Chapter two gives an over view of bank valuation. In particular, it describes the bank-specific characteristics of valuation and the bank valuation process.

Chapter three provides an overview of the valuation models. In particular, this chapter explains the theoretical background of the DCF and multiples valuation approaches and their application to bank valuation.

Chapter four outlines the research design and methodology of this research. In particular, the main research method being the Delphi technique, data collection method, data analysis, reliability and validity, ethical issues and challenges of the research are discussed are discussed.

Chapter five presents the findings and discussion of findings of this study. Specifically, it outlines the findings with regard to the subject matter and discussion of the findings in relation to the literature outlined in chapters two and three.

Chapter six provides a summary, conclusion and recommendation of this study.

The next chapter gives an overview of bank valuation

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CHAPTER TWO
OVERVIEW OF BANK VALUATION

2.1 INTRODUCTION

As discussed in section 1.3, bank valuation requires an in-depth understanding of the banking industry, bank-specific characteristics of valuation and valuation approaches. Furthermore, Damodaran (2012: 581) argued that even though banks are considered among some of the most complex businesses to value, the basic principles of valuation are applicable to banks. However, there are specific valuation characteristics relating to banks that could affect their valuation (Deev, 2011: 33). Proper definition of these aspects allows for the selection of the most appropriate approach to valuation (Deev, 2011: 33). This chapter highlights some of the most common bank-specific characteristics to valuation and provides an overview on how banks are valued.

This chapter is organised in the following manner. Section 2.2 discusses the bank-specific characteristics. Section 2.3 outlines and describes the bank valuation process. Section 2.4 provides a summary of the chapter.

2.2 BANK-SPECIFIC CHARACTERISTICS

The complexity of valuing banks discussed in section 1.3 stems from several reasons. Firstly, from outside-in point of view analysts conducting the valuation will always lack some important information about the bank's financials, such as asset-liability mismatches and the probability of credit losses (Copeland et *al.* 2000: 477; Koller *et al.* 2010: 765). As a result, analysts are left with no option but to rely on rough estimates and personal judgment where better estimates may have been made by individuals with inside information.

Adams and Rudolf (2006: 4) indicated that bank valuation starts with an understanding of the bank's business model, which sheds light on the sources of income, operating activities and cost structure of the bank. There is, however, a significant difference between the business models of banks and industrial companies (Damodaran, 2012: 582). Industrial companies raise their capital from equity investors and debt and use this money to make investments which allows them to make a profit. Therefore, when valuing these companies, the assets plus

equity owned by the company are valued together and then the market value of debt is deducted to get the value of equity (Damodaran, 2012: 584). In contrast to industrial companies, banks view debt as a source of capital and income. In other words, banks operate on both sides of their balance sheet, that is, deposits from customers or loans from the money markets form part of both their operations and financing activities (Copeland *et al.* 2000: 477; Koller *et al.* 2010: 769). Hence, it becomes difficult to separate operational from financing activities when valuing banks, since both of them form part of the bank's core operations (Adams and Rudolf, 2006: 4, Koller *et al.* 2010: 769; Damodaran, 2012: 582). Furthermore, Damodaran (2012: 583) argued that because of the business model of banks, it is very difficult to define debt and reinvestments, making the estimation of expected future cash flows more difficult.

The banking industry is one of the most strictly regulated industries all over the world due to the high levels of risks associated with their failure (Damodaran, 2012: 583). This was as a result of the 1929 market crash which caused hundreds of banks to fail (Barlinge, Norr and Salami (2002: 4). Typically, these regulations are used for the following three reasons:

1. To maintain reasonable capital ratios which ensure that banks do not grow beyond their capacity and put shareholders and clients at risk;
2. To restrict banks in terms of where they can invest; and
3. To restrict entry of new firms into the business (Damodaran, 2012: 583).

From a valuation point of view the assumptions about growth are linked to the assumptions about reinvestment and these assumptions need to be analysed to ensure that they pass the regulatory requirements (Damodaran, 2012: 583). The regulation might also have an effect on how risk for banks is measured. Furthermore, if these regulations are expected to change, they might add to the risk of the bank, which has a direct impact on the value of the bank (Damodaran, 2012: 583).

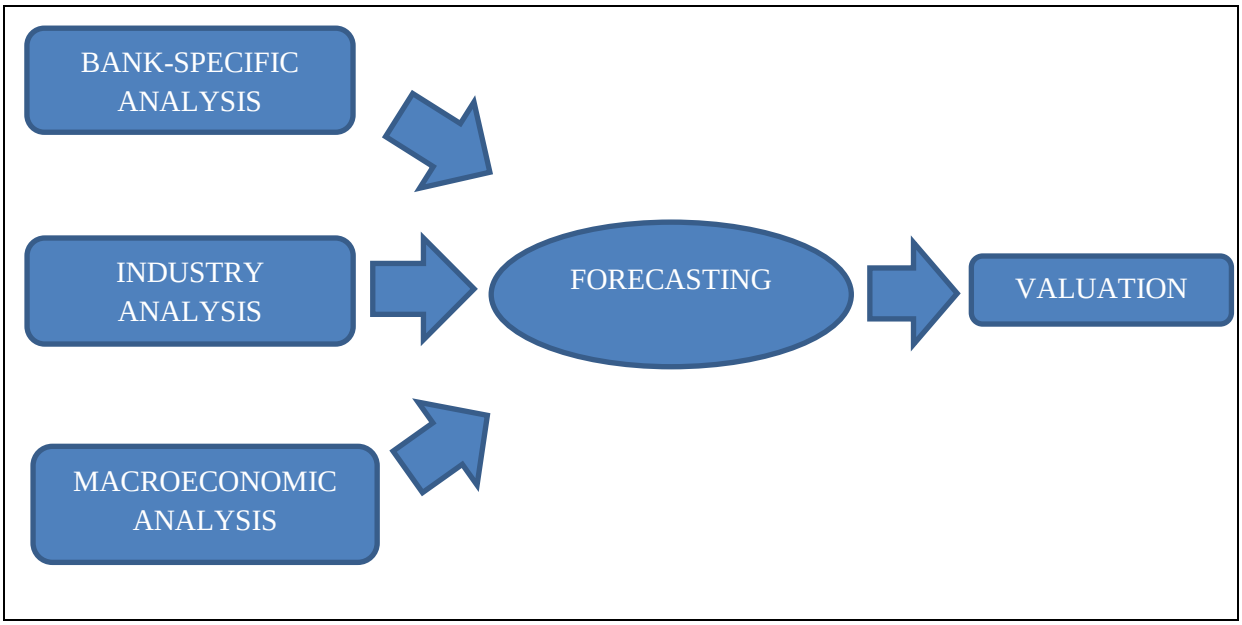
McCallum (2009: 19) and Koller *et al.* (2010: 766) argued that since banks are highly leveraged, their valuation is significantly affected by fluctuations in the overall economy compared to valuation of normal industrialised companies. Therefore, when valuing banks it

is very important to consider the value drivers of the bank (Koller *et al.* 2010: 767). Furthermore, when analysing future performance one should not only pay attention to point estimates but rather use scenario analysis in order to understand the different possible outcomes (Koller *et al.* 2010: 767). Given the bank-specific characteristic, a discussion of the bank valuation process is provided in the next section.

2.3 BANK VALUATION PROCESS

As discussed in section 1.3 defined bank valuation is an estimation of the banks "market value in terms of money on a certain date, taking into account the factors of aggregate risk, time and income expectations" (Deev, 2011: 33). Hence, the valuation of banks requires particular expertise in two important areas: an in-depth knowledge of the banking industry and the bank-specific characteristics of valuation, and a comprehensive understanding of the valuation approaches (Deev, 2011: 33). Further, as discussed in section 2.2, p. 14, McCallum (2009: 19) and Koller *et al.* (2010: 767) argued that since banks are highly leveraged, they are significantly affected by fluctuations in the overall economy as compared to industrial companies. Sjoqvist and Stepanovych (2008: 12) pointed out that in order to achieve a reliable valuation, the valuation approach (quantitative method) used should be complimented by a business analysis (qualitative method). Following this line of argument, the estimation of expected bank performance, and therefore cash flows, earnings and dividends, requires careful macroeconomic, bank-specific and industry specific analysis. Therefore, in a comprehensive bank valuation process five stages can be distinguished: bank-specific analysis, industry analysis, macroeconomic analysis, forecasting and valuation. The relationship between these stages is illustrated in Figure 2.1 below.

Figure 2.1: An illustration of the bank valuation process



Source: Own contribution

In the literature, there are varying opinions about similar valuation process. Some authors think that such a valuation process considers quite a number of variables which may consume a lot of time and complicate the whole valuation process (Sjoqvist and Stepanovych, 2008: 12), while others support the idea of choosing a number of variables depending on the nature of the company being valued (Frykman and Tolleryd, 2003: 107). In section 2.3.1 below, a detailed discussion of the first four stages along with some of the most dominant approaches in literature is provided. A discussion of the last stage will be provided in chapter three.

2.3.1 Bank-specific analysis

Bank-specific factor analysis refers to the analysis of bank factors which affect the performance of banks and are within the scope of the bank to control (Ongore and Kusa, 2013: 240). These factors are influenced by the internal decisions of the board and management and can be classified into two categories: financial statement factors and non-financial statement factors. While financial statement variables relate to the decisions which directly involve items in the balance sheet and income statement, non-financial statement variables involve factors that have no direct relation to the financial statements (Khrawish, 2011: 19). Financial factors include capital size, size of deposits liabilities, size and composition of credit, interest rate policy, cost income ratios and risk level, while non-financial factors include variables such as size of bank, ownership, state of information

technology, number of branches, management quality, customer satisfaction, business strategy, brand strength and reputation.

The SWOT analysis is usually used to analyse and understand the competitive position and strategy of banks (companies). It involves an analysis of strengths, weaknesses, opportunities and threats (Louw and Venter, 2010: 307). Strengths and weaknesses involve identifying the company's internal abilities or lack thereof, while opportunities and threats include external factors such as competitive force and government regulation affecting the performance of the company (Reilly and Brown, 2012: 444). The section below discusses each of the components of the SWOT analysis in relation to banks.

- **Strengths:** This refers to factors that give banks a competitive advantage over other banks. These factors include good customer service, high quality service, strong brands and strong financial resources (Reilly and Brown, 2012: 444).

- **Weaknesses:** This refers to the strong points of competitors that give them the potential to exploit advantages over other banks (Reilly and Brown, 2012: 444). These factors include poor financial resources that could force banks to form joint ventures or a bank that operates only in the domestic market competing with international banks.

- **Opportunities:** This refers to the environmental factors that favour the performance of the banks. These factors include the growing market for the bank's services, shrinking competition and a favourable exchange rate shift (Louw and Venter, 2010: 307).

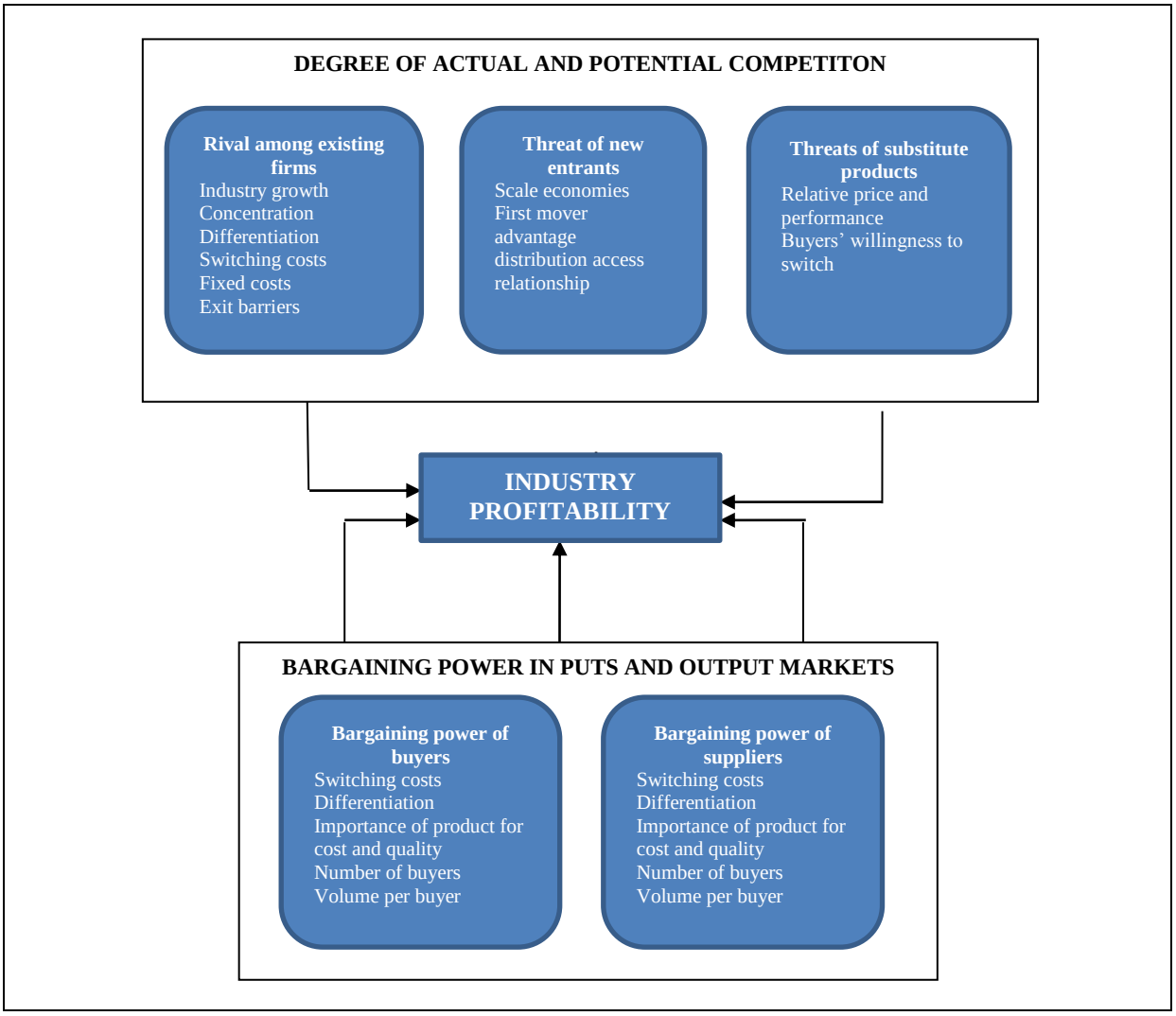
- **Threats**: This refers to the environmental factors that hinder banks from achieving their objective and goals. These factors include slow domestic economy, additional government regulation, an increase in competition, threats of entry, buyers or bargaining power and new technology (Louw and Venter, 2010: 307).

By understanding and recognising the opportunities and threats, a company is able to make informed decisions about how they can exploit opportunities and overcome threats (Reilly and Brown, 2012: 444). In section 2.3.2 below, a discussion on industry analysis is provided.

2.3.2 Industry analysis

Industry analysis refers to the analysis of the banking industry and how banks compete against each other. Literature suggests that Porter's five forces, which analyses five critical competitive forces affecting industry returns, is usually used to analyse different industries (Palepu, Healy, Bernard and Peek, 2008: 45). This framework helps to understand the industry's profitability and structure (Palepu *et al.* 2008). The five forces are rivalry among completing firms, bargaining power of suppliers, bargaining power of buyers, threats of new entrants and threats of substitute products (Palepu *et al.* 2008: 46). An illustration of Porter's five forces is provided in Figure 2.2 below.

Figure 2.2: An illustration of industry structure and profitability



Source: Palepu *et al.* (2008: 46)

Each of Porters five forces is discussed in more detail below.

- **Rival among existing firms:** This refers to the extent to which banks in an industry exert pressure and limit profit potential on one another (Palepu *et al.* 2002: 46). The level of competitive rivalry determines the profit potential of existing banks (Wilkinson, 2013). Some of the factors which determine the intensity of rivalry include industry growth rate, concentration and balance of competitors, degree of differentiation and excess capacity and exit barriers (Palepu *et al.* 2008: 46).

- **Threat of new entrants:** This refers to the threat that new competitors exert to existing competitors in banking industry. A high threat of entry means that new competitors are likely to be attracted to the profits of the industry and can enter the industry with ease (Wilkinson, 2013). Some of the factors which determine the level of barriers to entry include economies of scale, first mover advantage and legal barriers (Louw and Venter, 2010: 218). Barlinge *et al.* (2002: 6) suggested that the power of threats to entry is high because of high regulation and capital costs in starting banks.

- **Threats of substitute products:** This refers to the availability of products that a consumer can purchase instead of the industry's products (Reilly and Brown, 2012). A substitute product is a product that offers similar benefits to customers as the product produced by the companies within the industry (Louw and Venter, 2010: 218). The availability of substitutes has an effect on the profitability of an industry because consumers can choose to purchase the substitute product instead of the industry's products. Factors which determine the threats of substitutes include the relative price and performance and buyers' willingness to switch (Palepu *et al.* 2008: 47).

- **Bargaining power of buyers:** This refers to the pressure that consumers can put on banks to provide higher quality products, better consumer service and lower prices (Wilkinson, 2013). The bargaining power of buyers in an industry affects the competitive advantage of companies and influences their ability to make a profit (Palepu *et al.* 2008: 46). Factors which determine the bargaining power of buyers include price sensitivity, relative bargaining power and buyers' switching costs (Louw and Venter, 2010: 220).

Barlinge *et al.* (2002: 6) suggested that buyers for banks enjoy strong bargaining power because of low switching costs and high sensitivity to the quality of service and interest rate since loan products are difficult to differentiate.

- **Bargaining power of suppliers:** This refers to the pressure that suppliers (investors and depositors) can put on banks by increasing prices, lowering quality or reducing the availability of products or services (Wilkinson, 2013). The bargaining power of the suppliers in an industry affects the competitive environment and affects the buyer's ability to make a profit (Palepu *et al.* 2008: 50). Factors which affect the bargaining power of suppliers include switching costs, differentiation, importance of product and number of buyers (Louw and Venter, 2010: 220). Suppliers of money (customers and investors) have high bargaining power over banks because switching costs are low and as a result they can easily move if they are not happy with the service or rates (Barlinge *et al.* 2002: 6).

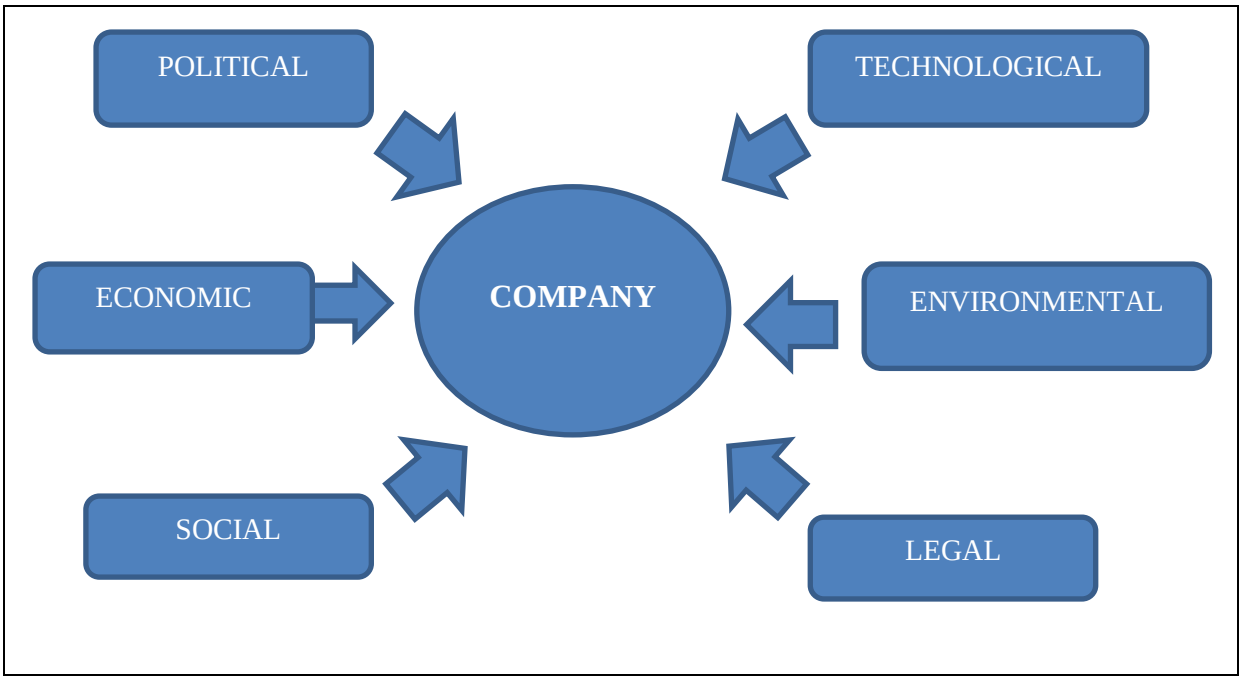
Generally, Porter's five forces states that the intensity of competition determines the potential for creating abnormal profits by the company in an industry. The relative bargaining power of the company in the industry and their customers and suppliers determine the potential for generating abnormal or normal profits by the companies in an industry (Palepu *et al.* 2008: 46). Consequently, the profits generated have an effect on the final value of the company.

In section 2.3.3 below, a detailed discussion of the macroeconomic analysis is provided.

2.3.3 Macroeconomic analysis

Macro-economic analysis refers to the process of analysing the general state of the economy and its potential effects on banks. It relates to factors which are beyond the control of the management (Ongore and Kusa, 2013: 240). Even though there are other methods that can be used to analyse the macroeconomic environment, such as PEST analysis, the available literature largely supports the use of the PESTEL analysis. PESTEL analysis refers to the analysis of the political, economic, social, technological, environmental and legal factors in the external environment which affect the strategy and performance of a company (Louw and Venter, 2010: 218). Figure 2.3 below illustrates the PESTEL analysis.

Figure 2.3: An illustration of PESTEL analysis



Source: Louw and Venter (2010: 188)

Each component of the PESTEL analysis is discussed in more detail below.

- **Political:** The purpose of analysing the political environment is to create an awareness of the political stability in the country, and the government's ability to create and nurture an investor-friendly environment (Louw and Venter, 2010: 175). In the valuation process analysis should find answers to questions about the political stability and economic politics.

- **Economic:** This refers to the economic factors that affect the performance of a bank. In the valuation process analysts should establish the relationship between economic factors such as inflation, level of income, GDP, interest rate and exchange rate and the performance of the bank (Koller *et al.* 2010: 766). According to Barlinge *et al.* (2002: 5), interest rate is the most important aspect of bank performance. Furthermore, banks are affected by the performance of the economy, that is, if the economy is doing well, the demand for loans and investments is high and the degree of loan defaults is low. Conversely, if the economy is on a downturn, demand for loans decreases and defaults also increase (Barlinge *et al.* 2005: 5).

- **Social:** This refers to all the factors that affect banks on a social level (Sjoqvist and Stepanovych, 2008: 14), including factors such as beliefs, attitudes, traditions, lifestyle and education (Louw and Venter, 2010: 180). Just like the economic factor, the social factors vary from country to county and affect companies at different levels. In the valuation process analyst should find answers about the dominant regions and the population structure (Sjoqvist and Stepanovych, 2008: 14).

- **Technological:** This refers to developments in technology which affect the performance of banks. In the valuation process analysts should analyse how closely the company follows technological developments, the risk of the company's products becoming out-dated and the effect of any changes in these factors on the bank's future performance (Sjoqvist and Stepanovych, 2008: 14).

- **Environmental:** This refers to the ecological and environmental factors that affect the operations and demand of the bank's services. In the valuation process analysts should find answers to questions about environmental regulation, ecology regulation and sustainability (Sjoqvist and Stepanovych, 2008: 14).

- **Legal:** This refers to certain external and internal laws that affect the operations of a bank. In the valuation process analysts should find answers to questions about employment laws, consumer protection and e-commerce, copyright, competition protection and banking laws and regulations (Sjoqvist and Stepanovych, 2008: 14). Refer to section 2.2 for a detailed discussion of bank regulations.

A study by Athanasonlou, Brissimis and Delis (2008) which examined the effects of bank-specific, industry and macroeconomic determinants of Greek banks for the period 1985-2001 suggested that bank-specific factors with the exception of size have a significant effect on the performance of banks. Vong and Chan (2006) examined the impact of bank-specific factors, macroeconomic and financial factors on the performance of the Macao banking industry. The results suggested that capital strength of banks, asset quality measured by loan loss provision, and rate of inflation have a significant relationship with the performance of banks.

Shaher, Kasawneh and Salem (2011) examined the major factors affecting the performance of banks in the Middle East region. The results suggested that the competitive environment, bank-specific factors, legal environment, country risk and economic indicators affect the performance. Sufian and Noor (2013) analysed the internal and external factors that influence the performance of banks in India during the period 2000-08. The results suggested that liquidity, operating expenses; credit risk, liquidity and size affect the performance of banks significantly.

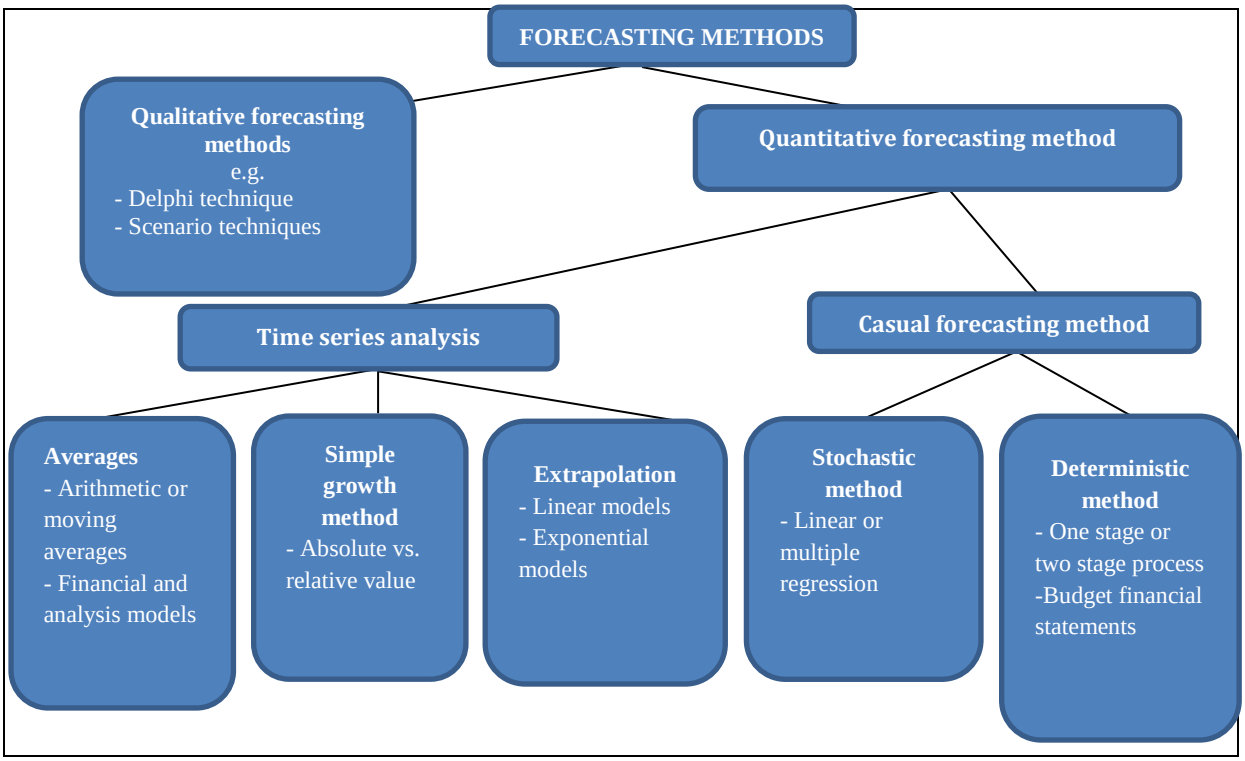
An overview of the empirical evidence discussed above seem to suggest that certain bank-specific, industry and macroeconomic factors significantly affect the performance of banks in emerging markets. The factors that seem to have a significant effect include credit risk, size of bank, interest rate, liquidity, economic growth, GDP and inflation.

In section 2.3.4 below a discussion on the forecasting of future bank performance is presented.

2.3.4 Forecasting

In this phase of the bank valuation process all the information collected in the bank-specific, industry and macroeconomic analysis is used to predict the future performance of the bank. The items forecasted (cash flows, earnings or dividends) depend on the valuation approach used (Sjoqvist and Stepanovych, 2008: 12). There are a number of forecasting methods that can be used to forecast performance of banks. These methods are broadly divided into quantitative and qualitative forecasting methods. Figure 2.4 below provides a visual illustration.

Figure 2.4: An illustration of forecasting methods



Source: Gross (2006: 239)

- **Quantitative forecasting methods:** Quantitative forecasting methods are usually applied when numerical information about the past is available. They are based on the notion that past aspects of the past patterns will repeat themselves (Hyndman, 2009). These quantitative forecasting methods are widely divided into explanatory and time series methods. Causal forecasting methods assume that the variables to be forecasted exhibit a causal relationship with one or more other variables, whereas time series forecasting methods use only information on the variable to be forecast, and make no attempt to discover the factors affecting its behaviour (Hyndman, 2009).

- **Qualitative forecasting methods:** Qualitative forecasting methods are applied when it is not possible to use quantitative forecasting methods. They are used to adjust quantitative forecasting methods by taking into account information that could not be incorporated into the formal statistical models (Hyndman, 2009). They are usually dependent on expert opinion and experience.

Just as in industrial companies, bank performance is usually forecast using quantitative methods (Rezaee, 2001; Liebich, 1995). However, qualitative methods also play an important function. White, Sondhi and Fried (2002: 720) argued that qualitative forecasting methods produce better forecasts than quantitative methods because they are based on broader data sets which include information from the economy, competitive environment and financial statements.

The forecasting horizons for basic valuation approaches are usually divided into:

1. Explicit forecast period; and
2. Terminal value (Copeland *et al.* 2000: 274; Koller *et al.* 2010: 213; Damodaran, 2012: 304).

The following section presents an overview of these two concepts.

2.3.4.1 Explicit forecast period

Explicit forecast period refers to the individual yearly forecasts after the current year (Cassia, Plati and Vismara, 2007: 91). The length of the explicit forecast period is usually determined by the accuracy of the explicit or detailed forecasts (Gross, 2006: 67). Longer explicit forecast periods are preferred, as they present a better balance between the terminal value and the present value. For industrial companies the length of the explicit forecast period is usually between 5 to 10 years (Copeland *et al.* 2000: 274).

However, the main difference between forecasting cash flows for banks and industrial companies is that the explicit forecast period for banks is usually shorter than for industrial companies (Johnson, 1996; Schuster, 2000). The main reason for having a shorter explicit forecast period for banks is based on the strong dependency on macroeconomic factors. The explicit forecast period selected for banks should accommodate the volatility of the banking environment as well as the long-term strategic plans of the bank (Gross, 2006: 65). Johnson (1996) argued that a very short forecasting period could result in distortions as exceptionally positive and negative periods may be overlooked.

Gross (2006: 65) indicated that the length of the explicit forecasting period should be in line with the strategic planning period of the bank. Furthermore, the forecasting period has to

fully incorporate the effects of structural changes, and must be long enough to cover the duration of the economic life of the bank (Wariboko, 1994; Johnson, 2012). In contrast to industrial companies, the product life cycle of the banks' products is not a good indicator of the explicit forecasting period (Rezaee, 2001; Gross, 2006). Table 2.1 below presents an overview of the banks' explicit forecasting periods suggested in literature.

Table 2.1: Overview of explicit forecast period for banks

Year	**Source**
3 years	Horter (1998: 156); Matten (2000: 277)
3 to 6 years	Bomer and Lowis (1997: 100); Kirsten (1995: 674); Vettiger (1996: 131)
4 years	Zessin (1982: 64)
3 to 10 years	Adolfetal (1989: 488); Behm (1994: 60)
5 years	MSDW (2001: 24); Damodaran (2004: 29)
5 to 7 years	Wilde (1982: 467)
5 to 10 years	Faust (2002: 75); Kunowski (2002:7 0); Mercer (1992: 259); Rezaee (2001: 187); Strutz (1993: 86); Wariboko (1994: 94)
10 years	Hohmann (1998: 92)

Source: Gross (2006: 237); own contribution

From the illustration above, the average explicit forecasting period for banks is 5 years, even though some authors recommend forecasting periods of up to about 10 years (Gross, 2006). At the time of this analysis, no study relating specifically to banks in emerging markets could be found.

2.3.4.2 Estimating the terminal value

Since it is impossible to forecast bank performance for ever due to the going concern assumption of banks, analysts generally impose closure to the forecast's stopping estimation after the explicit forecast period and then determine the terminal value which is a reflection of the value of the bank's future performance in perpetuity (Gross, 2006: 65). The terminal value plays a significant role in determining the final value of bank since the explicit forecasting period is relatively short (Copeland *et al.* 2000: 274; Koller *et al*. 2010: 214). According to Copeland *et al.* (2000: 274) and Koller *et al.* (2010: 214), terminal value

accounts for a large percentage of the total value of a company. The large percentage contribution of the terminal value does not simply mean, however, that most of the value of the company will be generated in the terminal period (Koller *et al.* 2010: 215). Typically, the contribution of the terminal value is large because profits and other cash inflows which are made in the initial years are often offset by large capital expenditure and other cash outflows. There are generally three approaches (discussed below) found in literature that can be used to estimate the terminal value.

- **Liquidation value:** This approach assumes that the company will stop its operations at some point in time in the future and then sell its assets to the highest bidders (Damodaran, 2012: 305). Even, though the idea is not to liquidate the company's assets, calculating the value of a company under this approach is a worthy exercise, since the resulting value can be compared to the figures obtained via the other valuation approaches (Pereiro, 2002a: 50). There are however two ways that can be used to calculate the liquidation value. The first one is based on the book value of the assets, adjusted for inflation during the period. The disadvantage of this approach is that it is based on the accounting book value and as such it does not reflect the earning power of the assets (Copeland *et al.* 2000: 284). The second approach estimates the liquidation value based upon the earnings power of the assets (Damodaran, 2012: 305).

- **Multiple approaches:** Under this approach the value of the company is estimated by applying the relevant multiple for the company under valuation, for example, a book value, a sale, or earnings multiple (Pereiro, 2002a). The limitation of this approach is that it possibly results in a dangerous mixture of relative and discounted cash flow valuation (Copeland *et al.* 2000: 285).

- **Stable growth:** This approach is also referred to as the perpetuity growth method. It assumes that cash flow will grow at a constant growth rate for ever. The logic behind this reasoning is that with time all industries mature and growth opportunities that exceed the market average will decrease or disappear entirely (Copeland *et al.* 2000: 277; Pereiro, 2002a: 50. It can be represented by the following mathematical formula (Damodaran, 2012: 306):

$$Terminal\ value = \frac{F_n(1+g)}{(k-g)}$$

where:

$$F_n = Expected\ cash\ flows$$
$$k = Cost\ of\ equity$$
$$g = Growth\ rate$$

The cash flow used will depend on whether the valuation is meant for the whole company or equity. The effect of the stable growth rate on the DCF valuation approach is more when compared to other valuation inputs (Damodaran, 2012: 305). Part of the reason is that a marginal change in the stable growth rate changes the terminal value significantly and the effect gets larger as the growth rate approaches the discount rate (Copeland *et al.* 2000: 277). Copeland *et al.* (2004) and Koller *et al.* (2010) recommended the stable growth rate when determining the terminal value for banks since they are assumed to operate as going concerns.

2.4 ESTIMATION OF COST OF EQUITY

Besides forecasting bank performance when valuing banks, estimation of cost of equity (discount rate) is also considered to be important, especially when using the DCF valuation approach (refer to section 3.2) (Damodaran, 2012: 17). As far as banks are concerned, cost of equity is defined as a measure of the portion of the risk in the equity that cannot be diversified away by the marginal investors in the equity. The risk is estimated by means of beta (in the capital asset pricing model (CAPM)) or betas (in arbitrage pricing model or multifactor models) (Damodaran, 2012: 586). Each of these models is discussed in greater detail below.

2.4.1 Capital asset pricing model (CAPM)

The capital asset pricing model (CAPM) was developed by Sharpe (1964) and Lintner (1965) and is widely used when estimating cost of capital. It states that the cost of capital is equivalent to the return on risk-free securities plus the companies systematic risk (beta)

multiplied by the market price of the risk (market premium) (Copeland *et al.* 2000: 258). The CAPM assumes no tax, interest rate or transaction costs and homogeneous expectations from investors (Reilly and Brown, 2012: 204). It is represented by the following mathematical formula:

$$k_e = r_f + \beta(r_m - r_f)$$

where:

$$k_e = Cost\ of\ equity$$
$$r_f = Risk\ free\ rate$$
$$\beta = Beta$$
$$r_m = Market\ risk\ premium$$

Risk-free rate and market risk premium are similar for all companies except for beta. Beta represents the equity's incremental risk to diversified investors, where risk is defined as the covariance of equity and the market (Koller *et al.* 2010). The use of CAPM has been criticised by several authors based on its simplified underlying assumptions (Copeland *et al.* 2000: 267). Furthermore, analysts and academics have not yet reached consensus with regard to the estimation of CAPM's key variables (risk-free rate, market risk premium and beta). The discussion below gives an overview of some of the possible ways that could be adopted when estimating these variables.

- **Risk-free rate:** The zero-beta portfolio is theoretically the best estimate of the risk-free rate. However, zero-beta portfolios are costly and complex to construct, and are not usually available for use in estimating the risk-free rate. Alternatively, there are three substitutes: Treasury bills, the rate for ten year Treasury bonds, and the rate for thirty-year Treasury bonds. Copeland *et al.* (2000: 259) and Damodaran (2012: 65-68) recommended a ten-year government bond as a suitable proxy for the risk-free rate for banks. This choice is motivated by the fact that it is less affected by unexpected changes in inflation, resulting in a smaller beta than the thirty-year Treasury bond rate (Copeland *et al.* 2000: 259). Empirical evidence has also shown that long-term bonds are not completely riskless (Pettit, Gulic and Park, 2001). Furthermore, national risk-free estimates are preferred over global risk-free estimates since local risk-free estimates also take into account inflation rate risk (Damodaran, 2012).

- **Market risk premium:** Typically, the market risk premium can be estimated using either the forward-looking or the historical approach (Damodaran, 2012: 59-79). The forward-looking approach is based on the projections put across by the equity market and the historical approach is based on past years' performance of the equity market. When using the historical approach, market risk premium estimates vary between 3% and 8%. However, the risk premium used by most practitioners ranges from 3.5% to 5% (Copeland *et al.* 2000: 261; Koller *et al.* 2010: 732).

- **Beta:** Beta is generally estimated using the multi-factor approach such as the one published by Bloomberg and Sharenet (Gross, 2006: 80). However, these betas vary significantly as the assumptions underlying their estimation are not published. Therefore, estimating betas using historical returns volatility tends to produce reliable and easy to interpret results (Dermine, 2009). Another alternative is to use industry averages which are more stable and reliable than individual company betas (Copeland *et al.* 2000: 264). Johnson (1996) argued that leverage adjustments are usually acceptable and reasonable for industrial companies compared to banks. As for banks, this aspect is generally ignored since financing and operating activities are difficult to separate, making it impossible to separate the banks' financial and business risk (Gross, 2006: 79).

2.4.2 Arbitrage Pricing Theory (APT)

The arbitrage pricing theory (APT) is a multifactor asset pricing model developed by Ross (1976) as a solution to the problem associated with CAPM of treating the equity beta as the only source of equity risk. Instead, the APT takes into account numerous variables, as illustrated below:

$$k_e = r_f + y_1\beta_1 + \cdots + y_n\beta_n$$

where:

$$r_f = Risk\ free\ rate$$

$$y_n = Risk\ premium\ of\ factor\ n$$

$$\beta_n = Beta\ of\ factor\ n$$

The sensitivity of the company's returns is measured by each beta relative to a separate underlying variable (Copeland *et al.* 2000: 267). The fact that the ATP explains systematic risks using a variety of variables gives it an edge over CAPM. However, ATP lacks empirical and theoretical evidence as to which variables to include (Gross, 2006: 82). As far as the valuation of banks is concerned, the main underlying variables include changes in interest rate, inflation and exchange rate (Gross, 2006: 82).

2.4.3 Fama-French three-factor model

The Fama and French (1993) three-factor model was developed as a result of increasing empirical evidence which suggested that CAPM explained realised returns poorly. The model states that the expected return on a portfolio in excess of the risk-free rate is explained by the beta of its return to three factors: the excess return on a portfolio of small stocks over a portfolio of large stock, the difference between the returns on a portfolio of large and small stock, and the excess return between a portfolio of high-book-to-market stocks and the return on a portfolio of low-to-book-to-market stock (Bundoo, 2008). Reilly and Brown (2012: 230-231) illustrated the three-factor model mathematically as:

$$Ri = E(R_i) + b_{i1}\delta_1 + b_{i2}\delta_2 + \cdots + b_{ik}\delta_k + \varepsilon_i \text{ for } i = 1 \text{ to } n$$

where:

$$Ri = \text{the actual return on assets on asset } i \text{ duriung a specified time period}, i$$
$$E(R_i) = \text{the expected return for asset } i \text{ if all the risk factors have zero changes}$$
$$b_{ij} = \text{the reaction in asset } i\text{'s return to movements in common risk factor } j$$
$$\delta_k = \text{a set of common factors or indices with a zero mean that influences the return on all assets}$$
$$\varepsilon i = \text{a unique effect on asset } i\text{'s return}$$
$$n = \text{number of assets}$$

Fama and French (1996) suggested that the three-factor model explains the pattern of returns in ways that CAPM cannot do. Empirical evidence in UK by Bahtnagar and Ramlogan (2010) suggested that the three factor model provide better estimates in contrast to CAPM. With regard to banks, recent empirical evidence from Pakistan (an emerging market) by

Hamid, Hanif, Malook and Wasimullah (2011) also supported the three-factor model over CAPM.

2.4.4 Discussion of the models

The usefulness of the cost of equity models discussed above and estimation of cost of capital has been subject to significant amount of debate over the past few decades. The use of alternative models such as risk-free rate plus premium for estimating the cost of capital, the CAPM and APT remain the preferred models both for industrial companies and banks (Gross, 2006: 85). A considerable amount of publications preferred the CAPM over the APT and Fama and French's three-factor model based on its ease of use and practicability (Reilly and Brown, 2012: 229). Even though APT and the Fama and French three-factor model are better alternatives, their application is complex and empirical evidence supporting the relevant variables to be included as far as banks are concerned is scarce (Gross, 2006: 86).

As far as emerging markets are concerned, empirical evidence suggests that market-oriented models such as APT and Fama and French's three-factor model are less popular among analysts because of incomplete, extremely short and unreliable data (Pereiro, 2002a: 75). For instance, a survey conducted by Pereiro (2002b) in Latin America showed that only 8% of analysts use the APT when estimating the cost of capital. Even in developed markets, APT is not that popular. A survey of US analysts by Bruner *et al.* (1998) found that only 4% of corporations and 20% of financial advisors use models such as APT. Therefore, at the moment CAPM seems to be the preferred choice in both emerging and developed markets.

2.5 CHAPTER SUMMARY

This chapter presented a discussion on the bank-specific characteristics that make them different from industrial companies. In particular, the essential bank-specific characteristics discussed included a lack of valuation information, bank business model and bank regulations. Furthermore, four of the five stages that make up the bank valuation process were discussed. The stages presented in this chapter were: bank-specific analysis, industry analysis, macroeconomic analysis and forecasting. The final stage (valuation) will be discussed in chapter three.

CHAPTER THREE
VALUATION APPROACHES

3.1 INTRODUCTION

As outlined in chapter two, the last stage of the valuation process (valuation) is discussed in this chapter with particular attention being paid to the valuation approaches. As discussed in chapter one, experts use a variety of valuation approaches, ranging from simple to sophisticated ones. Traditional valuation approaches include the DCF valuation approach (income valuation) which relates the value of an asset to the present value of the expected future cash flows (Damodaran, 2006: 3) and multiples or relative approach (market valuation), which relates the value of an asset to the price of 'comparable' assets relative to a common variable such as earnings, cash flows, book value or sales (Reilly and Brown, 2012: 318). Other valuation approaches are those of liquidation and accounting valuation and the contingent claim valuation (Damodaran, 2006: 3).

These valuation approaches are usually based on different assumptions, share common characteristics and can be classified in broader terms. In section 1.9, it was indicated that this study pays particular attention to the DCF and relative valuation approaches (traditional valuation approaches). These valuation approaches generally use publicly available information where such information is usually reflected in the final value assuming that capital markets are efficient in the semi-strong form (Levy and Post, 2005).

Given the above information, the purpose of this chapter is to provide a detailed understanding of the DCF and multiples valuation approaches. It begins by discussing the DCF valuation approach, followed by the relative valuation approach. Secondly, these two valuation approaches are compared and, lastly, literature regarding the application of these valuation approaches to bank valuation is examined.

3.2 DCF VALUATION APROACH

The DCF valuation approach was first discussed by Irving Fisher in 1930 and was later formalized by John Burr Williams (1938). It estimates the value of an asset by discounting forecasted cash flows with an appropriate discount factor (Williams, 1938; Pereiro, 2002a;

Titman and Martin, 2007; Reilly and Brown, 2012; Damodaran, 2012). In other words, the DCF valuation approach equates the value of an asset to the present value of expected future cash flows (Reilly and Brown, 2012: 318; Damodaran 2012: 11), therefore it takes into account the time value of money (Correia, Flynn, Uliana and Wormald, 2012: 33). The time value of money refers to the fact that money received today is worth more than money received in the future (Lasher, 2011). On a more practical note, interest could be received on money received today while waiting to receive the same amount of money in the future. Thus money received today could become more than the same amount of money received in the future. The trade-off between receiving money today and in the future depends, among other things, on the rate of interest (also referred to as the discount rate) (Lasher, 2011).

Mathematically, the DCF valuation approach can be expressed as follows (Reilly and Brown, 2012):

$$Value = \sum_{t=1}^{n} \frac{CF_t}{(1+k)^n}$$

where:

CF_t = *Cash flow generated in period t*

k = *Discount rate*

n =*Number of years over which cash flows are raised*

As illustrated in the mathematical formula above the DCF valuation approach is built upon forecasted cash flows and discount factor (Megginson, Smart and Graham, 2010; Damodaran, 2012: 11). These variables are however not easy to estimate. Typically, the forecasted cash flows are determined by making appropriate assumptions about the future, while the discount factor is determined by the riskiness of the equity (Damodaran, 2012: 11).

The DCF valuation approach however does not provide much guidance as to how it should be applied in emerging markets (Pereiro, 2002a: 14). In particular, both cash flows and discount rates need to be properly adjusted to account for the market characteristics of emerging markets (Pereiro, 2002a: 14).

There is however a general agreement in the literature (Rady and Nunez, 2012: 111) that most of the valuations in emerging markets are based on the DCF valuation approach. Rady and Nunez (2012: 112) attributed the reliance on the DCF valuation approach to its ability to reflect the economic characteristics associated with emerging markets. They argued that compared to developed markets, macroeconomic factors of emerging markets translate into the microeconomics of companies operating in these markets, showing that the growth of companies is positively correlated to the growth of emerging markets. The Head of Research, Pharos Holdings and EFG Hermes (cited in Rady and Nunez, 2012: 116), attributed the over-reliance on the DCF valuation approach in emerging markets to the fact that most analysts and other stakeholders reading financial reports are well aware of the DCF approach, while Imam, Barker and Clubb (2008) perceived that analysts prefer to use the DCF valuation approach since it allows them to structure the valuation approach in a way that could allow them to justify their recommendations.

Research findings (Yee, 2004; Lie and Lie, 2002) with regard to the inaccuracy of the DCF valuation approach suggest that the uncertainty in future cash flows and the need to adopt a value for the equity risk premium within the CAPM model certainly lead to inaccurate valuations. Rady and Nunez (2012: 111) suggested that the DCF valuation approach depends on two variables: cash flow and cost of capital, "therefore valuation is a black box, where you do not know where numbers come from and justification is not given as to how those numbers derive from fundamental determinants and how they are integrated". One consequence of this characteristic of the DCF valuation approach is data manipulation by analysts (Magni, Malagoli and Mastroleo, 2006: 2).

The DCF valuation approach is made up of various specific models which include the enterprise DCF model, the equity DCF model and the Dividend Discount Model (DDM). A detailed explanation of each of these models is provided below.

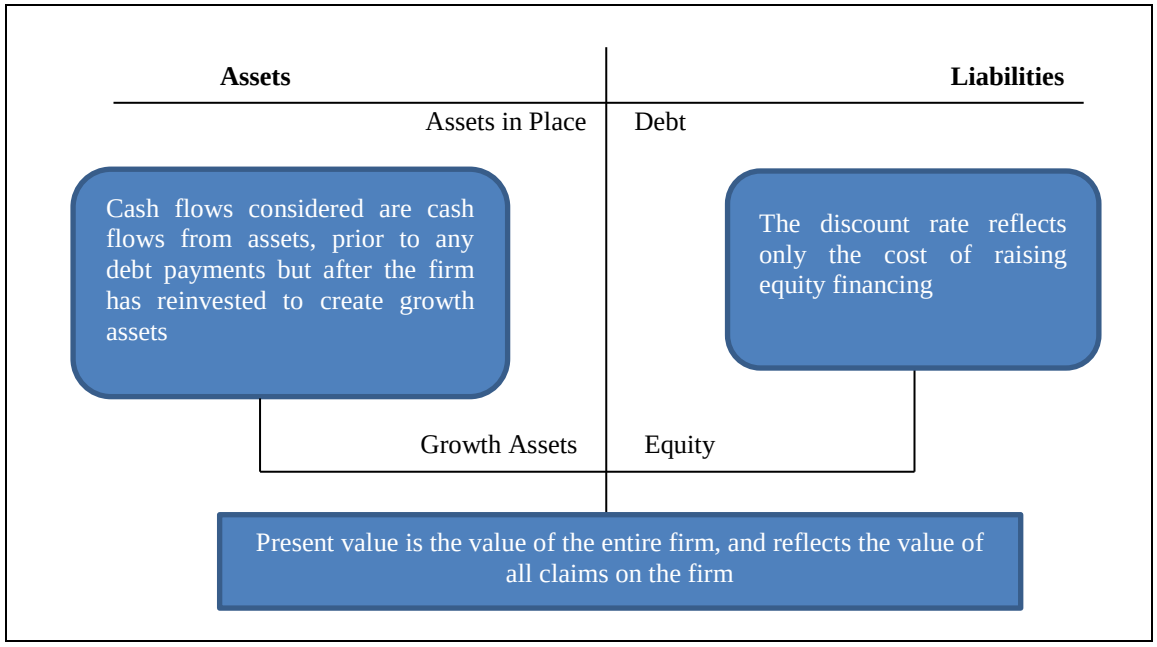
3.2.1 Enterprise DCF model

The enterprise DCF model estimates the value of a company by discounting operating free cash flow by the weighted average cost of capital (WACC) (Koller *et al.* 2010: 104; Farooq, Ullah, Alam and Shah, 2010: 2: Damodaran, 2012: 14; Reilly and Brown, 2012). In

other words, the enterprise DCF model represents an entity perspective to the DCF approach, that is, it estimates the present value of both equity and debt claims combined (Jones, 2007: 260; Farooq *et al.* 2010: 2; Correia *et al.* 2012). The operating free cash flow relates to all the cash that is generated by the company and is made available for withdrawal to both equity and debt providers (White *et al.* 2002: 689; Titman and Martin, 2012). Since the enterprise DCF model represents an entity perspective, cash flow claims by debt holders are subtracted from the overall company value in order to determine the value of equity (Koller *et al.* 2010: 106; Correia *et al.* 2012: 201).

Figure 3.1 provides a visual illustration of this model.

Figure 3.1: An illustration of the enterprise DCF model



Source: Damodaran (2012: 13)

Mathematically the enterprise DCF model is expressed as follows:

$$Value\ of\ stock = \sum_{t=1}^{n} \frac{FCF_t}{(1 + WACC)^t}$$

where:

$$FCF = Free\ cash\ flow\ at\ time\ t$$

$$\text{WACC} = \text{ Weighted average cost of capital}$$

WACC is:

$$\text{WACC} = \text{kd x (d\%)} + \text{ke x (e\%)}$$

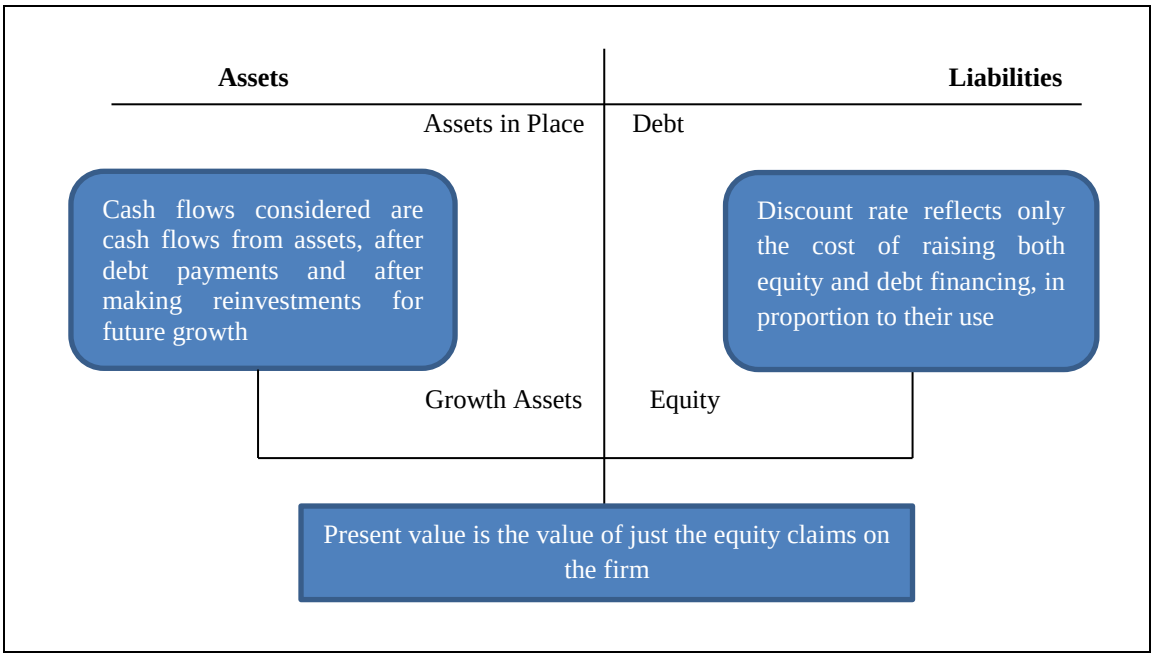
where:

$$kd = after\ tax\ cost\ of\ debt$$
$$d\% = percentage\ of\ debt\ capital\ \ to\ total\ capital$$
$$ke = required\ rate\ of\ return\ on\ equity\ capital$$
$$e\% = percentage\ of\ equity\ capital\ to\ total\ capital$$

3.2.2 Equity DCF model

The equity DCF model estimates the value of equity by discounting free cash flow to equity by the cost of equity (Koller *et al.* 2010: 127; Reilly and Brown, 2012: 329). In fact, it deals with all the cash flows that are available for distribution to all the equity providers (Titman and Martin, 2012; Damodaran, 2012: 12). These cash flows are derived after adjustments on debt payments are made on operating free cash flow (Reilly and Brown, 2012: 329). Unlike the enterprise DCF model, the equity DCF model values equity claims directly (Koller *et al.* 2010: 127; Damodaran, 2012: 13; Correia *et al.* 2012). Figure 3.2 provides a visual representation of this model.

Figure 3.2: An illustration of the equity DCF model



Source: Damodaran (2012: 13)

Mathematically the equity DCF model can be expressed as follows:

$$Value\ of\ equity = \sum_{t=1}^{n} \frac{FCFE_t}{(1+k)^t}$$

where:

$$FCFE = free\ cash\ flow\ to\ equity\ at\ time\ t$$

$$k = cost\ of\ equity$$

3.2.3 DDM

The DDM was introduced by Gordon (1962) in the late 1950s. It equates the value of equity to the present value of forecasted dividends. It assumes that when investors buy equity they expect to receive two types of cash flows:

1. Dividends in the period over which they own the equity; and
2. The market price at the end of the holding period (Megginson and Graham, 2010).

Reilly and Brown (2012: 326) suggests that the DDM is one of the cleanest and most straightforward models of valuing equity because it uses dividends which are clear cash flows that go to the equity investors. The various versions of the DDM are beyond the scope of this study and as a result they will not be discussed.

Mathematically the DDM can be expressed as follows (Jones, 2007: 249):

$$Value\ of\ equity = \sum_{t=1}^{n} \frac{D_t}{(1+k)^t}$$

where:

$$D_t = \text{dividend during period } t$$

$$k = \text{require rate of return}$$

In conclusion, the DCF valuation approach is based on expected future cash flows (refer to section 2.3) and discount rate (refer to section 2.4). Given these estimation requirements, this valuation approach is easy to use for companies with positive cash flows which can be estimated with some reliability for future periods, and where a proxy for risk that can be used

to obtain discount rates is available (Damodaran, 2012: 323). Therefore, the further a company is from this idealised setting the more challenging it is to apply this valuation approach.

In section 3.3 below, the relative valuation approach is discussed.

3.3 THE RELATIVE VALUATION APRROACH

The relative valuation approach estimates the value of assets by looking at how similar assets are valued relative to common variables such as earnings, cash flows, book value or sales (Sehgal and Pandey, 2009: 31; Koller *et al.* 2010: 313; Titman and Martin, 2011; Reilly and Brown, 2012: 329). It is based on the law of one price, which stipulates that two similar assets should trade at similar prices (Damodaran, 2012), and assumes that the market is correctly valued, but it can however make errors on the price of individual equity.

The important and difficult aspects of the relative valuation approach include finding similar companies since no two companies in the same business can have the same level of risk, growth potential or cash flows (Damodaran, 2012: 453). One way to approach this is to use industry averages, assuming that the other firms in the industry are comparable to the company being valued and that the market, on average, prices these companies correctly (Damodaran, 2012: 453).

The relative valuation approach is difficult to apply in emerging markets because of small equity markets, hence there are few comparable companies and some industries may not be represented at all (Pereiro, 2002a: 15). In order to overcome this problem some analysts and academics support the use of comparable companies from developed markets (Pereiro, 2002a: 15). However, the straight application of, for example, US multiples to emerging market companies is perceived to be inappropriate because of market characteristics which play a central role in defining company multiples in each economy (Pereiro, 2002a: 15).

There is however, a small body of empirical research focusing specifically on the relative valuation approach in emerging markets. For instance, Irina, Alexander and Ivan (2007) suggested that the relative valuation approach may lead to over-valuation since companies

subject to market characteristics require specific adjustments. Sehgal and Pandey (2009) suggested that the relative valuation approach is sensitive to market conditions, while Rady and Nunez (2012) observed that relative valuation approach needs to be supported by other valuation approaches such as DCF. These studies, however, do not provide evidence of the relationship between the preferred multiples and their level of accuracy in specific industries.

The relative valuation approach comprises various specific models which include the price earnings (P/E) ratio, price to book value (P/BV) ratio, price to cash flow (P/CF) ratio and price to sales (P/S) ratio. A detailed explanation of each of these models is presented in the following section.

3.3.1 P/E ratio

The P/E ratio, which is also known as the earnings multipler, expresses earnings as a function of the market price of equity (Jones, 2007: 263). The P/E ratio can be estimated using either earnings for the last 4 quarters, providing forward P/E; expected earnings per share in the next year, yielding a forward P/E; or current earnings per share, providing a current P/E (Damodaran, 2012: 468). Analysts and investors prefer using the P/E ratio when they are confident of the quality of historical and forecasted earnings per share and when earnings per share are expected to grow (Froidevaux, 2004: 15).

Mathematically, the P/E ratio can be expressed as follows:

$$P/E_J = \frac{P/S_t}{E/S_{t+1}}$$

where:

$$P/E_J = price\ earnings\ ratio$$

$$P/S_t = price\ per\ share\ in\ period\ t$$

$$E/S_{t+1} = estimated\ or\ historical\ earnings\ per\ share$$

3.3.2 P/BV ratio

The P/BV ratio expresses the book value as a function of market price per share (Damodaran, 2012: 511). The book value refers to the difference between the book value of assets and the

book value of liabilities according to the annual financial statements. The price to book value provides a relatively stable and intuitive measure of value and also it can be used to compare companies across similar firms for signs of under- or overvaluation.

Mathematically, the P/BV ratio can be expressed as follows (Reilly and Brown, 2012: 332):

$$P/BV_J = \frac{P_t}{BV_{t+1}}$$

where:

$$P/BV_J = price\ to\ book\ value$$
$$P_t = the\ price\ of\ equity\ per\ share\ in\ period\ t$$
$$BV_{t+1} = book\ value\ of\ equity\ per\ share$$

3.3.3 P/CF ratio

The P/CF ratio expresses the cash flow as a function of the market price per share (Reilly and Brown, 2012: 332). This ratio is affected by the expected growth rate of the cash flow variable and the risk of the stock as indicated by the uncertainty or variability of the cash flow series over time (Reilly and Brown, 2012:332). The cash flow used depends upon the nature of the company and industry. Mathematically, the P/CF is expressed as follows:

$$P/CF_J = \frac{P_t}{CF_{t+1}}$$

where:

$$P/CF_J = \ \ the\ price\ to\ cash\ flow\ ratio$$
$$P_t = the\ price\ of\ the\ stock\ in\ period\ t$$
$$CF_{t+1} = the\ expected\ cash\ flow\ per\ share$$

3.3.4 P/S ratio

The P/S ratio expresses the sales as a function of the market price per share (Reilly and Brown, 2012: 333). Analysts who prefer this relative valuation ratio believe that sales information is subject to less manipulation compared to the other data provided in the income

statement and balance sheet. (Reilly and Brown, 2012: 333). Just the P/CF ratio, the P/S ratio varies across industries; therefore it is suitable for comparing similar companies. This ratio is to some extent limited because of the fact that it does not take into account any expenses and debt. Mathematically, the P/S ratio is expressed as follows:

$$P/S_J = \frac{P_t}{S_{t+1}}$$

where:

$$P/S_J = the\ price\ to\ sales\ ratio$$
$$P_t = the\ price\ the\ stock\ in\ period\ t$$
$$S_{t+1} = the\ expected\ sales\ per\ share$$

To properly implement the relative valuation approach it is important to compare the various ratios and understand what factors affect each of the valuation ratios (Reilly and Brown, 2012: 333). The first step is to compare the multiples ratio to the comparable ratio for the market, and the second step is to explain the relationship. To do this, the factors that determine the specific relative valuation ratio are compared with the relevant factors for the stock being valued versus the same factors that affect the comparable ratio (Reilly and Brown, 2012: 333).

In the next section, the DCF and relative valuation approach are compared.

3.4 DCF VERSUS RELATIVE VALUATION APPROACH

Even though the DCF valuation approach is the preferred way of valuing companies, its lengthy process requires special skill and expertise (Wales, 2007. The use of the relative valuation approach is convenient and straightforward but it can be misleading (Wales, 2013). While the DCF valuation approach may be criticized for forecasting uncertain future events, analysts using the relative valuation approach estimate value by applying multiples to project revenues, EPS or EBITDA (Havnaer, 2012: 2). For this reason, the use of the relative valuation approach suffers from the same problem of forecasting future business events which is associated with the DCF valuation approach (Havnaer, 2012: 2).

In contrast to the relative valuation approach, the DCF valuation approach explicitly estimates all the value drivers of the company. Even though it may not be an easy task, (Havnaer, 2012: 1) believed that it is better to make explicit forecasts of the value drivers than to rely upon the relative valuation approach where the drivers are implied. The relative valuation approach does not explicitly consider whether the value drivers embedded in the multiple are reasonable (Havnaer, 2012: 2).

Empirical evidence (Lie and Lie, 2002 Barrow, Copin, Lange, Benoit, St-Cyr, Richardson and Pallard, 2001; Imam *et al*. 2008) suggest that valuation approaches do not work in isolation, instead they complement each other. Imam *et al.* (2008) observed that analysts use the DCF valuation approach when focusing on multi-period forecasts, while the relative valuations approach is useful for short term forecasts. Rady and Nunez (2012) argued that because of lack of comparable companies, the DCF valuation approach is used as a primary valuation approach in emerging markets, while the relative valuation approach acts as a secondary valuation approach.

Empirical evidence with regard to the accuracy of the DCF compared to the relative valuation approach is mixed. Arnold and Moizer (1984), Pike, Meerjanssen and Chadwick (1993), Barker (1999) and Demirakos, Strong and Walker (2004) perceived the relative valuation approach to be more accurate than the DCF valuation approach due to the large number of assumptions and forecasting errors associated with the DCF valuation approach. Contrary to Arnold and Moizer (1984), Pike *et al.* (1993) and Barker (1999), Rady and Nunez (2012: 111) argued that the "DCF valuation will be highly disseminated in emerging markets compared to developed markets in terms of usage due to the high growth of the former markets, leading to comparables being inaccurate and DCF being the most accurate". Furthermore, Rady and Nunez (2012) indicated that the lack of comparable companies in emerging markets may discourage the use of multiples as a stand-alone valuation methodology but they should rather act as secondary methods supporting the results obtained from the DCF valuation approach. Additional research by Kaplan and Ruback (1995) and Berkman, Bradbury and Ferguson (2000) suggested that both the DCF valuation approach and the relative valuation approach are useful valuation tools with similar levels of accuracy.

Having discussed the valuation approaches and their application in emerging markets, the following section discusses the application of these valuation approaches to bank valuation.

3.5 APPLICATION OF THE VALUATION APPROACHES TO BANK VALUATION

Adams and Rudolf (2006: 1) argued that in finance it is common to recommend a particular valuation model for a particular type of company. For instance, Kronimus (2002, cited in Adams and Rudolf, 2006: 1) developed a valuation model suitable for valuing young, fast-growing companies. Demirakos *et al*. (2004: 222) suggested that the selection of valuation approaches is dependent on industry-related factors, hence proper definition and understanding of bank characteristics facilitates the selection of the most appropriate valuation approach. Furthermore, a sector-wide comparison reviewed that analysts in industrial, media, retail and technology prefer similar valuation approaches, while the preferences of analysts in the financial sector differ from those of other analysts (Barth, Beaver and Landsman, 1998). The central focus of these valuation approaches is to consider the underlying characteristics of the company being valued. The following section therefore, presents a theoretical discussion on the application of the DCF and relative valuation approaches to bank valuation.

3.5.1 The DCF valuation approach

As noted in section 2.2, the DCF approach estimates the value of assets by discounting forecasted cash flows with an appropriate discount rate (Williams, 1938; Reilly and Brown, 2012; Damodaran, 2012). With this in mind, the value of the bank is driven by its ability to create cash flows in the future (Gross, 2006: 171-176). Even though the enterprise DCF model is widely used when valuing industrial companies, this tends not to be the case with banks (Koller *et al.* 2010: 769, Damodaran, 2012: 584). Instead, there is general agreement in the literature that it is more appropriate to use the equity DCF valuation when valuing banks (Copeland *et al.* 2000: 477; Gross, 2006: 48; Koller *et al.* 2010: 769; Damodaran, 2012: 584). Furthermore, Damodaran (2012: 584) argued that it makes more sense to value equity directly for banks, instead of the entire bank. This is largely supported for the reasons discussed below.

Banks' operating and financing activities are intertwined, that is, banks create value from both the liabilities and assets sides of their balance sheet, contrary to industrial companies where value is derived from the asset side only (Copeland *et al.* 2000: 477; Koller *et al.* 2010: 769; Damodaran, 2012: 584). Gross (2006: 18) argued that bank deposits from customers or loans from the money markets form part of both its operations and financing activities. For this reason, it becomes difficult and complex, especially for an outsider valuing the bank, to determine the correct cost of capital and to separate operating and financing activities, since these two activities are intertwined (Koller *et al.* 2010: 769).

Furthermore, the debt capital of banks is made up of different debt instruments with varying amounts and interest paid (Madura, 2012: 119). As a result, estimating the total cost of debt becomes complicated (Copeland *et al.* 2000: 477). Another reason is that the margin between the cost of equity and interest income is very small. As a result, slight errors in the calculation of cost of capital my result in significant variations in the final value of equity (Koller *et al.* 2010: 769). Since banks are highly levered, the cost of equity has an insignificant effect on the weighted cost of capital (Gross, 2006). The selection of the equity DCF model means that all the debt is considered as part of operations rather than financing activities (Gross, 2006: 36). Therefore, the equity DCF model is considered to be the most appropriate DCF valuation model to use when valuing banks (Gross, 2006: 37).

Even though the DCF valuation approach is frequently used when valuing banks, a study of the literature and an analysis of the empirical findings supports the view that the value obtained by this approach may be subjective, since it is based to a great extent on intuition and judgment about the bank's future returns and the associated risks (Deev, 2011: 34). Small adjustments of the input variables affect the final value significantly. Moreover, the DCF valuation approach does not entirely consider the specific characteristics of banks.

3.5.2 Relative valuation approach

It is asserted by Damodaran (2012: 600) that specific relative valuation approaches such as value-to EBITDA (earnings before interest tax, depreciation and amortisation) or value-to-EBIT (earnings before interest and tax) cannot be easily applied to value banks, since operating and financing activities for banks are difficult to separate. Gross (2006: 30) argued

that “equity multiples are much better suited for valuing banks than value multiples”. For this reason the two widely accepted equity multiples – P/E ratio and P/BV ratio – are explored below with regard to their application to bank valuation.

3.5.2.1 P/E ratio

The P/E ratio for banks is defined as the ratio of the price per share to earnings per share and is measured much in the same way as industrial companies (Damodaran, 2012: 600). It is averred by Damodaran (2012: 600) that the P/E ratio eliminates risk and is restricted to the return view. However, risk plays an essential role, especially when analysing the future performance of the bank. In addition, the quality of the underlying variables affects the explanatory power of the P/E ratio (Gross, 2006: 31). For this reason, the application of the price to earnings ratio is debatable since banks can easily manipulate the underlying variables of these multiples, for instance by manipulation of the risk policy measurements. This potential bias in the P/E ratio is even more difficult to determine for someone valuing the bank from outside (Copeland *et al.* 2000: 476-483). Furthermore, the application of the P/E to diversified banks is questionable, since reliable and valid results are achieved at business unit level (Damodaran, 2012: 600). Contrary to the discussion above, Imam *et al.* (2008) suggested in a survey-based study that analysts consider the P/E to be very important when valuing banks.

3.5.2.2 P/BV ratio

The P/BV ratio for banks expresses the price per share to book value of equity per share. The P/BV ratio is forward-looking and considers the market expectations concerning the future performance in invested capital (Gross, 2006: 32). The ability of the P/BV ratio to balance risk and profitability gives high explanatory power in contrast to the P/E ratio when valuing banks (Damodaran, 2012: 601). With regard to the application of the P/BV ratio Frykman and Toleryd (2003) suggested that it is most appropriate to use for capital-intensive industries such as financials and oil and gas, where tangible and financial assets are the source of value creation, while Reilly and Brown (2012: 332) argued that the P/BV ratio is widely used by analysts in the financial industry, since the value of most bank assets such as bonds and commercial loan have a value equal to the book value.

3.6 CHAPTER SUMMARY

This chapter focused on the last stage of the bank valuation process: valuation. In particular, the DCF and relative valuation approaches were discussed and compared with regard to valuation in emerging markets. Finally, their application to bank valuation was presented. The research design and methodology suitable to this study will be presented in chapter 4.

CHAPTER FOUR
RESEARCH METHODOLOGY

4.1 INTRODUCTION

Research methodology refers to the manner in which research data are gathered (Collins and Hussey, 2003). It is the plan for collecting and analysing the data gathered for the purposes of achieving the goals and objectives of any research. The research methodology is essential for the purposes of any research because it explicitly stipulates the target population, sampling method and motivation for selecting specific sampling techniques (Saunders, Lewis and Thornhill, 2009: 139). Furthermore, it helps to identify the data collection method and the rational for selecting a particular data collection method. Finally it helps the researcher to identify appropriate data analysis techniques, statistical tests, computer programs and the rational for using particular techniques.

Therefore, the purpose of this chapter is to provide an overview of how this research was structured and performed. In order to be able to achieve this, the research paradigm and research methodology are explained. Furthermore, the data collection process, data analysis, reliability and validity, and ethical issues are discussed.

4.2 RESEARCH PARADIGM

A research paradigm is a philosophical framework that guides how scientific research should be conducted. Identifying a suitable paradigm ensures that the research conducted has integrity, is reliable and repeatable (Remenyi, 1996: 5). For the purposes of this research a mixed methods research paradigm was adopted. The emphasis on a mixed methods research paradigm is based on the quantitative methods that were used to analyse the data and the qualitative nature of the research design that was used. Furthermore, an exploratory research approach which tries to explore an area where little is known was adopted in order to try and understand how experts value banks in emerging markets (Kumar, 2011). Usually the results of exploratory research are not useful for decision making alone, instead, they can provide significant insight into the subject matter (Saunders *et al.* 2009: 140). Furthermore, the results can neither be generalized nor be considered to represent the whole population under study (Saunders *et al.* 2009: 140).

4.3 RESEARCH METHODOLOGY

Research method is the overall approach to the research process, from theoretical foundation to the collection and analysis of the data (Collins and Hussey, 2003). Given the purpose of this study and what this research intends to achieve, the Delphi technique was deemed the most appropriate. This research methodology afforded the researcher the opportunity to explore the participants' opinions, subjective positions and experience and also analyse the data quantitatively. In order to understand this research methodology better, a detailed discussion of the characteristics of the Delphi technique and an explanation as to why it was considered appropriate for this research is provided in the next section.

4.4 THE DELPHI TECHNIQUE

The Delphi technique was developed in the 1950s by Norman Dalkey of the RAND Corporation in United States of America (Hsu and Sandford, 2007: 1). The Rand Corporation used the technique to 'obtain the most reliable consensus of opinion from a group of experts … by a series of intensive questionnaires interspersed with controlled opinion feedback' (Dalkey and Helmer, 1963: 459). Cuhls (2003: 94) defined the Delphi technique as a systematic, relatively structured and comprehensive technique in which a group communication process enables the collection of incomplete or multi-disciplinary knowledge from a panel of experts. Since the Delphi technique is based on the idea that "two heads are better than one, or ... *n* heads are better than one" (Dalkey and Rourke, 1971: 459), it helps to conduct detailed investigations on specific problems from a panel of experts for the purpose of generating a consensus of opinion on a subject matter. Hasson, Keeney and McKenna (2000: 1009) and Yang (2003) indicated that the main purpose of the Delphi technique is to build consensus opinion from a panel of experts with regard to any subject matter.

Researchers have in the past used the Delphi technique to set goals, forecast future events, develop models, explore or expose underlying assumptions or information leading to different judgments, conceptualize and develop the future and plan programs (Delbecq, Van de Ven and Gustafson; 1975: 84; Ulschak, 1983: 65; Turoff and Hiltz, 1996; Ludwig, 1997: 1; Hsu and Sandford, 2007: 2; Amos and Pearse, 2008: 95). Beech (1999: 281) reported that the Delphi technique helps to find data that would otherwise be difficult to find, while Miller

(2006) indicated that the Delphi technique tries to find "what could or should be" contrary to common surveys that attempt to investigate "what is".

4.4.1 Appropriateness of the Delphi technique to the study

The literature search discussed in chapters two and three supports the conclusion that not much research has been done with regard to the valuation of banks in emerging markets. These studies seem not to give much clarity on this subject as argued by Copeland *et al.* (2005) that the valuation of banks is still one of the unsolved mysteries in financial theory. Furthermore, Pereiro (2002a: iv) indicated that "industry practitioners and academics are yet to agree on how best they can deal with valuation issues in emerging markets". Recent valuation research has used surveys and interviews (Rudy and Nunez, 2012; Imam *et al.* 2010) instead of the Delphi technique.

Due to the exploratory nature of this study the Delphi technique is considered suitable for the purposes of this research because as noted by Amos and Pearse (2008: 96) that it is appropriate to use the Delphi technique when there is a "lack of agreement or incomplete state of knowledge concerning either the nature of the problem or the components which must be included in a successful solution" Furthermore, the use of the Delphi technique is consistent with previous studies which aimed to achieve consensus by a panel of experts such as digital archivist experts (Kelley, 2001), principals (Tottossy, 2005), information technology experts (Angus, 2012) and public experts supervisors (Magnuson, 2012). Refer to Appendix D for more detail.

As outlined in section 1.5, the purpose of this research is to try and develop a consensus of opinion among experts with regard to bank valuation in emerging markets. Being a consensus technique, the Delphi technique is aligned with the purpose of this research in that it focuses on developing a consensus of opinion on of a subject matter from a panel of experts. Furthermore, the use of expert opinion as a source of data is ideal considering the fact that bank valuation knowledge in emerging markets is incomplete and gathering expert opinion on valuation issues allows for in-depth and solid creation of knowledge.

Theoretically, the Delphi technique is characterised by three key features: anonymity of participants, iteration, and statistical aggregation of group responses. These are discussed below.

4.4.1.1 Anonymity of Delphi participants

The Delphi technique allows participants to freely express their opinions in the absence of external pressure to conform to other participants (Skulmoski, Hartman and Krahn, 2007: 2). This characteristic has the effect of eliminating dominant individuals which is often of main concern when using group-based surveys (Dalkey and Rourke, 1971: 15). Furthermore, confidentiality of participants is ensured by the geographic distribution of participants as well as the use of electronic communication such as online survey or e-mail when exchanging information (Skulmoski *et al.* 2007: 2). As a result, certain disadvantages associated with group-based surveys, such as pressure to conform to other participants and manipulation, are limited (Adams, 2001).

This feature was well suited for this research since analysts are considered to be highly secretive in their dealings. Furthermore, this feature allowed the researcher to reach international and geographically dispersed participants at relatively low cost compared with personal interviews and telephone surveys.

4.4.1.2 Iteration

Iteration refers to the feedback process (Ludwig, 1997: 2). The feedback process used by the Delphi technique allows the participants to improve their views in light of the progress of the group (Skulmoski *et al.* 2007: 4). It is designed in order to develop a consensus of opinion among the participants concerning the research problem. Ludwig (1997: 2) indicates that the feedback process is seen as a chain of rounds and in each round every participant is asked to work through a questionnaire which is returned to the researcher who will collect, edit and return to all participants a statement on the position of the whole group. In particular, the feedback process allows and encourages participants to revise their initial views about the information provided in previous iterations (Skulmoski *et al.* 2007: 4).

This feature was well suited for the purpose of this research as it enabled participants to reach consensus by reviewing their initial responses in light of the views of the entire panel. Furthermore, it also helped to enhance the reliability of the final results.

4.4.1.3 Statistical aggregation of group responses

The statistical aggregation of group responses allows for statistical analysis of the information (Skulmoski *et al.* 2007: 3). In particular, statistical analysis guarantees that views generated by participants are presented well in the final iteration since participants may not be in agreement at the end of the study (Dalkey and Rourke, 1971: 11).

This feature was well suited for the purpose of this research in that it allowed for objectivity and unbiased analysis of data, since all participants were under no pressure to conform to other participants' responses. Furthermore the statistical measures used in this study helped the researcher to ensure that all experts' opinions were represented in the final data analysis and provided information about consensus of experts (Kalaian and Kasim, 2012).

4.5 DATA COLLECTION

Data collection refers to the process of gathering information in an established and systematic fashion for the purposes of achieving the objectives of a research project (Sekaran and Bougie, 2011: 179). This process is necessary to ensure that data gathered are both defined and accurate and that subsequent conclusions based on the findings are valid (Saunders *et al.* 2009: 288). For the purpose of this research in terms of the data collection procedure, the following sections discusses the sample and sampling procedure, sample size, procedure for collecting data, the research instrument and the Delphi process.

4.5.1 Sample and sampling procedure

With regard to participant selection, choosing the most appropriate participant is the most important step in the entire Delphi technique, since it relates directly to the quality of results (Judd, 1972: 174; Jacobs, 1996). There is however, no set criteria found in literature with regard to the selection of participants: "throughout the Delphi literature, the definition of Delphi participants has remained ambiguous" (Kaplan, 1971). Jones and Twiss (1978: 18), however, reported that it is the responsibility of the researcher to select and identify the most

appropriate participants. Campbell, Shield, Rogers and Gask (2004: 429) argued that, to a greater extent, the definition of Delphi participant depends on the subject matter being investigated. It is therefore recommended that the researcher consider a specific set of selection criteria when selecting potential Delphi participants (Williams and Webb, 1994: 184).

Following the above argument, for the purpose of this study, participants were considered eligible if they had relevant experience plus a high level of background bank valuation knowledge in emerging markets. Furthermore, the researcher also considered the willingness of participants to review their initial answers for the purposes of reaching consensus. This criteria adopted in this research is similar to the one recommended by Hsu and Sandford (2007: 3).

Since this study depended on experts' opinions, participants were generally restricted to individuals who had sufficient knowledge of valuation of banks in emerging markets. Therefore purposive sampling, which refers to the selection of participants based on their expert ability to answer the research questions, rather than the general population was used in this research (Fink and Kosecoff, 1985: 45). The pool of experts who qualified for inclusion in this study consisted of two groups of professionals, namely:

- Senior analysts in emerging markets who were involved directly with valuation of banks; and
- Senior analysts in developed markets who were directly involved with valuation of banks in emerging markets.

Participants' contact information was obtained from the websites of institutions dealing with emerging market banks. Furthermore snowball sampling was also employed, where participants were asked to forward contact details of potential participants to the researcher.

4.5.2 Sample size

With regard to the required number of participants, no set number is stipulated in literature. Ludwig (1997: 3) reported that the number of participants for any Delphi study is generally

governed by the information processing capabilities of the researcher. Ziglio (1996: 14 cited in Adler and Ziglio, 1996) indicated that the number of experts selected cannot be considered from the standpoint of a statistical sample size, since the Delphi technique does not aim for a random sample from a population. Czinkota and Ronkainen (1997: 829) argued that the quality of experts is more important than the size of the panel. Dalkey and Rourke, 1971), however, indicated that the size of the panel is important since there is a direct relationship between the number of participants and reliability of results.

Witkin and Altschuld (1995: 202) reported that the approximate number of Delphi participants is generally less than 50, even though more have been used. Hasson *et al.* (2000: 1010) reported that the number of experts used in a Delphi study can range from 15 to over 60. Ludwig (1997) reported that most Delphi studies employ between 15 and 20 participants. Parente and Parente (2011: 1708) suggested that a Delphi study should be made up of at least 10 participants, while Brockhoff (1975, cited in Linstone and Turloff, 2002: 289) argued that the minimum acceptable size of a successful Delphi can be as low as four participants. Delbecq *et al.* (1975), Ziglio (1996: 14 cited in Adler and Ziglio, 1996) and Skulmoski *et al.* (2007: 2) indicated that a smaller group of 10-15 experts could be used if the background of the participants is similar. However, Kreber (2002) argued that a larger panel of more than 30 participants is recommended if the experts are from a heterogeneous background. Grobbelaar (2006) reported that reliability with a correlation coefficient close to 0.9 has been observed from a panel of 13 experts. An analysis of selected Masters and PhD Theses which employed the Delphi technique reviewed that researchers normally use between 10-50 participants. Refer to Appendix D for an illustration.

In short, the number of Delphi participants is variable (Delbecq *et al*. 1975). Hsu and Sandford (2007: 3), however, reported that if the number of participants is too small, the participants may be regarded as not having provided enough information concerning the research problem, while if the same size is too large, the disadvantages essential to the Delphi technique, such as low response rate and time consumption by participants and the researcher, may result. Following the above arguments and the nature of this study, a panel of 10-15 experts was considered to be appropriate as it is neither too small nor too large for the purposes of this research. Furthermore, due to the amount of training and education that

analysts go through, the experts who participated in this study were considered to be homogenous, highly qualified and experienced individuals who were capable of providing reliable and stable responses.

4.5.3 Procedure for collecting data

Traditionally, Delphi studies were based on paper and pen or through telephone (Day and Bobeva, 2005: 104). However, developments in information technology have allowed researchers to put the Delphi questionnaire online where participants can answer the questions and submit their responses (Skulmoski *et al.* 2007: 2-10). This makes it easier for the researcher to work with the responses, since they will all be in digital format. Saint-Germain, Ostrowski and Dede (2000: 164) reported that the email version of the Delphi technique has the advantage of quick responses and improved response rate. For this reason, the communication medium for this study was email: Specifically, the online survey service Lime Survey was used to distribute surveys and collect survey responses. This service allowed the researcher to compose each Delphi round questionnaire using simple online forms. The researcher then disseminated the questionnaire to each participant by emailing a unique link to each participant. The unique link allowed the researcher to record each response against each expert for administrative purposes. Once experts had completed the survey, the researcher was able to access and download the responses from participants via the admin interface on Lime survey. The domain name for the online survey was https://keith.limequery.com/.

4.5.4 The research instrument

The research instrument was a questionnaire. A questionnaire is a popular method for collecting data (Collins and Hussey, 2003: 174). It is defined as a list of carefully structured questions, chosen after careful consideration, with the view of obtaining reliable responses from the participants (Collis and Hussey, 2003: 173). Although an open-ended questionnaire is traditionally used in the first round, a structured questionnaire based on an extensive literature review was employed in the first round because usable basic information regarding the subject matter was obtained from the literature search as suggested by Kerlinger (1973). Hsu and Sandford (2007: 2) indicated that “it should be noted that it is both an acceptable and

a common modification of the Delphi process format to use a structured questionnaire in Delphi round one that is based upon an extensive review of the literature".

In order to avoid ambiguous questions being asked, the researcher conducted a comprehensive literature study before developing the Delphi round one questionnaire. According to Cooper and Schinder (2001:212), a researcher may use either a panel of experts to judge how well the questionnaire meets the standards, or his own judgment. For the purposes of this research, before the questionnaire was distributed to participants, a pilot study was conducted. The pilot study was aimed at refining the questions and determining the time it would take to complete the questionnaire. Several academics and graduate students were given the opportunity to participate in the pilot study. Their comments towards the question, invitation letter and answers to the questions helped the researcher to refine the structure and content of the questionnaire.

The questionnaire generated for the first Delphi round consisted of 19 questions which were divided into three sections:

- *Section one: General information*

The aim of this section was for the researcher to gather personal information about the participants. Participants were asked about their location, work experience and educational qualifications. This information was considered to be essential as it allowed the researcher to assess the quality of participants who participated in this study and consequently helped to validate the final results. Four questions were included in this section.

- *Section two: Valuation approaches*

This section was mainly concerned with questions about the valuation of banks in emerging markets. The questions in this section intended to answer the research questions illustrated in table 4.1.

Table 4.1: Structure of section two questions

Research question	Question number
Which type of security analysis do experts undertake when predicting the performance of banks in emerging markets?	5
How do experts compare the DCF with multiples valuation approach in relation to accuracy, popularity and manner of use?	6, 7, 17
How do experts resolve some of the practical issues of the DCF model?	9, 10, 11, 12, 13
Which variants of the DCF and multiples do experts use when valuing banks in emerging markets?	8, 14, 15, 16
What are some of the challenges encountered by experts when valuing banks in emerging markets?	18

- *Section three: Cost of equity*

This section was mainly concerned about the estimation of the cost of equity. The questions were aimed at answering the following research question:

Table 4.6: Structure of section three questions

Research question	Question number
How do experts compute cost of equity for banks in emerging markets?	19

Delphi rounds two and three questionnaires are briefly discussed in section 4.5.4 below under the Delphi process.

4.5.5 The Delphi process

Theoretically, the Delphi process can be a continuous process up until consensus is reached (Hsu and Sandford, 2007: 3). Rowe and Wright (1999: 353-365) argued that the number of rounds should rarely exceed three as this discourages boredom and frustration which can lead to a high attrition rate amongst panel members. Brooks (1979: 379), Ludwig (, 1997), Custer, Scarcella and Stewart (1999) and Hsu and Sandford (2007:4) indicated that three Delphi rounds are often enough to reach a consensus and collect the required information. Kreber (2002: 155) indicated that the required number of Delphi rounds depends on the information gathered at different stages in the research process and the research question under investigation. Following the above argument, the following section provides guidelines for up to three iterations that were employed to collect data for the purpose of this study. This

approach was considered to provide a balance between reaching consensus and ensuring that a significant number of participants complete the study. A visual representation of the Delphi process is outlined in table 4.1 below.

Table 4.2: The Delphi process

1. <u>Delphi planning</u> • Transposing the valuation practices into a set of questions • Formation of the set of criteria for participants selection • Preparing the set of questionnaires and supporting letters
2. <u>Selection of participants</u> • Identification of potential participants in the Delphi study • Arranging the dispatch of the Delphi round one questionnaire
3. <u>Pilot study</u> • Conduct pilots of the questionnaire • Amendments of the design and content as per the recommendations of the participants in the pilot
4. <u>Delphi Round one</u> **Sample size: 138** • Purpose: To share views on the information that was obtained from the literature search while at the same time gathering additional information with regard to the subject matter. • Total number of responses: 18 out of 138 • Monitoring of the return rate: 13.0% • Monitoring any recommendations to the design of the questionnaire. • Send 4 consecutive weekly reminders via e-mail a week after the first questionnaire is sent to participants.
5. <u>Progress to Delphi Round two or termination of Delphi survey</u> • Review of the results of round one • 18 is considered as acceptable sample size: Proceed to Delphi round two
6. <u>Delphi Round 2</u> **Sample size: 18** • Purpose: For participants to rate their views based on the outcomes of the first Delphi round on a five point Likert scale. • Monitoring the return rate: 72.2% • Send 4 consecutive weekly reminders via e-mail a week after the second questionnaire is sent to participants.
7. <u>Progress to Delphi Round three or termination of Delphi survey</u> • Analysis of results from Delphi round two • 13 is considered as acceptable sample size: Proceed to Delphi round three

8. <u>Progress to round 3</u> **Sample size: 13** • Purpose: To provide participants with the opportunity to review their individual opinions in light of the panel mean. • Monitoring the return rate: 100% • Send 4 consecutive weekly reminders via e-mail a week after the questionnaire for Delphi round three is sent to participants.
9. <u>Progress to Delphi Round 4 or termination of the Delphi survey</u> • Analysis of the results from Delphi round three • Little variation of opinions and size of sample: Termination of Delphi survey
10. <u>Analysis of Delphi results</u> • Analysis of the results • Consideration and analysis of the qualitative feedback, i.e. the comments of the participants.

Source: Own contribution

The following section gives a detailed account of all three Delphi rounds.

4.5.5.1 Delphi round one

In the initial stages of the study, an email cover letter was sent to 160 eligible Delphi participants, inviting them to participate in this study. Refer to Appendix E for a copy of the invitation email. The letter contained information about the purpose, context, and estimated time for completing the questionnaire and the structure of whole study. Furthermore, a unique hyperlink which when clicked directed participants to the online questionnaire in their default browser was contained in this email. Refer to Appendix F for an illustration of the Delphi one questionnaire. A week into Delphi round one, four consecutive weekly reminders were sent out to all participants who had either not completed the survey or indicated their intention not to be included in the study. Refer to Appendix G for a copy of the reminder.

The purpose of the first Delphi round was for participants to share their views on the information that was obtained from the literature search, while at the same time providing additional information with regard to the subject matter. Of the 138 emails that reached their intended destination 18 usable responses were considered for analysis and use in Delphi round two. Refer to section 5.2 for a detailed discussion of the response rate. After Delphi round one was terminated, an email thanking participants and asking them to look out for the

next Delphi round was sent. Refer to Appendix H for a copy of the letter. The researcher then analysed the responses and decided to proceed to Delphi round two. Refer to section 4.6, for a detailed discussion on how the data was analysed.

4.5.5.2 Delphi round two

As a result of the data analysis of Delphi round one, the questionnaire for Delphi round two was developed. The questionnaire that was developed required participants to rate their views based on the outcomes of the Delphi round one on a five point Likert scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree. In order to try and understand some of the views of experts, some qualitative questions were also asked in this round. Refer to Appendix I for a copy of the questionnaire.

An invitation email was sent only to the 18 participants who participated in the first Delphi round. Refer to Appendix J for a copy of the email. One week into Delphi round two, four consecutive weekly reminders were sent to all participants who had not completed the survey or indicated their intention not to continue in the study. Refer to Appendix K for a copy of the reminder. Of the 18 participants that were invited to participate in Delphi round two, 13 usable responses were received and analysed, giving a response rate of 72.2 percent. Once Delphi round two was terminated, an email thanking and asking participants to look out for the next Delphi round was sent. Refer to Appendix L for a copy of the letter.

Again, the data gathered was analysed and the information was used to generate the questionnaire for Delphi round three. After an analysis of Delphi round two responses, the researcher started to realise the formation of preliminary consensus among experts. This observation was aligned to the assertions by Hsu and Sandford (2007) that consensus begins to take shape in the second round of the Delphi.

4.5.5.3 Delphi round three

As indicated above, the data gathered in Delphi round two was used to generate the questionnaire for Delphi round three. Refer to Appendix M for a copy of the questionnaire. The questionnaire that was generated for Delphi round three looked similar to the one that was used in Delphi round two except that the questionnaire in Delphi round three contained

the results of the panel mean from Delphi round two on each question. This additional information offered participants the opportunity to review their individual opinions in light of the panel mean, giving them the opportunity to change their individual responses if they chose to. The data gathered in this round formed the basis for answers to the research question.

An invitation email was sent the 13 participants who participated in the second Delphi round. Refer to Appendix N for a copy of the email. One week into Delphi round three, four consecutive weekly reminders were sent to all participants who had not completed the survey or indicated their intention not to continue in the study. Refer to Appendix O for a copy of the reminder. Of the 13 participants that were invited to participate in Delphi round two, 13 usable responses were received and analysed, giving a 100 percent response rate. Once Delphi round three was terminated, an email thanking participants for their participation in this research was sent. Refer to Appendix P for a copy of the letter. The whole data collection process lasted close to six months.

The following section presents a detailed discussion of how the data gathered from all three Delphi rounds was analyzed.

4.6 DATA ANALYSIS

Data analysis refers to the process of extracting, compiling and modelling raw data for the purposes discovering useful information that can be applied to formulating conclusions, predicting outcomes or supporting decision-making on an area of interest (Cant, Gerbel-Nel and Kotze, 2003: 50). For the purposes of this research, data analysis was divided into structured questions and qualitative questions. These two processes will be discussed in the next two sections.

4.6.1 Structured questions

According to Hsu and Sandford (2007: 2), the type of data analysis used for a Delphi study is at the discretion of the researcher. In this case, the data gathered in Delphi round one were analyzed using descriptive statistics. Scheibe, Skutsch and Schofer (1975: 258), however, reported that the use of descriptive statistics alone is insufficient. For this reason, statistical

measures of central tendency such as means, medians and modes, and levels of dispersion such as standard deviation were calculated using Microsoft Excel in the second and third round (Hasson *et al.* 2000). Hsu and Sandford (2007: 2) reported that the use of median and mode is generally favoured by researchers, while Witkin (1984) questioned the appropriateness of mean, especially when the scale used to measure participants' responses is not marked at equal intervals. For the purposes of this research mean was used as the main measure of central tendency even though the mode and median were also considered.

For a Delphi study, researchers are mostly interested in the level of consensus among experts with regard to the subject matter (Holey, Feeley, Dixon and Whittaker, 2007: 2; Hsu and Sandford, 2007: 2). Williams and Webb (1994: 184) defined consensus as a majority view. It indicates agreement among experts with regard to the statements of the topic under consideration. Linstone and Turoff (1975) cited in Amos and Pearse (2008: 96) indicated that "consensus is typically observed through the convergence of variances or the decrease of standard deviations in subsequent iterations". Hasson *et al.* (2000: 1010) and Holey *et al.* (2007: 2) however argued that there is no universally acceptable way among Delphi researchers with regard to appropriate statistical measures that should be used to justify the final Delphi results (consensus). Therefore, for the purpose of this study, as suggested by Grobbelaar (2006) a decision was made on the level of consensus in terms of the standard deviation as described in table 4.3 below.

Table 4.3: Decision criteria for the level of consensus reached

Standard deviation	**Level of consensus achieved**
$0 \leq x < 1$	High level
$1 \leq x < 1.5$	Reasonable or fair level
$1.5 \leq x < 2$	Low level
$2 \leq x$	No consensus

Source: Grobbelaar (2006: 14)

Once round three was completed, Spearman's Rank Correlation Coefficient was used to analyse the ratings of the experts on a particular question from round two and round three. According to Kalaian and Kasim (2012: 7), the Spearman's rank correlation represents the

correlation between the ranks of the ratings or responses of the experts for each of the items in the Delphi survey. Mathematically, it is represented by the following formula:

$$r_s = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

where:

$$r_s = Spearman's\ Rank\ Correlation\ Coefficient$$

$$d_i = the\ difference\ between\ the\ ranks\ of\ the\ ratings\ on\ the\ responses$$

n= the number of experts in a panel

The value of r_s always falls between plus 1 and minus 1. Plus 1 indicates perfect positive correlation between the responses on an item from two consecutive rounds, while minus 1 indicates negative correlation between the responses on an item from two consecutive rounds (Kalaian and Kasim, 2012: 7).

4.6.2 Qualitative questions

Hsieh and Shannon (2005: 1278) defined content analysis as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns". Collins and Hussey (2003: 165) defined content analysis as "a method by which selected items of qualitative data are converted to numerical data". For the purpose of this research the researcher made use of qualitative content analysis, especially in Delphi round two. Qualitative content analysis was preferred on open-ended questions as it extends far beyond word counts to examine meanings, themes and patterns that may be manifest or hidden in particular text (Zhang and Wildmuth, 2009: 1). It afforded the researcher the opportunity to understand reality in a subjective but scientific manner. The technique is made particular rich and meaningful by its reliance on coding and categorizing of data (Collis and Hussey, 2003:164).

Section 4.7 below presents a detailed discussion on the reliability and validity of this study.

4.7 RELIABILITY AND VALIDITY

Reliability refers to the absence of variances in the results if the study were repeated, while validity refers to the extent to which the research outcomes accurately reflect the subject matter (Collis and Hussey, 2003: 164). Whitelaw (2001: 2) argued that validity and reliability are important criteria employed when assessing whether a study provides a good measure. Therefore, validity and reliability are vital in establishing the quality of the research (Angus, 2012: 38). For this reason, it is essential to deliberate how well the requirements of validity and reliability were met by this study.

Angus (2012: 38) argued that the nature of the Delphi technique promotes validity and reliability in that there are continuous iterations of interaction between participants, reviewing previous opinions and obtaining consensus of opinion. This allows for validation of the findings of each round against the participants (i.e. source of information) and increases the reliability of the information collected. Furthermore, the fact that the Delphi technique gathers opinions of experts with extensive knowledge and experience in the field (i.e. valuation of banks in emerging markets) also increases validity and reliability. Baker, Lovell and Harris (2006: 59) indicated that "within consensus methods of research, especially Delphi panel techniques, the use of 'experts' is fundamental to reliability". The pilot study that was conducted when Delphi round one questionnaire was generated also contributed to the reliability and validity of this study.

4.8 ETHICAL CONSIDERATIONS

Remenyi (1998: 109) indicated that researchers need to understand what is right and wrong in order to ensure that duties and information are handled ethically. For the purpose of this research the ethical norm of voluntary participation was employed throughout the study and the researcher was responsible for informing the participants about the nature of the research and its purpose and objectives. The researcher also ensured an informed voluntary consent by means of a consent form that was attached to all three Delphi questionnaires.

The participants were also made aware of the importance of the research and that the information gathered would remain anonymous and confidential and would only be used for academic purposes. For the purpose of this research, anonymity meant that participants were

assured that they would not be identified with any of the opinions they expressed (Collis and Hussey, 2003: 45). This was done for two reasons. Firstly, it allowed participants to be completely honest without concern over what others thought of their opinion. Secondly, experts have strict rules regarding confidentiality and whether opinions would be seen as originating from the firm or from the individual. Confidentiality in this study entails that the data collected was going to be used in such a way that the information is not traceable to any particular individual (Collis and Hussey, 2003: 46). Lastly, the findings of this study were used for academic purposes only.

4.9 CHAPTER SUMMARY

This chapter clearly outlined how this research was structured and performed. Firstly, in sections 4.2 and 4.3 the research paradigm and methodology were discussed. The Delphi technique, which is the research methodology adopted for this research, was discussed in section 4.4. Lastly, in sections 4.5 to 4.9 the data collection process, data analysis, validity and reliability and ethical considerations pertaining to this research were discussed.

The next chapter presents the findings and discussion of the findings relative to the literature presented in chapters two and three.

CHAPTER FIVE
FINDINGS AND DISCUSSION

5.1 INTRODUCTION

The purpose of this chapter is to present the findings of this research and discuss the findings with respect to the literature discussion in chapters two and three. The literature review in chapter two focused on the bank-specific characteristics, and the bank valuation process was introduced and discussed. The valuation process consists of five stages: bank-specific analysis, industry analysis, macroeconomic analysis, forecasting and valuation. A detailed discussion of the first four stages was covered in chapter two, while the last stage, which focused on the valuation approaches, was dealt with in chapter three.

The sections in this chapter deal with the analysis and discussion of data obtained from experts after the Delphi rounds. As discussed in chapter 4 section 4.5.4 the purpose of Delphi round one was to narrow down the information obtained from the literature survey and at the same time gather additional information, while Delphi round two required participants to rate their views based on the outcomes of the Delphi round one on a five-point Likert scale. Finally Delphi round three offered participants the opportunity to review their individual opinions in light of the panel mean, giving them the opportunity to change their individual responses if they chose to.

As outlined in section 4.6, a combination of descriptive and statistical measures of central tendency such as mean, median and mode and level of dispersion such as standard deviation were used to analyse the data gathered. Furthermore, in order to achieve the purpose of this study, a decision was made on the level of consensus in terms of the standard deviation as outlined in section 4.6.1.

Each section in this chapter is aimed at answering the research questions outlined in section 1.5. The tables illustrating the responses obtained from the Delphi round one are illustrated from Appendices Q-AC, while Delphi rounds two and three responses are illustrated in this chapter together with the relevant explanation and discussion.

This chapter is arranged as follows: in section 5.2 the response rates for all three Delphi rounds are provided, and section 5.3 presents the demographic information. The findings and discussion of findings are presented in sections 5.4 to 5.10. In section 5.11 a summary of the qualitative findings from qualitative questions is presented. Finally a summary of the chapter is provided in section 5.12.

5.2 RESPONSE RATE

As indicated in section 4.5.4, the data for this study was collected by means of the Delphi technique which consisted of three Delphi rounds. The response rates for all three rounds are presented in table 5.1 below.

Table 5.1: Response rate

	Responses		**No answer**		**Bounced**		**Total**	
	#	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Delphi round 1	18	13.0%	120	87.0%	22	7.5%	160	100%
Delphi round 2	13	72.2%	5	27.8%	0	0.0%	18	100%
Delphi round 3	13	100.0%	0	0.0%	0	0.0%	13	100%

Note: #= number, %= percentage

For the purpose of this research, the response rates for all three rounds were considered to be valid for the following three reasons:

- The panel of experts was large enough for the researcher to manage (it was not too small or too large). Refer to section 4.4.2 for a detailed discussion.
- The group was homogeneous and as a result their opinions were considered to be valid. Refer to section 4.4.2 for a detailed discussion.
- The response rates were within the expected range of 10-15 participants for the purpose of this study. Refer to section 4.2 for a detailed discussion.

Furthermore, the literature in section 2.4.3 supported the response rate considered for this study. In fact, it suggests that the minimum number to make up a Delphi panel is four and a smaller group of 10-15 experts could be used if the background of the participants is homogeneous (Delbecq *et al.* 1975; Ziglio, 1996; Skulmoski *et al.* 2007: 2).

Section 5.3 below identifies and discusses the demographic information of the analysts who participated in this study. As outlined in chapter four, this information was used to assess the quality and validate responses obtained from experts.

5.3 DEMOGRAPHIC INFORMATION

In table 5.2 below the participants are delineated by their continent of residence, work experience, highest level of education and professional qualification.

Table 5.2: Demographic information

Demographic		**#**	**%**
Continent	Africa	10	55.56%
	Australia	1	5.56%
	Europe	2	11.11%
	Latin America	3	16.67%
	North America	1	5.56%
	South America	1	5.56%
Experience in valuing banks	1-5 years	6	33.36%
	6-10 years	9	50.04%
	10+ years	2	11.12%
	Not expert in valuing banks	1	5.56%
Highest education	3 or 4 year degree	9	50.00%
	Masters	7	38.89%
	Doctorate	2	11.11%
Professional qualification (CFA, CA or similar)	Yes	8	44.44%
	No	10	55.56%

The largest number of analysts (55.56%) who responded to the questionnaire resided in Africa. With regard to experience, 50.04% of the analysts had between 6-10 years' experience. A large number of analysts (50.00%) had 3-4 year degrees, 38.89% had Masters degrees and two had Doctorates. Almost half (44.48%) of the analysts held a professional qualification of some sort (CFA, CA or similar). The demographic information presented in table 5.2 illustrates that the analysts who participated in this study were highly qualified and experienced individuals suitable for providing a meaningful contribution towards the success of this study.

In section 5.4 below, experts were required to indicate the type of analysis that they undertake when valuing banks in emerging markets. Refer to section 2.3 for a detailed discussion and explanation of these aspects.

5.4 TYPES OF ANALYSIS UNDERTAKEN

The responses presented in this section were aimed at providing answers to the following research question: Which type of analysis do experts undertake when predicting the performance of banks in emerging markets? This question was intended to establish the type of analysis that analysts undertake when analysing the performance of banks in emerging banks.

5.4.1 Delphi round one

The results for Delphi round one are summarised in Appendix Q. The results indicate that 88.89% of experts conduct macro-economic analysis, 83.36% industry analysis and 88.89% bank-specific factor analysis. From these results it is clear that the respondents felt that all three types of analysis are essential when valuing banks in emerging markets.

In section 5.4.2 the revised feedback from Delphi rounds two and three with regard to the level of agreement of experts on the type of analysis performed when valuing banks in emerging markets are presented and discussed.

5.4.2 Delphi rounds two and three

Table 5.3 below presents the feedback received from experts in Delphi rounds two and three with regard to their level of agreement on the importance of bank-specific, industry and macroeconomic analysis when valuing banks in emerging markets.

Table 5.3: Type of Analysis

	Round 2				**Round 3**				
	Mean	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	$\mathbf{r_s}$
Industry analysis	4.538	5.000	5.000	0.660	4.625	5.000	5.000	0.518	0.975
Macro-economic analysis	4.077	4.000	4.000	0.862	4.615	4.500	5.000	0.506	0.964

Bank-specific factor analysis	4.077	4.000	4.000	0.862	4.625	5.000	5.000	0.518	0.978

Note: 5= strongly agree, 4=agree, 3= neutral, 2= disagree, 1= strongly disagree, 0= no answer

After Delphi round three the mean for bank-specific, industry and macroeconomic analysis was greater than 4, and the standard deviation was greater than or equal to 0 but less than 1 ($0 \leq x < 1$). Furthermore, the Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of feedback obtained from experts between Delphi rounds two and three. Given the results above, it was concluded that experts reached a relatively high level of consensus with regard to this particular question, suggesting that bank-specific, industry and macroeconomics analysis are essential when analyzing the performance of banks in emerging markets.

The consensus reached by experts on this particular research question is consistent with the literature in sections 2.4.1, which indicates that when forecasting the performance of banks it is essential to predict the bank-specific, macroeconomic and industry factors (Gross, 2006: 65; Koller *et al.* 2010: 767). Furthermore Levy and Post (2005) suggested that valuation requires careful analysis of the general economic prospects, competition and quality of management of the institution being valued. McCallum (2009: 19) and Koller *et al.* (2010: 767) indicated that since banks are highly leveraged they are significantly affected by fluctuations in the overall economy. Furthermore it can be established that this finding replicates the findings of Shaher *et al.* (2011) and Ongore and Kusa (2013) (outlined in section 3.4.1) which suggests that bank-specific, industry and macroeconomic factors have a significant effect on the performance of banks. Therefore, when valuing banks it is very important to consider the value drivers of the bank, their business activities and how they create value (Koller *et al.* 2010: 771).

In section 5.5 below the responses obtained with regard to the level of agreement of experts on important bank-specific, industry and macroeconomic factors when analysing the performance of banks in emerging markets are presented and discussed.

5.5 MACROECONOMIC, INDUSTRY AND BANK-SPECIFIC DETERMINANTS OF BANK PERFOMANCE

The feedback presented in this section was aimed at providing answers to the following research question: Which macroeconomic, industry and bank-specific factors do experts consider when valuing banks in emerging market banks? This question sought to find the important macroeconomic, industry and bank-specific factors considered by analysts when valuing banks in emerging markets.

5.5.1 Delphi rounds two and three

5.5.1.1 Macroeconomic factors

Table 5.4 below presents feedback obtained from expects after Delphi rounds two and three with regard to the level of agreement of experts on important macroeconomic factors when analysing the performance of banks in emerging markets.

Table 5.4: Macroeconomic factors

	Round 2				Round 3				
Factor	**Mean**	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
Inflation rate	3.923	4.000	4.000	0.760	4.385	4.000	4.000	0.506	0.967
Economic growth-GDP and GNP	4.308	4.000	5.000	0.751	4.462	4.000	4.000	0.519	0.978
Extent of e-business and e-commerce	4.154	4.000	5.000	0.987	4.000	4.000	4.000	0.408	0.951
Level of interest rate	4.154	4.000	5.000	0.987	4.615	5.000	5.000	0.506	0.945
Exchange rates	4.077	4.000	4.000	0.641	4.462	4.000	4.000	0.519	0.997
Political stability	3.769	4.000	4.000	1.013	4.154	4.000	4.000	0.801	0.937
Country risk	4.231	5.000	5.000	1.013	4.077	4.000	4.000	0.954	0.940
Government spending	3.538	4.000	4.000	1.127	3.077	3.000	4.000	1.115	0.868
Money supply	3.538	4.000	4.000	0.877	2.846	3.000	2.000	1.068	0.948
Tax systems and tax rates	2.615	4.000	5.000	1.261	2.154	2.000	3.000	1.144	0.923

Note: 5= strongly agree, 4=agree, 3= neutral, 2= disagree, 1= strongly disagree, 0= no answer

After Delphi round three, the mean, median and mode for inflation rate, GDP, extent of e-business and ecommerce, level of interest rate, exchange rates and political stability were greater than 4 while the standard deviation was greater than or equal to 0 but less than 1 ($0 \leq x < 1$). The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of the feedback obtained from experts between Delphi rounds two and three. As a result it was concluded that experts reached a relatively high level of consensus with regard to these six macroeconomic factors. These results showed that all six macroeconomic factors discussed above are essential when analysing the performance of banks in emerging markets.

The findings discussed above are consistent with Gross (2006) and Koller *et al.* (2010) who indicated, as discussed in section 3.2.1, that with regard to macroeconomic factors, it is important to consider inflation rate, economic growth – GDP and GNP, country risk, interest rate and exchange rate when analysing the performance of banks.

On the other hand, mean, median and mode for government spending, money supply and tax systems and tax rates ranged between 2 and 4 and the standard deviation was greater than or equal to 1 but less than 1.5 ($1 \leq x < 1.5$). Furthermore, the Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. As a result it was concluded that experts achieved a fair level of consensus ($1 \leq x < 1.5$) with regard to these three factors. These results indicate that not all experts consider these three macroeconomic factors when analyzing the performance of banks.

At the time of this analysis, no relevant literature was found with which to compare the findings for government spending, money supply and tax systems and tax rates.

In section 5.5.1.2 below, the feedback from experts in Delphi rounds two and three with regard to the level of agreement of experts on important industry factors when analysing the performance of banks in emerging markets are presented and discussed.

5.5.1.2 Industry factors

Table 5.5 below presents the feedback obtained from expects after conducting Delphi rounds two and three with regard to the level of agreement of experts on important industry factors when analysing the performance of banks in emerging markets.

Table 5.5: Industry factors

	Round 2				Round 3				
Factor	**Mean**	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
Industry growth rate	4.077	4.000	4.000	0.760	4.077	4.000	4.000	0.277	0.978
Business cycle	4.385	5.000	5.000	0.768	4.538	5.000	5.000	0.519	0.967
Number of banks in the market	3.923	4.000	4.000	0.954	4.000	2.000	2.000	0.816	0.931
Banking regulation	3.692	4.000	4.000	1.032	4.154	4.000	4.000	0.630	0.940
Threats of new entrance	4.231	5.000	5.000	1.013	4.077	4.000	4.000	0.954	0.940
Level of competition between banks	4.077	4.000	4.000	0.641	4.538	5.000	5.000	0.519	0.967
Number of customers	2.692	3.000	3.000	1.032	3.077	3.000	2.000	1.188	0.904

Note: 5= strongly agree, 4=agree, 3= neutral, 2= disagree, 1= strongly disagree, 0= no answer

The mean for industry growth rate, business cycles, number of banks, banking regulation, threats of new entrants and number of customers were greater than 4 and the standard deviation was greater than or equal to 0 but less than 1 ($0 \leq x < 1$). The Spearman's Rank correlation coefficient with regard to this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. As a result it was concluded that experts reached a relatively high level of consensus concerning these six industry factors. These results further indicate that the industry factors discussed above are essential when analyzing the performance of banks in emerging markets.

The assertions echoed by Rezaee (2001) and Gross (2006) (refer to section 3.2.1) that the product life cycle of the banks' products is not a good indicator of the future performance of banks is inconsistent with experts' consensus achieved in this research. Furthermore, the claims echoed by Barlinge *et al.* (2002) and Damodaran (2012: 583) (refer to section 2.2) that the number of banks in the market, industry growth rate and bank regulation in the market has a significant effect on the performance of banks is consistent with the findings of the research.

In section 5.5.1.3 below, the feedback obtained in Delphi rounds two and three with regard to the level of agreement of experts on important bank-specific factors when analysing the performance of banks in emerging markets is presented and discussed.

5.5.1.3 Bank-specific factors

Table 5.6 below presents the feedback obtained from experts in Delphi rounds two and three with regard to the level of agreement of experts on important bank-specific factors when analysing the performance of banks in emerging markets.

Table 5.6: Bank-specific factors

	Round 2				**Round 3**				
Factor	**Mean**	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
Quality of management	4.231	4.000	5.000	0.832	4.077	4.000	4.000	0.641	0.739
Level of capitalization	4.154	4.000	4.000	0.689	4.077	4.000	4.000	0.494	0.975
Credit risk	4.077	4.000	4.000	0.641	4.538	5.000	5.000	0.519	0.967
Size of the bank	4.308	5.000	5.000	0.855	4.462	5.000	5.000	0.660	0.967
Business strategy	4.385	5.000	5.000	0.768	4.538	5.000	5.000	0.519	0.967
Financial analysis (e.g ratio analysis)	4.154	4.000	4.000	0.555	4.308	4.000	4.000	0.480	0.984
Loan loss provision	3.769	4.000	5.000	1.423	3.000	3.000	4.000	1.472	0.896

Note: 5= strongly agree, 4=agree, 3= neutral, 2= disagree, 1= strongly disagree, 0= no answer

The mean of quality of management, level of capitalization, credit risk, size of the bank, business strategy, financial analysis (e.g ratio analysis) and loan loss provision were greater than 4 and the standard deviation was greater than or equal to 0 but less than 1 ($0 \leq x < 1$). The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of the feedback obtained from experts between Delphi rounds two and three. As a result it was concluded that experts reached a relatively high level of consensus concerning these six bank-specific factors, meaning that these factors are essential when analyzing the performance of banks in emerging markets.

With the exception of loan loss provision, the consensus achieved by experts on this particular question is consistent with the literature (see section 3.4.3) which indicates that the quality of management, level of capitalization, credit risk, size of bank, business strategy and financial ratios have a significant effect on the performance of banks (Koller *et al.* 2010: 772).

In section 5.6 below, the feedback from experts with regard to how experts compare the DCF and multiples valuation approach when valuing banks in emerging markets is presented and discussed.

5.6 DCF MODEL COMPARED TO MULTIPLES

The feedback presented in this section was aimed at providing answers to the following research question: How do experts compare the DCF with the multiples valuation approach in relation to accuracy, popularity and manner of use? This question sought to establish the perception of analysts with regard to accuracy, popularity and manner of use.

5.6.1 Delphi round one

5.6.1.1 Popularity of DCF versus the multiples valuation approach

Appendix R presents the feedback obtained from expects in Delphi round one with regard to the popularity of the DCF and multiples valuation approaches when valuing banks in emerging markets. The results indicate that 77.78% of the experts perceived the DCF as popular in comparison to 16.67% who were in support of multiples.

5.6.1.2 Accuracy of DCF versus multiples valuation approaches

Appendix S presents the feedback from expects in Delphi round one with regard to the accuracy of the DCF versus multiples valuation approach when used to value banks in emerging markets. The feedback in Delphi round one suggested that most of the experts (77.77%) perceive the DCF to be more accurate.

5.6.1.3 Primary versus secondary use of the DCF and multiples valuation approaches

Appendix T presents the feedback obtained from experts in Delphi round one with regard to whether the DCF and multiples valuation approaches are used as primary or secondary valuation methods when valuing banks in emerging markets. The results indicated that most experts (66.66%) use the DCF valuation approach as a primary valuation method while 61.11% of the experts use multiples valuation approach as a secondary valuation method.

In section 5.6.2 the feedback obtained after Delphi rounds two and three with regard to the level of agreement of experts on the popularity, accuracy and primary versus secondary use of the DCF and multiples valuation approaches when valuing banks is presented and discussed.

5.6.2 Delphi rounds two and three

Table 5.7 below presents the feedback obtained from expects with regard to the level of agreement of experts on the popularity, accuracy and primary versus secondary use of the DCF and multiples valuation approaches when valuing banks.

Table 5.7: DCF versus the multiple valuation approach

	Round 2				**Round 3**				
	Mean	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
The DCF is more popular than multiples	4.154	4.000	4.000	0.689	4.385	4.000	5.000	0.650	0.975
The DCF is more accurate than multiples	4.077	4.000	4.000	0.862	4.154	4.000	4.000	0.689	0.964
DCF is used as a primary valuation method while multiples are used as	4.000	4.000	4.000	0.913	4.308	4.000	4.000	0.480	0.973

secondary valuation method									

Note: 5=strongly agree, 4= agree, 3= neutral, 2=disagree, 1=strongly disagree, 0= no answer.

The experts' views listed in table 5.7 above are discussed separately in more detail below.

5.6.2.1 Popularity of DCF versus multiples valuation approach

According to the responses from Delphi rounds two and three, mean, median and mode with regard to the popularity of the DCF versus multiples valuation approach were greater than 4 and the standard deviation was greater than or equal to 0 but less than 1 ($0 \leq x < 1$). The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. Therefore it was concluded that experts reached a relatively high level of consensus concerning the popularity of the DCF versus multiples valuation approach. These results mean that experts perceive the DCF valuation approach as more popular when valuing banks in emerging markets.

The consensus achieved by experts confirmed the findings of Pereiro (2002b) and Rady and Nunez (2012) that the DCF is the most popular valuation approach in emerging markets. Furthermore the literature, as discussed in section 2.5.4, also suggested that analysts frequently use the DCF valuation approach when valuing banks (Razaee, 2001: 182). The literature attributes the popularity of the DCF valuation approach to its ability to reflect the high growth rate associated with companies in emerging markets as suggested by Rady and Nunez (2012: 112).

5.6.2.2 Accuracy of DCF versus multiples valuation approaches

According to the responses, mean with regard to the accuracy of the DCF versus multiples valuation approach were greater than 4 and the standard deviation was 0.689 after Delphi round three. The Spearman's Rank correlation coefficient on this particular question was positive (0.964), indicating positive correlation of the feedback obtained from expects between Delphi rounds two and three. Given the results above, it was concluded that experts reached a relatively high level of consensus concerning the accuracy of the DCF versus multiples valuation approach. This conclusion shows that experts perceive the DCF valuation approach to be more accurate when valuing banks in emerging markets.

Even though Anold and Moizer (1984), Pike *et al.* (1993), Barker (1999) and Demirakos *et al.* (2004) perceived the DCF valuation approach to be inaccurate, the consensus of experts achieved in this study suggests otherwise. In fact, the consensus achieved by experts is consistent with Rady and Nunez (2012: 111), who argued that the "DCF valuation will be highly disseminated in emerging markets compared to developed markets in terms of usage due to the high growth of the former markets, leading to comparables being inaccurate and DCF being the most accurate",

5.6.2.3 Primary versus secondary use of the DCF and multiples valuation approaches

According to the responses, the mean, median and mode with regard to the use of DCF and multiples valuation approach as a primary or secondary valuation method were greater than 4 and the standard deviation shifted from 0.913 in Delphi round two to 0.480 after Delphi round three. The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of the feedback obtained from experts between Delphi rounds two and three. As a result it was concluded that experts reached a relatively high level of consensus concerning the use of the DCF valuation approach as a primary valuation method. The results on this question show that experts perceive the DCF valuation approach as a primary valuation method compared to the DCF valuation approach.

The consensus achieved by experts is consistent with Rady and Nunez (2012) who indicated that the DCF valuation approaches tend to be used as a primary valuation method in emerging markets, while multiples act as secondary valuation methods because of the lack of comparable companies in emerging market countries. Furthermore, the consensus achieved by experts confirmed the assertion made by Pererio (2002b) and Rady and Nunez (2012) (see section 3.4. that the lack of comparable companies in emerging markets may discourage the use of multiples as a stand-alone valuation methodology but rather act as secondary methodologies supporting the results obtained from the DCF valuation approach.

In section 5.7 below, the feedback from with regard to the different variants of the DCF and multiples valuation approaches that experts use when valuing banks in emerging markets is presented and discussed.

5.7 VARIANTS OF THE DCF AND MULTIPLES VALUATION APPROACH

The feedback presented in this section was aimed at providing answers to the following research question: Which variants of the DCF and multiples valuation approaches do experts use when valuing banks in emerging markets? This question was intended to identify the variants of the DCF and multiples valuation approaches that analysts use when valuing banks in emerging markets.

5.7.1 Delphi round one

5.7.1.1 Variants of the DCF valuation approaches

Appendix U presents the feedback obtained from expects after conducting Delphi round one with regard to their choice of the different variants of the DCF valuation approach when valuing banks in emerging markets. According to the responses from Delphi round one, 77.78% and 66.67% of the experts use the equity DCF model and the DDM respectively. The researcher also observed that 88.88% of the experts seldom or never use the enterprise DCF model when valuing banks.

5.7.1.2 Variants of the multiples valuation approaches

Appendix V presents the feedback obtained from experts after conducting Delphi round one with regard to their choice of the different variants of the multiples valuation approaches when valuing banks in emerging markets. According to the responses from Delphi round one, the results indicated that 66.67% and 77.78% of the experts use P/E ratio and P/BV respectively when valuing banks in emerging markets. The researcher also observed that 77.78% of the experts seldom or never use the P/CF ratio.

In section 5.7.2 the feedback obtained from Delphi rounds two and three with regard to the level of agreement of experts on the different variants of the DCF and multiples valuation approaches used by experts when valuing banks in emerging markets is presented and discussed below.

5.7.2 Delphi rounds two and three

5.7.2.1 Variants of the DCF valuation approaches

Table 5.8 below presents the feedback obtained in Delphi rounds two and three with regard to the level of agreement of experts on the different variants of the DCF valuation approaches.

Table 5.8: Variants of the DCF valuation approaches

	Round 2				**Round 3**				
	Mean	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
Equity DCF model	3.923	4.000	4.000	0.954	4.154	4.000	4.000	0.801	0.942
DDM	3.769	4.000	4.000	0.754	4.154	4.000	4.000	0.515	0.959
Enterprise DCF model	2.615	4.000	5.000	0.913	2.154	2.000	3.000	0.480	0.923

Note: 5= strongly agree, 4=agree, 3= neutral, 2= disagree, 1= strongly disagree, 0= no answer

After Delphi round three the responses, mean with regard to the equity DCF model and DDM were greater than 4, while the standard deviation shifted from 0.954 to 0.801 (equity DCF model) and 0.754 to 0.515 (DDM). The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. As a result it was concluded that a high level of consensus was achieved by experts. These results show that experts prefer the equity DCF and DDM model when valuing banks in emerging markets, while the enterprise DCF model is not often used.

The consensus achieved by experts in this section is consistent with the literature discussed in section 3.5.1. The literature suggests that even though the enterprise DCF model is widely used when valuing industrial companies, this tends not to be the case with banks (Koller *et al.* 2010: 769; Damodaran, 2012: 584). Instead, there is a general agreement in the literature that it is more appropriate to use the equity DCF valuation approach when valuing banks (Copeland *et al.* 2000: 477; Gross, 2006: 48; Koller *et al.* 2010: 769; Damodaran, 2012: 584).

5.7.2.1 Variants of the multiple valuation approach

Table 5.9 below presents the feedback obtained in Delphi rounds two and three with regard to the level of agreement of experts on the different variants of the multiples valuation approaches that could be used when valuing banks.

Table 5.9: Different variants of the multiple valuation approach

	Round 2				Round 3				
	Mean	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
P/E ratio	4.056	5.000	5.000	1.214	4.250	4.000	4.000	0.707	0.973
P/BV ratio	3.889	4.000	4.000	0.816	4.077	4.000	5.000	1.282	0.959
P/CF ratio	2.692	3.000	3.000	1.032	3.077	3.000	2.000	1.188	0.904
P/S ratio	2.615	2.000	3.000	1.261	2.154	2.000	3.000	1.144	0.923

Note: 5= strongly agree, 4=agree, 3= neutral, 2= disagree, 1= strongly disagree, 0= no answer

According to the responses, mean with regard to the P/E and P/BV ratio was greater than 4 and the standard deviation shifted from 1.214 (P/E) and 0.816 (P/BV) in Delphi round two to 0.707 (P/E) and 1.282 (P/BV) after Delphi round three. The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of the responses of obtained from experts between Delphi rounds two and three. As a result it was concluded that experts achieved a relatively high level of consensus with regard to the use of the P/E ratio, while the P/BV ratio achieved a fair level of consensus. This finding shows that experts prefer the P/E and P/BV ratios when valuing banks in emerging markets, while the P/CF and P/S ratios are used either rarely or not at all.

The consensus achieved by experts replicated the findings of Tasker (1998), Barker (1999) and Imam *et al.* (2008) who reported that analysts prefer using P/E and P/BV multiples when valuing banks. Furthermore Reilly and Brown (2012: 332) (refer to section 3.4.1) indicated that the P/BV is widely used by analysts in the financial industry, since the value of most bank assets such as bonds and commercial is equivalent to the book value.

In section 5.8 below, the feedback obtained with regard to how experts resolve some of the practical issues pertaining to the DCF valuation approach is presented and discussed. The practical issues include the techniques used to forecast cash flows and terminal value and the length of explicit forecast period.

5.8 PRACTICAL ISSUES OF THE DCF VALUATION APPROACH

The feedback presented in this section was aimed at providing answers to the following research question: How do experts resolve some of the practical issues of the DCF valuation approach? This question was intended to ascertain how experts resolve some of the challenges related to the DCF valuation approach.

5.8.1 Delphi round one

5.8.1.1 Forecasting techniques

Appendix W presents the feedback from experts with regard to the techniques used when estimating cash flows for banks in emerging markets with regard to Delphi round one. This finding indicates that most of the experts (77.78%) use the time series analysis.

5.8.1.2 Length of explicit forecast period

Appendix X presents the feedback from experts with regard to the length of the explicit forecast after Delphi round one. The most common responses indicate that most experts (77.78%) use 4-10 years as their explicit forecast period.

5.8.1.3 Estimation of terminal value

Appendix Y presents the feedback with regard to the estimation of terminal value by experts after Delphi round one. The findings indicate that most analysts (83.33%) estimate terminal value when using the DCF valuation approach to value banks in emerging markets.

5.8.1.4 Techniques used to estimate terminal value

Appendix Z presents the response from experts with regard to the techniques used to estimate terminal value. The results indicate that 61.11% of the experts use perpetuity with growth to compute terminal value.

5.8.1.5 Discount rate for explicit forecasted cash flows and terminal value

Appendix AA presents the feedback from experts with regard to the discount rate used to discount explicit forecast cash flows and terminal value. The results indicate that 72.22% of the experts use a different discount rate when discounting both cash flows and terminal value.

In section 5.8.2 below the feedback obtained in Delphi rounds two and three with regard to the level of agreement of experts on the practical issues of the DCF valuation approach is presented and discussed.

5.8.2 Delphi rounds two and three

Table 5.10 below presents the feedback obtained from expects in Delphi rounds two and three with regard to the level of agreement of experts on the practical issues associated with the DCF valuation approach.

Table 5.10: Practical issues of the DCF model

	Round 2				Round 3				
	Mean	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
Forecasting technique (time series analysis)	3.846	4.000	4.000	0.801	4.308	4.000	4.000	0.480	0.962
Estimation of terminal value	4.308	4.000	4.000	0.480	4.000	4.000	4.000	0.408	0.984
The explicit forecast period of 4-10 years	4.154	4.000	4.000	0.689	4.077	4.000	4.000	0.494	0.981
Different discount rates for explicit cash flows and terminal value	3.692	4.000	4.000	1.032	3.385	4.000	4.000	1.193	0.956
Technique used to estimate terminal value (perpetuity with growth)	3.615	4.000	4.000	1.261	3.625	4.000	4.000	1.188	0.937

Note: 5=strongly agree, 4= agree, 3= neutral, 2=disagree, 1=strongly disagree, 0= no answer.

The experts' views listed in table 5.8 are discussed separately in more detail below.

5.8.2.1 Techniques used to forecast

According to the responses, mean, median and mode with regard to time series was greater than 4 while standard deviation shifted from 0.801 in Delphi round two to 0.480 in Delphi round three. The Spearman's Rank correlation coefficient on this question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. Therefore, the results showed that experts achieved a high level of consensus with regard to the use of the time series analysis, meaning that experts prefer to use the time series analysis when forecasting cash flows for banks in emerging markets.

The consensus achieved by experts is consistent with the assertion by Liebich (1995) and Rezaee (2001) (refer to section 3.4.3) that, just like industrial companies, bank performance is forecasted using quantitative methods. The researcher, however, believes that the time series analysis is used together with qualitative information such as bank strategy and quality of management so that information that is difficult to consider in quantitative models is taken into account (Hyndman, 2009).

5.8.2.2 Length of explicit forecast period

According to the responses, mean, median and mode with regard to 4-10 years forecast period were greater than or equal to 4 while standard deviation was greater than on or equal to 0 but less than 1 ($0 \leq x < 1$) after Delphi round three. The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. Given the results above, it can be concluded that experts achieved a high level of consensus with regard to the length of explicit forecast period, meaning that experts perceive an explicit forecast period of 4-10 years as a suitable explicit forecast period. The results for this question imply that the explicit forecast period used for banks is relatively shorter than the one used for industrial companies.

The consensus achieved by experts with regard to the length of the explicit forecast period is in line with the literature discussed in section 2.4.3. The literature indicates that the explicit forecast period for banks is usually shorter than the one used for industrial companies. The researcher attributes the consensus achieved by experts to the fact that banks depend a lot on macroeconomic factors which are considered to be very volatile especially in emerging markets (Pereiro, 2002a: vii). As a result, a very long explicit forecast period may cause a biased forecast.

5.8.2.3 Estimation of terminal value

According to the responses, mean, median and mode obtained after Delphi round three were greater than 4 while standard deviation shifted from 0.480 in Delphi round two to 0.408 after Delphi round three. The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. As a result, it was concluded that experts achieved a high level of consensus with

regard to estimation of terminal value. These results showed that experts estimate terminal value when using the DCF valuation approach to value banks in emerging markets.

As discussed in section 3.5.4, since it is impossible to forecast bank performance forever due to the going concern assumption of banks, analysts generally impose closure by stopping estimation of cash flows after the explicit forecast period and then determine the terminal value which is a reflection of the value of the bank's future performance in perpetuity (Copeland *et al.* 2000: 274; Damodaran, 2012:304). In this regard, consensus achieved by experts is aligned to the literature.

5.8.2.4 Techniques used to estimate terminal value

According to the responses, the median and mode with regard to this particular question was greater than 4 while standard deviation was 1.188 after Delphi round three. The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. As a result it was concluded that a fair level of consensus was achieved with regard to the techniques used to estimate terminal value. These results reviewed that experts use perpetuity with growth when estimating the terminal value for banks in emerging markets.

The consensus achieved by experts, though focused on banks in emerging markets, confirmed the findings by Pereiro (2002b) that analysts use perpetuity with growth when forecasting terminal value for companies in emerging markets.

5.8.2.5 Discount rate for explicit forecasted cash flows and terminal value

According to the responses, the mean was 3.385, and both median and mode were 4.000 after Delphi round three. The Spearman's Rank correlation coefficient on this particular question was positive, indicating perfect positive correlation of experts' feedback between Delphi rounds two and three. As a result, a reasonable level of consensus was achieved with regard to the discount rate used for explicit forecast cash flows and terminal value. These results show that experts use different discount rates when discounting explicit cash flows and terminal value.

The consensus achieved by experts, though focused on banks in emerging markets, confirmed the findings by Pereiro (2002b) that some analysts use a different discount rate to discount explicit cash flows and terminal value.

In section 5.9 below, the feedback with regard to the difficulties encountered by experts when valuing banks in emerging markets are presented and discussed.

5.9 DIFFICULTIES ENCOUNTERED WHEN VALUING BANKS

The feedback presented in this section was aimed at providing answers to the following research question: What are some of the challenges encountered by experts when valuing banks in emerging markets? This question was intended to identify some of the key challenges encountered by experts when valuing banks in emerging markets.

5.9.1 Delphi round one

5.9.1.1 Difficulties encountered when valuing banks

Appendix AB presents the feedback from experts with regard to the challenges encountered when valuing banks in emerging markets. Difficulties of accessing data, a lack of companies to compare with and predicting future events are considered to be the most dominant challenges that analysts face when valuing banks in emerging markets. The researcher also observed that theoretical assumptions of the models seem not to give analysts problems when valuing banks in emerging markets.

In section 5.9.2 below the feedback obtained in Delphi rounds two and three with regard to the level of agreement of experts on the challenges encountered when valuing banks in emerging markets is presented and discussed.

5.9.2 Delphi rounds two and three

Table 5.11 below presents the feedback obtained from expects in Delphi rounds two and three with regard to the level of agreement of experts on the challenges encountered when valuing banks in emerging markets.

Table 5.11: Difficulties encountered when valuing banks

	Round 2				Round 3				
	Mean	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
Difficulty in accessing data	4.077	4.000	4.000	0.641	4.385	4.000	4.000	0.506	0.984
Predicting future events	3.846	4.000	3.000	0.899	4.231	4.000	4.000	0.439	0.964
A lack of businesses to compare with	3.308	4.000	4.000	1.548	3.538	4.000	4.000	1.561	0.821

Note: 5=strongly agree, 4= agree, 3= neutral, 2=disagree, 1=strongly disagree, 0= no answer.

The difficulties encountered listed in table 5.11 above are discussed in more detail below.

5.9.2.1 Difficulties encountered when valuing banks

The mean for difficulty in accessing data, predicting future events and a lack of business to compare with were greater than 4 after Delphi round three. The standard deviation for difficulty in accessing data and predicting future events was greater than 0 but less than 1, while that for a lack of companies to compare with was greater than 1.5 but less than 2. The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of experts' feedback between Delphi rounds two and three. As a result it was concluded that experts reached a relatively high level of consensus concerning difficulty in accessing data and predicting future events, while a lack of companies to compare with achieved a lower level of consensus. These results shows that most of the experts who responded to the questionnaire consider accessing data and predicting future events as their key challenges when valuing banks in emerging markets.

The consensus achieved by experts echoes the assertion by Pereiro (2002a: 14) that when valuing companies in emerging markets it is difficult to access the relevant data. This could be attributed to a poorly designed system of communicating information from companies to the various stakeholders as suggested by Pereiro (2002a: vii). The literature discussed in section 3.4.2, also suggested that one of the key challenges experienced by experts is forecasting future cash flows.

In section 5.10 below, the feedback with regard to how experts estimate the cost of equity when valuing banks in emerging markets is presented and discussed.

5.10 DETERMINATION OF COST OF EQUITY

The feedback presented in this section was aimed at providing answers to the following research question: How do experts compute cost of equity for banks in emerging markets? This question was intended to establish the models that experts use when estimating the cost of equity.

5.10.1 Delphi round one

5.10.1.1 Determination of cost of equity

Appendix AC presents the feedback from experts after Delphi round one with regard to the different models that could be used to estimate cost of equity. The results suggest that the majority of analysts (83.33%) perceive the CAPM to be the most appropriate model to use when estimating cost of equity for banks. Other models such as ATP and the Fama and French three-factor model were perceived to be not very important.

In section 5.10.2 below the feedback obtained from Delphi rounds two and three with regard to the level of agreement of experts on the models used to estimate the cost of equity is presented and discussed.

5.9.2 Delphi rounds two and three

Table 5.12 below presents the feedback obtained from Delphi rounds two and three with regard to the level of agreement of experts on the models used to estimate cost of equity for banks in emerging markets after Delphi rounds two and three.

Table 5.12: Determination of cost of equity

	Round 2				Round 3				
	Mean	**Median**	**Mode**	**SD**	**Mean**	**Median**	**Mode**	**SD**	**r_s**
CAPM	4.154	4.000	4.000	0.801	4.385	4.000	4.000	0.506	0.970

Note: 5=strongly agree, 4= agree, 3= neutral, 2=disagree, 1=strongly disagree, 0= no answer.

The findings presented in table 5.12 above are discussed in more detail in section 5.9.2.1 below.

5.9.2.1: Determination of cost of equity

According to the feedback presented in table 5.11, the mean for CAPM were greater than 4 after Delphi round three and the standard deviation was 0.506. The Spearman's Rank correlation coefficient on this particular question was positive, indicating positive correlation of the responses obtained from experts between Delphi rounds two and three. These results show that experts achieved a high level of consensus with regard to the CAPM, meaning that experts prefer the CAPM models when estimating the cost of equity for banks in emerging markets.

The consensus by analysts is consistent with the literature in chapter two and section 2.4.2, which suggest that CAPM is the preferred asset pricing model both in emerging and developed markets. Furthermore, Pereiro (2002a) argued that experts prefer the CAPM over sophisticated models which depend on a number of macroeconomic risks such as inflation, political and interest rate risk. The researcher attributes the consensus achieved by experts to the challenges in accessing macroeconomic data that is essential when using sophisticated models as suggested by Pereiro (2002a).

5.11 SUMMARY OF QUALITATIVE FINDINGS

As discussed in section 4.6.2, the opinions voiced on qualitative questions were analysed and used to understand some of the views of experts. A summary of some of the feedback obtained on these questions is presented below.

5.11.1 DCF versus the multiples valuation approach

Participants were asked why they would prefer the DCF valuation approach over the multiples valuation approach when valuing banks in emerging markets in Delphi round two. Two participants indicated that they use the DCF valuation approach because it is the valuation approach that is preferred by the various stakeholders that they work with. One participant suggested that he uses the DCF valuation approach because it is easy for him to justify his recommendations. Another participant suggested that DCF valuation approach is much more trustworthy than earnings which are reported by banks in emerging markets. One expert indicated that he prefers the DCF valuation approach because over the past years the DCF valuation approach has proved to provide better values in comparison to other models.

The main aspects reviewed by the feedback obtained on this particular question showed that the reasons why experts prefer the DCF valuation approach over the multiples valuation approach vary based on their experience and what the various stakeholders are used to.

5.12 CHAPTER SUMMARY

This chapter presented the findings and discussion of this study. The findings were compared with the literature reviewed in chapters two and three. In section 5.2 the response rate for all three Delphi rounds were presented and section 5.3 presented the demographic findings. The findings and discussion from Delphi round one to three which were aimed at establishing a consensus of opinion were presented from section 5.4 to 5.10 and a summary of qualitative findings was presented in section 5.11. The next chapter provides a summary, conclusion and recommendations of future research based on the findings discussed in this chapter and the literature review in chapters two and three.

CHAPTER SIX
SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

This purpose of this chapter is to provide a summary of the main findings, generate conclusions and provide recommendations on valuation of banks in emerging markets and make suggestions for future research based on the findings discussed in chapter five and the literature review in chapters two and three. Before providing the conclusions with regard to the main findings of this study, the primary purpose of this study will be restated. As outlined in section 1.5, the primary purpose of this study was to establish a consensus of opinion among experts with regard to the valuation of banks in emerging markets. To achieve the primary purpose of this study, the following research questions were generated:

Question 1: *Which type of security analysis do experts undertake when predicting the performance of banks in emerging markets?*
Question 2: *Which macroeconomic, industry and bank-specific factors do experts consider when valuing banks in emerging market banks?*
Question 3: *How do experts compare the DCF with the multiples valuation approach in relation to accuracy, popularity and manner of use?*
Question 4: *How do experts resolve some of the practical issues of the DCF valuation approach?*
Question 5: *Which variants of the DCF and multiples valuation approaches do experts use when valuing banks in emerging markets?*
Question 6: *What are some of the challenges encountered by experts when valuing banks in emerging markets?*
Question 7: *How do experts compute cost of equity for banks in emerging markets?*

In section 6.2 below, a brief summary of the study is provided.

6.2 SUMMARY OF STUDY

This study was set to establish the consensus of opinion among experts with regard to valuation of banks in emerging markets. The study intended to contribute to a deeper

understanding of valuation of banks in emerging markets. In essence this study was aimed to contribute to emerging market research in the field of bank valuation. An overview of each chapter is presented below highlighting the purpose and structure of each chapter.

In **chapter one** of this study, the subject of valuation of banks in emerging markets was introduced. In essence, the chapter provided a discussion on valuation in emerging markets and valuation of banks. Furthermore, it gave an overview of emerging market banks, outlined the purpose, objectives and research questions, defined the key terms, briefly discussed the research design and methodology, stated the scope and delimitation of the study, and outlined prior studies and plan of study.

In **chapter two** the study the bank-specific factors to valuation were discussed and a five-stage bank valuation process was introduced. The first four stages – macroeconomic analysis, industry analysis, bank-specific analysis and forecasting – were discussed in this chapter.

In **chapter three** the study described the last stage of the bank valuation process, valuation. The chapter focused on the theoretical underpinnings of the DCF and multiples valuation approaches and their application in emerging markets and bank valuation.

In **chapter four** the research design and methodology was described and motivated. The research paradigm, Delphi technique, data collection process, data analysis, reliability and validity and ethical consideration were explained and discussed. Within the context of this study, the mixed methods research paradigm was considered to be the most appropriate research paradigm mainly because of the quantitative methods used to collect and analyse the data and the qualitative nature of the Delphi technique.

In **chapter five** the findings and discussion of the findings in relation to the literature discussion outlined in chapters two and three were provided. The sections in this chapter dealt with the analysis and discussion of data obtained from experts after the Delphi rounds. Each section in this chapter was aimed at answering and reaching consensus of opinion among experts on the research questions outlined in section 1.5.

Chapter six provides the conclusion, summary, limitations and recommendations for future research pertaining to this study.

In section 6.3 below, conclusions on the main findings of this research are outlined.

6.3 CONCLUSIONS

As outlined in section 1.5, the purpose of this study was to establish a consensus of opinion among analysts with regard to valuation of banks in emerging markets. In addressing this purpose, the Delphi technique, which was made up of a carefully selected panel of experts, was used to collect data and develop consensus among experts. It is evident that the information gathered through the Delphi survey allowed the researcher to achieve the main purpose of this study by answering the research questions outlined in section 1.5. Generally, most of the findings of this study were in some way similar to the findings of previous studies. Given the exploratory research approach adopted in this study, it is important to note that the consensus reached and responses obtained in this research are limited to the opinions of the experts who served in the panel. Furthermore, the responses of experts from Delphi round one through to Delphi round three were consistent i.e. there were little variations on experts' responses when questions similar to those asked in the previous round were asked in the next round.

Based on the main findings of this study, the literature survey in chapters two and three and the findings and discussion of findings in chapter five, the following points should be considered when valuing banks in emerging markets:

- When analyzing the performance of banks, it is essential to conduct a bank-specific, industry and macroeconomic analysis.
- When estimating the future performance of banks, the time series analysis and an explicit forecast period of between 4-10 years may be used.
- When estimating the terminal value for banks in emerging markets, the perpetuity with growth is used.

- When computing the value for banks, the DCF valuation approach (equity DCF and DDM valuation models) are used as primary valuation methods and the relative valuation approach (P/E and P/BV ratio) are used as secondary valuation methods.
- When estimating the cost of equity, the CAPM is used.

6.4 LIMITATIONS OF THE RESEARCH

Even though essential measures were taken to ensure that this research meets the criteria of good research, it is possible to identify some limitations associated with this study. These limitations include:

- **The lack of prior empirical research:** When conducting research, citing prior research studies forms the basis for extensive literature and helps to lay a solid foundation for understanding the research problem (Kumar, 2011). However, in section 1.4 it was noted that not much is known with regard to valuation of banks in emerging markets. As a result, this research was limited to the scarce literature that was available, which made it difficult for the researcher to find relevant studies to build the research upon and with which to compare the findings.
- **The Delphi technique:** Due the multiple feedback processes inherent and central to the Delphi technique, attracting and maintaining a large sample of experts in this research was a challenge.
- **Exploratory study:** Due the exploratory nature of this study, it is not appropriate to generalize the findings obtained in this study.

In section 6.6 below, recommendations for future research are outlined.

6.5 RECOMMENDATIONS FOR FUTURE RESEARCH

During the course of this research several opportunities that required further investigation arose but were deemed outside the scope of this particular study. Therefore, based on the outcomes of this study and the literature in chapters two and three, the following recommendations for future research are made:

- With reference to the different discount rates used for terminal value and explicit cash flow, it would be interesting to conduct a research which explores how experts determine the discount rates in emerging marking.
- The literature in section 2.41, suggested that analyst and academics have not yet reached consensus with regard to the estimation of CAPM's key variables (risk-free rate, market risk premium and beta). Therefore, further research investigating the best way of determining these variables would be of great value in emerging markets.
- In this research, certain bank-specific, industry and macroeconomic factors that affect bank performance were determined. Therefore, further research investigating the effect (positive or negative) of these factors on the performance of banks would be of great value in emerging markets.

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APPENDICES

Appendix A: MSCI emerging market list

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

Source: MSCI (2013)

Appendix B: S&P emerging markets list

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

Source: S&P (2012)

Appendix C: FTSE emerging markets list

Advanced emerging markets		Secondary emerging markets	
Brazil	Poland	Chile	Indonesia
Czech Republic	South Africa	China	Morocco
Hungary	Taiwan	Colombia	Pakistan
Malaysia	Thailand	India	Peru
Mexico	Turkey	Egypt	Philippines
		Uae	Russia

Source: FTSE (2012)

Appendix D: Selected Delphi Masters and PhD Theses

Name of researcher	Delphi focus	Rounds	Sample size
Masters thesis			
Angus (2012)	IT audit in higher education	6	12
Jenkins III (2008)	A quality agricultural education Program: a national Delphi study	4	36
Kelley (2001)	A Delphi assessment of the digital Rosetta Stone Model	3	9
PhD thesis			
Tottossy (2005)	Teacher selection: A Delphi study	3	25
Magnuson (2012)	A Delphi study to understand relational	3	31,30&29

	bonds in supervision and their effect on rehabilitation counselor disclosure in the public rehabilitation program		
Wagner (2008)	Massively Multiplayer Online Role-Playing Games As Constructivist Learning Environments in K-12 Education: A Delphi Study	4	12
Grobbelaar (2006)	R&D in National system of innovation: a system Dynamic Model	2	14

Source: Own contribution

Appendix E: Invitation email for Delphi round one

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

My name is Keith Sabilika, and I am conducting research for the purpose of fulfilling the requirements of a Master's Degree in Financial Management at Rhodes University in South Africa. I am currently collecting data for a thesis whose provisional title is valuation framework for banks in emerging markets. The purpose of this research is to establish consensus of opinion among experts with regard to the valuation of banks in emerging markets. The study will also ascertain how analysts value banks, how they forecast cash flows and how they compute the cost of equity for banks in emerging markets.

This study will require a good understanding of the banking industry of any country in emerging markets or the emerging market as a whole. I therefore request that you share your expert knowledge by answering a short questionnaire found on the link provided below. Please note that the questionnaire should not take more than 15 minutes of your time. You will also find on the questionnaire a participant's consent form. Feel free to check my credentials with my University and my supervisors on the contact details provided below. You are also free to forward the email address of anyone you think might be interested to participate in this study to me.

This study is divided into at least three Delphi surveys. The Delphi survey is a systematic and structured survey method that relies on a panel of experts. The experts answer questionnaires in two or more rounds. After each round, the researcher provides an anonymous summary of expert's responses from the previous round. As a result, experts are encouraged to revise their earlier answers in light of the responses of other members of the panel. The Delphi technique allows the divergent views of participants to be refined so as to achieve a consensus view that should represent the views of the panel of experts.

Click here to do the survey: {SURVEYURL}

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: {OPTOUTURL}

The success of this project depends on your co-operation and a copy of the findings will be forwarded to you, upon request. **Thank you for your willingness to contribute to the success of this important research project.**

Keith Sabilika	**Supervisors: Johan Hefer**	**Stan Zindiye**
Rhodes University	Rhodes University	Rhodes University
Tel: +27 73 398 2550	Tel: +27 46 603 8246	Tel: +27 046 603 8742
E-mail: g11s4203@ru.ac.za	E-mail: j.hefer@ru.ac.za	E-mail: s.zindiye@ru.ac.za

Appendix F: Questionnaire for Delphi round 1

VALUATION OF BANKS IN EMERGING MARKETS

This study is divided into three Delphi surveys. The Delphi survey is a structured survey method that relies on a panel of experts. The experts are required to answer questionnaires in two or more rounds based on their practice and not theory. After each round, the researcher provides an anonymous summary of experts' responses from the previous round. As a result, experts are encouraged to revise their earlier answers in light of the responses of other members of the panel. The Delphi technique allows the divergent views of participants to be refined so as to achieve a consensus of opinion that should represent the views of the panel of experts.

WELCOME TO THE FIRST DELPHI SURVEY

Structure of questionnaire

PART 1: General information (4 Questions)
PART 2: Valuation methods (14 Questions)
PART 3: Cost of equity (1 Questions)

There are 19 questions in this survey.

PARTICIPANT'S CONSENT

- I understand the purpose of the research study and my involvement in it
- I understand the benefits of participating in this research study
- I understand that I may withdraw from the research study at any stage without any penalty
- I understand that participation in this study is done on a voluntary basis
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential
- I understand that I will receive no payment for participating in this study

Choose one of the following answers

- Based on the above I hereby agree to participate in this survey.
- Based on the above I hereby disagree to participate in this survey.

PART 1: INFORMATION ABOUT YOU

Below are a number of statements about you.
Please select your answer.

Q1. Choose the continent you reside in.
Choose one of the following answers

- Africa
- Australia
- Europe
- Latin America
- North America
- South America

Q2. How much experience do you have in valuing banks?
Choose one of the following answers

- 1-5 years
- 6-10 years
- More than 10 years
- I am not an expert in the valuation of banks

Q3. Please indicate your highest level of educational qualification.
Choose one of the following answers

- No tertiary qualification
- Diploma or certificate
- 3 or 4 year undergraduate degree
- Masters
- Doctorate
- Other:

Q4. Do you have a professional qualification (CFA, CA or similar)?
Choose one of the following answers

- Yes
- No

PART 2: VALUATION METHODS

Below are a number of statements that have been made about valuation methods. For each statement please indicate your view.

Q5. Please indicate how OFTEN you conduct each of the following analysis when valuing banks in emerging market.

	Very often	Often	Occasionally	Seldom	Never
Industry analysis					
Macroeconomic analysis					
Bank-specific factor analysis					

Help: *Industry analysis refers to the analysis of the banking industry and how banks compete against each other.*
Help: *Macroeconomic analysis refers to the process of analyzing the general state of the economy and its potential effects on banks*
Help: *Bank-specific analysis refers to the analysis of the financial conditions and the operating results of the bank*

Q6. The Discounted cash flow (DCF) model is the most POPULAR valuation technique used when valuing banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Help: *Emerging markets refers to any country with social or business activity which is in the process of rapid growth and industrialization.*

Q7. When valuing banks in emerging markets, how do you use the DCF model?
Choose one of the following answers

- Use DCF model as a primary valuation method
- Use DCF model as a secondary valuation method
- Use DCF model as both primary and secondary valuation method
- Do not use DCF model

Q8. Rate the following DCF models according to how OFTEN you use them when valuing banks in emerging markets.

	Very often	Often	Occasionally	Seldom	Never
Dividend Discount Model (DDM)					
Equity Discounted Cash Flow					

Model					
Discounted Free cash flow Model					

Help: *Divided Discount Model (DDM) estimates the value of equity to the present value of forecasted dividends.*
Help: *Equity Discounted Cash Flow Model estimates the value of equity by discounting free cash flow to equity at the cost of equity.*
Help*: Discounted Free Cash Flow Model estimates the value of a company by discounting operating free cash flow at the weighted average cost of capital (WACC).*

Q9. When using the DCF model to value banks in emerging markets, how do you forecast cash flows?
Check any that apply

- Delphi technique
- Scenario technique
- Time series analysis (e.g. Extrapolation, Averages, Simple growth method)
- Casual forecasting method (e.g. Stochastic method, Deterministic method)
- Other:

Q10. When using the DCF model to value banks in emerging markets, do you use a terminal value?
Choose one of the following answers

- Yes
- No

Q11. If you use terminal value, how do you compute it?
Check any that apply

- Perpetuity with growth
- Perpetuity without growth
- Multiple approach
- Liquidation value
- No answer
- Other:

Q12. When using the DCF model to value banks in emerging markets, how long is your explicit or detailed forecast period?
Choose one of the following answers

- 1-3 years
- 4-10 years
- More than 10 years

Q13. When you use the DCF model to value banks in emerging markets, do you use the same discount rate to discount cash flows for both the explicit forecast period and terminal value?

Choose one of the following answers

- Yes
- No

Q14. Multiples or relative valuation are the most POPULAR valuation techniques used when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Help: *Multiples or relative valuation refers to the notion of comparing the price of an asset to the market value of similar assets*.

Q15. How do you use multiples when valuing banks in emerging markets?

Choose one of the following answers

- Use multiples as a primary valuation method
- Use multiples as a secondary valuation method
- Use multiples as both primary and secondary valuation method
- Do not use multiples

Q16. Rate the following multiples according to how OFTEN you use them when valuing banks in emerging markets.

	Very often	**Often**	**Occasionally**	**Seldom**	**Never**
P/E ratio					
P/BV ratio					
P/CF ratio					
P/S ratio					

Q17. Rate the following valuation models according to their level of ACCURACY when used to value banks in emerging markets.

	Very accurate	Accurate	Neutral	Not very accurate	Not accurate at all
DCF					
Multiples					
DCF model vs. multiples					

Q18. Which of the following challenges do you encounter when valuing banks in emerging markets as compared to developed markets?

Check any that apply

- Difficulties in accessing data
- A lack of business to compare to
- Difficulties in estimating underlying assumptions
- Predicting future events
- Unrealistic theoretical assumptions of models used
- Other:

PART 3: CALCULATION OF COST OF EQUITY

Below are a number of statements that have been made cost of capital calculation. Please indicate your view.

Q19. Rate the following methods according to their level of IMPORTANCE when estimating the cost of capital for banks in emerging markets.

	Extremely important	Very important	Important	Not very important	Not important at all
Capital Asset Pricing Model (CAPM)					
Arbitrage Pricing Model (APM)					
Fama-French three factor model					

Q20. If there is anything you would want to bring to the attention of the researcher with regard to bank valuation in emerging markets, you may do so in the space provided below.

Appendix G: Email reminder for Delphi round

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

Recently we invited you to participate in a survey. We note that you have not yet completed the survey, and wish to remind you that the survey is still available should you wish to take part. The survey is titled: Valuation of banks in emerging markets.The purpose of this research is to establish consensus of opinion among experts with regard to the valuation of banks in emerging markets. The study will also ascertain how analysts value banks, how they forecast cash flows and how they compute the cost of equity for banks in emerging markets.

This study requires a good understanding of the banking industry of any country in emerging markets or the emerging market as a whole. I therefore request that you share your expert knowledge by answering a short questionnaire found on the link provided below. Please note that the questionnaire should not take more than 15 minutes of your time. You will also find on the questionnaire a participant's consent form. Feel free to check my credentials with my University and my supervisors on the contact details provided below. You are also free to forward the email address of anyone you think might be interested to participate in this study to me.

This study is divided into at least three Delphi surveys. The Delphi survey is a systematic and structured survey method that relies on a panel of experts. The experts answer questionnaires in two or more rounds. After each round, the researcher provides an anonymous summary of expert's responses from the previous round. As a result, experts are encouraged to revise their earlier answers in light of the responses of other members of the panel. The Delphi technique allows the divergent views of participants to be refined so as to achieve a consensus view that should represent the views of the panel of experts.

Click here to do the survey: {SURVEYURL}

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: {OPTOUTURL}

The success of this project depends on your co-operation and a copy of the findings will be forwarded to you, upon request. **Thank you for your willingness to contribute to the success of this important research project.**

Sincerely,

Keith Sabilika	**Supervisors: Johan Hefer**	**Stan Zindiye**
Rhodes University	Rhodes University	Rhodes University
Tel: +27 73 398 2550	Tel: +27 46 603 8246	Tel: +27 046 603 8742
E-mail: g11s4203@ru.ac.za	E-mail: j.hefer@ru.ac.za	E-mail: s.zindiye@ru.ac.za

Appendix H: Thank you email for Delphi round one

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

Thank you very much for completing my online survey. The quality of the responses received was astounding and I am very grateful for the effort you have invested in this research.

I am still collating the responses from the first round and would like to proceed to the second round which will be emailed to you in the coming days.

The methodology being used in this research is the Delphi survey. The Delphi survey is a structured and systematic survey method that aims to achieve consensus of opinion from a panel of experts from two or more rounds.

Once again, thank you for your participation and I look forward to your continued participation.

Sincerely,

Keith Sabilika
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Tel: +27 73 398 2550
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Rhodes University
Tel: +27 46 603 8246
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Appendix I: Questionnaire for Delphi round two

VALUATION OF BANKS IN EMERGING MARKETS 2

This study is a Delphi survey. The Delphi survey is a structured survey method that relies on a panel of experts. The experts are required to answer questionnaires in two or more rounds based on their practice and not theory. After each round, the researcher provides an anonymous summary of experts' responses from the previous round. As a result, experts are encouraged to revise their earlier answers in light of the responses of other members of the panel. The Delphi technique allows the divergent views of participants to be refined so as to achieve a consensus view that should represent the views of the panel of experts.

WELCOME TO THE SECOND DELPHI SURVEY

The purpose of this round is for participants to review the questions summarised by the researcher based on the information provided in the first round. Participants are generally asked to rate or rank the statements made in order to establish preliminary consensus.

Structure of questionnaire

PART 1: Participant's consent (1 Question)
PART 2: Review of Delphi 1 results (23 Questions)

There are 24 questions in this survey.

PART 1: PARTICIPANT'S CONSENT

- I understand the purpose of the research study and my involvement in it
- I understand the benefits of participating in this research study
- I understand that I may withdraw from the research study at any stage without any penalty
- I understand that participation in this study is done on a voluntary basis
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential
- I understand that I will receive no payment for participating in this study

Choose one of the following answers

- Based on the above I hereby agree to participate in this survey.
- Based on the above I hereby disagree to participate in this survey.

PART 2: REVIEW OF DELPHI 1 RESULTS

Q1. How IMPORTANT are the following MACROECONOMIC FACTORS when analysing the performance of banks in emerging markets?

	Extremely important	**Very important**	**Important**	**Not very important**	**Not important at all**
Inflation rates					
Economic growth- GDP and GNP					
Tax systems and tax rates					
Level of interest rates					
Exchange rates					
Government spending					
Money supply					
Extent of e-business and e-commerce					
Political stability					
Country risk					

Help: *Macroeconomic analysis refers to the process of analysing the general state of the economy and its potential effects on banks.*

Q2. How IMPORTANT are the following INDUSTRIAL FACTORS when analysing the performance of banks in emerging markets?

	Extremely important	**Very important**	**Important**	**Not very important**	**Not important at all**
Industry growth rate					
Number of customers					
Banking regulation					
Business					

cycle					
Number of banks in the market					
Level of competition between banks					
Threat of new entrants					

Help: *Industry analysis refers to the analysis of the banking industry and how banks compete against each other.*

Q3. How IMPORTANT are the following BANK-SPECIFIC factors when analysing the performance of banks in emerging markets?

	Extremely important	**Very important**	**Important**	**Not very important**	**Not important at all**
Quality of management					
Level of capitalisation					
Loan loss provision					
Credit risk					
Size of the bank					
Business strategy					
Financial analysis (e.g. ratio analysis)					

Help: *Bank-specific analysis refers to the analysis of the financial conditions and the operating results of the bank.*

Q4. The DCF model is used as a primary valuation method when valuing banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q5. The time series analysis is used to forecast cash flows when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q6. A terminal value is used when using the DCF model to value banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q7 Perpetuity with growth is used to compute terminal value when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q8. A different discount rate is used when discounting cash flows for both the explicit and terminal value.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree

- Strongly agree

Q9. A forecast period of 4-10 years is used when using the DCF model to value banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree
-

Q10. The DCF model is more ACCURATE in comparison to multiples or relative valuation.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q11. The DCF is more POPULAR than multiples or relative valuation when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q12. Multiples are used as secondary valuation methods when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q1.3. Difficulty in accessing data is one of the biggest challenges that analysts face when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q14. A lack of businesses to compare with is one of the biggest challenges that analysts face when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q15. Predicting future events is one of the biggest challenges that analysts face when valuing banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q16. CAPM is the most IMPORTANT asset pricing model when estimating cost of capital for banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q17. The equity DCF model is used to value banks in emerging markets.

Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree

- Strongly agree
-

Q18. The enterprise DCF model is used to value banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q19. The dividend discount model (DDM) is used to value banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q20. The price earnings (P/E) ratio is used to value banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q21. The price to book value (P/BV) ratio is used to value banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q22. The price to cash flow (P/CF) ratio is used to value banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree

- Strongly agree

Q23. The price to sales (P/S) ratio is used to value banks in emerging markets.
Choose one of the following answers

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Q24. Why do you prefer the DCF model over multiples when valuing banks in emerging markets?

Appendix J: Invitation email for Delphi round two

RHODES UNIVERSITY
DEPARTMENT OF MANAGEMENT
Where leaders learn

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participants

Thank you very much for completing the Delphi round one. The quality of the responses received was amazing and I am very grateful for the effort you are investing in this survey.

I have collated the responses and would like to proceed with the second round. The purpose of the second round is for you to review the questions summarized by the researcher based on the outcome of Delphi round one on a five point Likert scale. Completing this survey should not take more than 15 minutes of your time.

The methodology being used in this research is the Delphi survey. The Delphi survey is a structured and systematic survey method that aims to achieve consensus of opinion from a panel of experts from at least two or more rounds. Please note that there may be at least one more round remaining in this study.

Click here to do the survey: {SURVEYURL}

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: {OPTOUTURL}

Sincerely,

Keith Sabilika	**Supervisors: Johan Hefer**	**Stan Zindiye**
Rhodes University	Rhodes University	Rhodes University
Tel: +27 73 398 2550	Tel: +27 46 603 8246	Tel: +27 046 603 8742
E-mail: g11s4203@ru.ac.za	E-mail: j.hefer@ru.ac.za	E-mail: s.zindiye@ru.ac.za

Appendix K: Email reminder for Delphi round two

RHODES UNIVERSITY
DEPARTMENT OF MANAGEMENT
Where leaders learn

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

Recently we invited you to participate in the Delphi round two of a survey titled: Valuation of banks in emerging markets. We note that you have not yet completed the survey, and wish to remind you that the survey is still available should you wish to take part.

The purpose of the Delphi round two is for you to review the questions summarized by the researcher based on the outcome of Delphi round one by rating your views on a five point Likert scale. Completing this survey should not take more than 15 minutes of your time.

The methodology being used in this research is the Delphi survey. The Delphi survey is a structured and systematic survey method that aims to achieve consensus of opinion from a panel of experts from at least two or more rounds. Please note that there may be at least one more round remaining in this study.

Click here to do the survey: {SURVEYURL}

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: {OPTOUTURL}

Sincerely,

Keith Sabilika	**Supervisors: Johan Hefer**	**Stan Zindiye**
Rhodes University	Rhodes University	Rhodes University
Tel: +27 73 398 2550	Tel: +27 46 603 8246	Tel: +27 046 603 8742
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Appendix L: Thank you email for Delphi round two

RHODES UNIVERSITY
DEPARTMENT OF MANAGEMENT
Where leaders learn

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

Thank you very much for completing my online survey. The quality of the responses received was astounding and I am very grateful for the effort you have invested in this research.

I am still collating the responses from Delphi round two and would like to proceed to the Delphi round three which will be emailed to you in the comings days. Delphi round three is perceived to be the final round.

The methodology being used in this research is the Delphi survey. The Delphi survey is a structured and systematic survey method that aims to achieve consensus of opinion from a panel of experts.

Once again, thank you for your participation and I look forward to your continued participation.

Sincerely,

Keith Sabilika	**Supervisors: Johan Hefer**	**Stan Zindiye**
Rhodes University	Rhodes University	Rhodes University
Tel: +27 73 398 2550	Tel: +27 46 603 8246	Tel: +27 046 603 8742
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Appendix M: Questionnaire for Delphi round three

VALUATION OF BANKS IN EMERGING MARKETS 3

The main objective of this study is to establish consensus of opinion among experts with regards to valuation of banks in emerging markets. The methodology used to achieve this objective is the Delphi survey. The Delphi survey is a structured and systematic survey method that aims to achieve consensus of opinion from a panel of experts by encouraging respondents to revise their earlier answers in light of the responses of other members of the panel.

WELCOME TO THE THIRD DELPHI ROUND

Structure of questionnaire

PART 1: Participant's consent (1 Question)

PART 2: Review of Delphi 2 results (21 Questions)

There are 22 questions in this survey.

PART 1: PARTICIPANT'S CONSENT

- I understand the purpose of the research study and my involvement in it
- I understand the benefits of participating in this research study
- I understand that I may withdraw from the research study at any stage without any penalty
- I understand that participation in this study is done on a voluntary basis
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential
- I understand that I will receive no payment for participating in this study

Choose one of the following answers

- Based on the above I hereby agree to participate in this survey.
- Based on the above I hereby disagree to participate in this survey.

PART 2: REVIEW OF DELPHI RESULTS

The statements made in this round are based on the majority views of the panel of experts from the preceding rounds. You are asked to review and rate these questions as you did in the previous rounds. You are welcome to keep the same rating by indicating your previous choice in this new round, or revise your previous rating by choosing a new response. To aid your decision, I have included the group mean for each question.

Q1. The following analysis is important when valuing banks in emerging markets.

TYPE OF ANALYSIS	GROUP MEAN
Macroeconomic analysis	4.077
Industry analysis	4.538
Bank-specific analysis	4.077

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Macroeconomic analysis					
Industry analysis					
Bank-specific analysis					

Q2. The following MACROECONOMIC factors are important when analysing the performance of banks in emerging markets.

MACROECONOMIC FACTORS	GROUP MEAN
Inflation rate	3.923
Economic growth-GDP and GNP	4.308
Extent of e-business and e-commerce	4.154
Level of interest rate	4.154
Exchange rates	4.077
Political stability	3.769
Country risk	4.231
Government spending	3.538
Money supply	3.538
Tax systems and tax rates	2.615

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Inflation rate					
Economic					

growth-GDP and GNP					
Extent of e-business and e-commerce					
Level of interest rate					
Exchange rates					
Political stability					
Country risk					
Government spending					
Money supply					
Tax systems and tax rates					

Q3. The following lists of INDUSTRY factors are important when analysing the performance of banks in emerging markets.

INDUSTRY FACTORS	**GROUP MEAN**
Industry growth rate	4.077
Business cycle	4.385
Number of banks in the market	3.923
Banking regulation	3.692
Threats of new entrance	4.231
Level of competition between banks	4.077
Number of customers	2.692

	Strongly disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
Industry growth rate					
Business cycle					
Number of banks in the market					
Banking regulation					
Threats of new entrance					
Level of competition					

between banks					
Number of customers					

Q4. The following BANK SPECIFIC factors are important when analysing the performance of banks in emerging markets.

BANK-SPECIFIC FACTORS	GROUP MEAN
Quality of management	4.154
Level of capitalisation	4.000
Credit risk	3.769
Size of bank	4.462
Business strategy	4.077
Loan loss provision	3.923
Financial analysis (e.g ratios)	4.462

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Quality of management					
Level of capitalization					
Credit risk					
Size of the bank					
Business strategy					
Loan loss provision					
Financial analysis (e.g ratio analysis)					

Q5. The DCF model is used as a primary valuation model when valuing banks in emerging markets.

Group mean	4.000

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)

- Agree (4)
- Strongly agree (5)

Q6. Multiples are used as secondary valuation models when valuing banks in emerging markets.

Group mean	4.077

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q7. The DCF model is more ACCURATE in comparison to multiples.

Group mean	4.077

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q8. The DCF is more POPULAR than multiples or relative valuation when valuing banks in emerging markets.

Group mean	4.154

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q9. The equity DCF model is used to value banks in emerging markets.

Group mean	3.923

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)

- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q10. The dividend discount model (DDM) is used when valuing banks in emerging markets.

Group mean	3.769

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q11. The enterprise DCF model is used when valuing banks in emerging markets.

Group mean	2.615

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q12. The price earnings (P/E) ratio is used when valuing banks in emerging markets.

Group mean	4.056

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q13. The price to book value (P/BV) ratio is used when valuing banks in emerging markets.

Group mean	3.889

Choose one of the following answers

- Strongly disagree (1)

- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q14. The price to cash flow (P/CF) ratio is used when valuing banks in emerging markets.

Group mean	2.692

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q15. The price to sales (P/S) ratio is used when valuing banks in emerging markets.

Group mean	2.615

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q16. Time series analysis is used to forecast cash flows for banks in emerging markets.

Group mean	3.846

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q17. Terminal value is used when valuing banks in emerging markets.

Group mean	4.308

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q18. Perpetuity with growth is used to compute terminal value when valuing banks in emerging markets.

Group mean	3.615

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q19. An explicit forecast period of 4-10 years is used when valuing banks in emerging markets.

Group mean	4.154

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q20. A different discount rate is used when discounting explicit cash flows and terminal value.

Group mean	3.692

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q21. Capital asset pricing model (CAPM) is used when estimating the cost of equity for banks in emerging markets.

Group mean	4.154

Choose one of the following answers

- Strongly disagree (1)
- Disagree (2)
- Neutral (3)
- Agree (4)
- Strongly agree (5)

Q22. The following challenges are encountered when valuing banks in emerging markets.

CHALLENGE	**GROUP MEAN**
Difficulties in accessing data	4.077
A lack of businesses to compare with	3.308
Predicting future events	3.846

	Strongly disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
Difficulties in accessing data					
A lack of businesses to compare with					
Predicting future events					

Appendix N: Invitation email for Delphi round three

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

Once again, thank you very much for completing my online survey. The quality of the responses received was astounding and I am very grateful for the effort you have invested in this research.

I welcome you to the third Delphi round which is perceived to be the last round that is if consensus is achieved at the end. The purpose of this round is for you to review your individual opinions from the previous rounds in light of the panel mean. Furthermore, this round gives you the opportunity to change your individual responses from previous rounds if they chose to. Completing this survey should not take more than 15 minutes of your time.

Click here to do the survey: {SURVEYURL}

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: {OPTOUTURL}

Sincerely,

Keith Sabilika	**Supervisors: Johan Hefer**	**Stan Zindiye**
Rhodes University	Rhodes University	Rhodes University
Tel: +27 73 398 2550	Tel: +27 46 603 8246	Tel: +27 046 603 8742
E-mail: g11s4203@ru.ac.za	E-mail: j.hefer@ru.ac.za	E-mail: s.zindiye@ru.ac.za

Appendix O: Email reminder for Delphi round three

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

Recently we invited you to participate in the third Delphi round which is perceived to be the last round, that is, if consensus is achieved at the end. We noted that you have not yet completed the survey, and wish to remind you that the survey is still available should you wish to take part. The survey is titled: Valuation of banks in emerging markets.

The purpose of this round is for you to review your individual opinions from the previous rounds in light of the panel mean. Furthermore, this round gives you the opportunity to change your individual responses from previous rounds if you chose to. Completing this survey should not take more than 15 minutes of your time.

Click here to do the survey: {SURVEYURL}

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: {OPTOUTURL}

Sincerely,

Keith Sabilika	**Supervisors: Johan Hefer**	**Stan Zindiye**
Rhodes University	Rhodes University	Rhodes University
Tel: +27 73 398 2550	Tel: +27 46 603 8246	Tel: +27 046 603 8742
E-mail: g11s4203@ru.ac.za	E-mail: j.hefer@ru.ac.za	E-mail: s.zindiye@ru.ac.za

Appendix P: Thank you email for Delphi round three

Tel: (046) 603 8736 – Fax: (046) 603 8913

Dear Participant

Thank you very much for completing Delphi round three. The quality of the responses received was astounding and I am very grateful for the effort you have invested in this research.

I am glad to announce that we have reached the end of our Delphi rounds. Once the findings have been fully analysed, they will be made available to you on your request.

Once again, thank you very much for investing your expert knowledge and time into the success of this study.

Sincerely,

Keith Sabilika
Rhodes University
Tel: +27 73 398 2550
E-mail: g11s4203@ru.ac.za

Supervisors: Johan Hefer
Rhodes University
Tel: +27 46 603 8246
E-mail: j.hefer@ru.ac.za

Stan Zindiye
Rhodes University
Tel: +27 046 603 8742
E-mail: s.zindiye@ru.ac.za

Appendix Q: Type of analysis undertaken

	5	4	3	2	1	0
Industry analysis	50.00% (9)	33.36% (6)	11.12% (2)	0.00% (0)	0.00% (0)	0.00% (0)
Macro-economic analysis	50.00% (9)	38.89% (6)	5.56 % (1)	5.56% (1)	(0.00)% (0)	0.00% (0)
Bank-specific factor analysis	61.11% (11)	27.78% (5)	5.56% (1)	5.56% (1)	0.00% (0)	0.00% (0)

Appendix R: Popularity of the DCF versus multiples valuation approach

	5	4	3	2	1	0
DCF model	27.78% (5)	50.00% (9)	11.11% (2)	5.56% (1)	55.56% (1)	0.00% (0)
Multiples	5.56% (1)	22.22% (4)	38.89% (7)	27.78% (5)	5.56% (1)	0.00% (0)

Note: 5= strongly agree, 4=agree, 3= neutral, 2= disagree, 1= strongly disagree, 0= no answer

Appendix S: Accuracy of the DCF versus multiples valuation approach

	5	4	3	2	1	0
DCF model	33.33% (6)	44.44% (8)	5.56% (2)	11.11% (2)	5.56% (2)	0.00% (0)
Multiples	0.00% (0)	16.67% (3)	61.11% (11)	16.67% (3)	5.56% (1)	0.00% (0)

Note: 5= very accurate, 4= accurate, 3= neutral, 2= not accurate, 1= not accurate at all, 0= no answer

Appendix T: Primary versus secondary use of the DCF and multiples valuation approaches

	Primary method	Secondary method	Both primary and secondary	Do not use
DCF model	66.66% (0)	16.67% (3)	11.11% (2)	5.56% (1)
Multiples	16.67% (3)	61.11% (11)	5.56% (1)	16.67% (3)

Appendix U: Variants of the DCF valuation approach

	5	4	3	2	1	0
Equity DCF model	66.67% (12)	11.11% (2)	11.11% (2)	5.56% (1)	0.00% (0)	5.56% (1)
DDM	38.89% (7)	27.78% (5)	22.22% (4)	5.56% (1)	0.00% (0)	5.56% (1)

FCF model	0.00% (0)	0.00% (0)	5.56% (1)	16.67% (3)	72.22% (13)	5.56% (1)

Note: 5= very often, 4= often, 3= neutral, 2= seldom, 1=never, 0= no answer

Appendix V: Variants of the multiples valuation approach

	5	**4**	**3**	**2**	**1**	**0**
Price earnings ratio (P/E)	38.89% (7)	38.89% (7)	27.78% (3)	0.00% (0)	5.56% (1)	0.00% (0)
Price to book value (P/BV)	66.67% (12)	11.11% (2)	5.56% (1)	0.00% (0)	0.00% (0)	0.00% (0)
Price to cash flow (P/CF)	0.00% (0)	0.00% (0)	5.56% (1)	11.11% (2)	66.67% (12)	16.67% (3)

Note: 5= very often, 4= often, 3= neutral, 2= seldom, 1=never, 0= no answer

Appendix W: Forecasting techniques

	Delphi Technique	**Scenario Technique**	**Time series analysis**	**Casual forecasting method**	**Other**
Technique used to forecast cash flows	11.11% (2)	11.11% (4)	77.78% (11)	5.56% (1)	5.56% (1)

Appendix X: Length of explicit forecast period

	1-3 years	**4-10 years**	**10+ years**
Length of explicit forecast period	22.22% (4)	77.78% (14)	0.00% (0)

Appendix Y: Estimation of terminal value

	Yes	**No**
Frequency of using terminal value	83.33% (15)	16.67%% (3)

Appendix Z: Estimation of terminal value

	Perpetuity with growth	**Perpetuity without growth**	**Multiples**	**Liquidation value**	**No answer**
Computation of terminal value	61.11% (11)	22.22% (4)	11.11% (2)	5.56% (1)	5.56% (1)

Appendix AA: Discount rates for explicit cash flows and terminal value

	Yes	No
Use of the same discount rates for explicit cash flows and terminal value	27.78%	72.22%

Appendix AB: Challenges encountered when valuing banks in emerging markets

Difficulties in accessing data	82.35%
A lack of businesses to compare with	65.29%
Difficulties in estimating underlying assumptions	35.82%
Predicting future events	76.47%
Unrealistic theoretical assumptions of models used	29.41%

Appendix AC: Determination of cost of equity

	5	4	3	2	1
Capital Asset Pricing Model (CAPM)	66.67% (12)	16.67% (3)	11.11% (2)	5.56% (1)	0.00% (0)
Arbitrage Pricing Model (APM)	0.00% (0)	0.00% (0)	16.67% (3)	61.11% (11)	22.22% (4)
Fama-French three factor model	0.00% (0)	0.00% (0)	5.56% (1)	55.56% (10)	38.89% (7)

Note: 5=extremely important, 4= very important, 3= important, 2= not very important, 1= not important at all.