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An evaluation of the use of professional judgement in corporate valuations in South Africa.

A research report submitted by

Tasneem Gaibie

Student Number: 0502113H

Cell: 073 276 4508

Email: tasneem.gaibie@wits.ac.za

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Supervisor: Avani Sebastian

Co-supervisor: Professor Andres Merino

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Candidate's Declaration

Name of Candidate:	Tasneem Gaibie
Person Number:	0502113H
Degree:	Master of commerce
Supervisor / Co-Supervisor:	Avani Sebastian, Professor Andres Merino
School:	School of Accountancy
Title of Thesis/Dissertation/ Research Report:	An evaluation of the use of professional judgement in corporate valuations in South Africa

Candidate's Declaration:

i. I hereby submit my Masters dissertation for examination (circle applicable).

ii. I confirm that my signed declaration in terms of Rule G9.7 is included in each copy of the dissertation.

iii. I have checked all copies of my dissertation and declare that no pages are missing or poorly reproduced.

Candidate's Signature: Tasneem Gaibie **Date:** 18 October 2022

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Abstract

Corporate valuations can be considered the heart of finance with sensible financial and investment decisions depending largely on the value of a firm. Investment analysts rely on corporate valuation estimates to make investment decisions while financial managers use these corporate valuations for capital budgeting as well as merger and acquisition activities. Global merger and acquisition and capital market activity has increased over the last decade with a significant number of deals being concluded on an annual basis. While the number of deals in South Africa make up a minority portion of the total global deals, foreign investors have shown an interest to invest in South Africa.

Whilst finance research makes extensive reference to firm value, the professional judgement that is applied in its calculation has not been interrogated within the South African market. The focus of this research study was to examine the use of professional judgement within valuations in the South African context. The research aims at identifying aspects in corporate valuations requiring professional judgement and understanding why this professional judgement is necessary.

Explanatory sequential design is the mixed method research technique that was employed to conduct this research. According to this design, the researcher begins by conducting a quantitative study and follows up with subsequent qualitative techniques to help explain the quantitative results.

The research was carried out in four parts. Part one involved collecting data from respondents by means of a survey. A sample of 30 experts were used. The small population size in terms of the number of professionals performing valuations in South Africa made it difficult to select a larger sample. Part two involved descriptive statistical analysis of the survey responses. The content of the surveys was summarised using descriptive statistics and were used to inform further questions for the semi-structured interviews.

Part three involved semi-structured interviews to add richness, reliability and to corroborate the trends identified. The researcher employed a phenomenological methodology to identify the perception of valuation experts regarding the judgement that they are required to apply when performing corporate valuations. The data collected was analysed by identifying common themes and arriving at a description relating to the phenomenon based on their experience. A sample of six valuation practitioners from the original survey sample were interviewed. While a larger sample would provide a broader range of data, obtaining a detailed account of the experience of the six valuation practitioners was sufficient to uncover the core elements of the professional judgment applied in the corporate valuations that they perform.

During part four, the results and findings were interpreted to answer the research question and identify areas of future research.

The results of this research indicate that professional judgement is needed when determining which valuation models to apply, when calculating or applying certain inputs within the theoretical models and when considering adjustments that are processed to the valuation models. Industry nuances is a key reason for why professional judgement in necessary in South African valuations. This along with the limited number of companies listed on the Johannesburg Stock Exchange, make it more difficult to identity directly comparable companies which can be used for input estimation within the valuation models. In an emerging economy like South Africa, there is uncertainty associated with future growth and market conditions. Richness of market information and suitable benchmarks are also challenges faced in the South African economy. Market information and future growth are key inputs within a corporate valuation model. The challenges and uncertainties around these inputs requires the valuation practitioner to apply their professional judgement.

Despite the challenges and uncertainties around valuation inputs, valuation practitioners are all in agreement that having a standard valuation model structure in place is beneficial and creates consistency in the approach to performing corporate valuations. Unfortunately, the level of professional judgement applied within these corporate valuation models can have a material impact on the final value and ultimately impact the management decisions which are made based on these valuations.

Based on this, we can conclude that estimating valuation parameters is a key aspect that needs to be considered by both valuation practitioners and academics. This research report contributes by identifying challenges and uncertainties which necessitate the use of professional judgement within corporate valuations. Identification of these challenges and uncertainties can assist valuation practitioners to place more emphasis on the inputs which have a large level of uncertainty associated with them. The report can further assist valuations practitioners to understand what is considered best practice for corporate valuations in South Africa. Identifying “best practices” and standardising the estimation practices will be beneficial to valuation practitioners by reducing the differences in corporate valuations. More accurate valuations will result in better information, assisting with more accurate and informed financial decisions being made.

Key word

Corporate valuation, professional judgement, valuation model structures, valuation inputs, valuation adjustments.

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Chapter I. Introduction

This chapter sets up the background to the study. It also states the overall problem to be addressed by the study and why addressing this problem is significant. The chapter identifies the research question and objectives as well as highlighting the limitations of the study.

1.1. Overview

Corporate valuations can be considered the heart of finance with sensible financial and investment decisions depending largely on the value of a firm (Damodaran, 2006). Investment analysts rely on corporate valuation estimates to make investment decisions while financial managers use these corporate valuations for capital budgeting as well as merger and acquisition activities (Correia and Cramer, 2008, Levy and Schuck, 1999, Pinto et al., 2019).

Global merger and acquisition and capital market activity has increased over the last decade with a significant number of deals being concluded on an annual basis. In 1990 ten thousand eight hundred and fourteen (10 814) merger and acquisition transactions were recorded globally with a total deal value of USD 540. 2 billion. By 2009, forty thousand one hundred and seventy (40 170) mergers and acquisitions totalling USD 2 186.9 billion were recorded globally. During 2019, global merger and acquisition transactions amounted to forty-nine thousand eight hundred and forty-nine (49 849) deals with a total value of USD 3 701.4 billion. During 2020, global merger and acquisition transactions amounted to forty-five thousand six hundred and fifty two (45 652) deals with a total value of USD 2 835.5 billion (IMAA, 2020). The table below illustrates the percentage growth in deal value over the last decade.

Table 1: Percentage growth in deal value over the last decade

Year	1990	2009	2019	2020
Total deal value (USD billions)	540,2	2 186,9	3 701,4	2 835,5
% growth		305%	69%	-23%
% growth from 1990 to 2020				425%

Source: (IMAA, 2020)

While the results in 2020 have decreased when compared to 2019 given the impact of the COVID19 pandemic, the growth rate of 425% from 1990 to 2020 is an indication of the increase in global merger and acquisition and capital market activity.

While the number of deals in South Africa make up a minority portion of the total global deals, foreign investors have shown an interest to invest in South Africa. In 2019, three hundred and ten (310) merger and acquisition transactions were concluded in South Africa with a total value of USD 17.9 billion (IMAA, 2020). South African M&A deal values increased significantly in the first half of 2019 from USD 3.7 billion for the first half of 2018 to USD 16.5 billion for the first half of 2019 (SAIFM, 2019). Results in 2020 were significant lower given the impact of the COVID19 pandemic. Even though four hundred and forty-nine (449) merger and acquisition transactions were concluded in South Africa the total deal value dropped to USD 3. 7 billion (IMAA, 2020).
Apart from merger and acquisition activity in the economy, valuations are also used by regulators and credit agencies (Bancel and Mittoo, 2014). Fernández (2007) shows the importance of corporate valuations for internal decision-making as they identify sources of economic value creation and destruction within the firm.

Valuations are also used in the application of financial accounting reporting standards. IFRS 3, IAS 36 and IFRS 13 deal with the relevance of performing valuations for financial reporting purposes. IFRS 3 prescribes that all assets from a business combination are included on the statement of financial position of the acquirer at fair value. Any goodwill recorded as a result of the acquisition is required to be tested for impairment annually. IAS 36 prescribes that all current and non-current assets need to be considered for impairment to ensure that they are not overstated on the statement of financial position. IFRS 13 provides a framework for measuring the fair value when prescribed by another IAS/ IFRS.

Valuations are a “product of human judgement” (Gallimore, 1996, p 261). They are not an exact science, despite the theoretical valuation models which are available. Aswath Damodaran has defined valuations as a craft (BVResources, 2015). “Unlike physics and mathematics, indisputably sciences with immutable laws, valuation has principles but none that meet the precision threshold of a science. At the other extreme, valuation is not an art, where your creative instincts can guide you to wherever you want to go and geniuses can make up their own rules.” (BVResources, 2015).The ideal valuation lies somewhere in the middle (Damodaran, 2016, BVResources, 2015). According to French and Gabrielli (2005), uncertainty in comparable data and in the current and future market conditions are among the factors which impact the certainty of a corporate valuation. Many of the inputs needed to perform a valuation or determine fair value require an element of professional judgement, thereby further contributing to the uncertainty of the final valuation output (Palea and Maino, 2013). There is also an element of managerial flexibility included in the forecasted cash flows used in corporate valuations. Management are able to delay, expand, abandon and temporarily alter operations during the course of a company’s existence (Correia and Cramer, 2008). Based on uncertainty associated

with future cash flows, a substantial amount of professional judgement is required when compiling these forecasts and this contributes to the uncertainty of the final valuation output.

Although the judgement applied to certain assumptions within the valuation model may be minimal, the effect on the output can be significant (Bunn and Wright, 1991, Dziwok, 2015, Robinson, C., Stowe, C., Henry, C. & Pinto, C, 2010). Research conducted by Dziwok (2015) illustrates the sensitivity of valuations to changes in certain assumptions. As part of the research, Dziwok (2015) changes certain assumptions in a valuation model in order to assess the impact on the valuation output. Examples of the assessment includes a 1% increase in forecast EBITDA margins resulting in a 10% increase in value and a 0.3 decrease in beta having a 41% increase in company value. A similar exercise was performed by Robinson et al. (2010) the results of which indicated that the company value was sensitive to changes in the risk-free rate and the forecast growth rate. The impact of changing assumptions is specific to each individual company valuation, but based on these examples the impact can clearly be significant (Robinson et al., 2010).

1.2. Statement of the problem

When performing a valuation, valuation practitioners have the choice of multiple valuation models. These valuation practitioners use their professional judgement to determine which model to use. The problem that arises is that different models result in different outputs and it is difficult to establish which value is most representative of market value (Turcas, F., Dumiter, F., Brezeanu, P. & Jimon, S., 2016).

The inputs into valuation models are primarily based on company and market information. However, markets are volatile and there is no guarantee about the outlook of the company being valued and the economy as a whole. Difficulty in forecasting cashflows, variations in growth rates and unstable markets are some of the variables within the theoretical valuation models that provide challenges to practitioners who need to create a valuation that is realistic and as accurate as possible (Turcas et al., 2016). For this reason, valuation practitioners are required to make assumptions about the variable inputs applied in valuation models. Substantiating these assumptions can be problematic and differences in opinions and judgement applied can have a significant impact on the final value.

This research aims to take the first step at identifying aspects in corporate valuations where professional judgement is required and examining why the use of professional judgement within valuations is necessary within the South African context.

1.3. Purpose

Discrepancies in corporate valuations are caused as a result of valuation practitioners making assumptions about the inputs applied in valuation models. Prior research indicates that while most discrepancies arise because theory provides little guidance on estimates, some are also a result of practitioners not following theoretical guidelines (Graham and Harvey, 2001).

The purpose of the research is to identify aspects in corporate valuations where professional judgement is required and examining why the use of this professional judgement is necessary within the South African context. . Similar studies have been conducted in international markets (Fernández, 2007, French and Gabrielli, 2005, Graham and Harvey, 2001, Kolouchová, 2009, Turcas et al., 2016). From a South African perspective, literature and corporate surveys have identified aspects in corporate valuations where professional judgement is required (Correia and Cramer, 2008, PwC, 2012, PwC, 2017, PwC, 2019). In this regard, the research aims to ensure that all aspects requiring professional judgement have been identified. While literature and corporate surveys focus on the aspects within corporate valuations requiring professional judgement, limited research discussing challenges and uncertainties which necessitate the use of professional judgement within corporate valuations are available. Understanding these challenges and uncertainties can assist valuation practitioners to place more emphasis on the inputs requiring professional judgment, understand what is considered best practice for corporate valuations in South Africa and standardise the estimation practices.

1.4. Significance of the study

South Africa is considered to be an emerging economy. The general perception is that emerging markets have limited access to high-quality information (Kolouchová, 2009). According to research performed by Bruner et al. (2002), the accuracy of a valuation relies on the accuracy and reliability of the underlying information. Emerging markets are more susceptible to challenges surrounding the transparency of information, corruption and market volatility. In a survey performed by PwC (2012), developing economy challenges such as the uncertainty of future growth in a developing economy, the lack of comparable companies available for valuation analysis, the lack of data and inconsistent accounting standards and accounting for the country risks were identified as factors increasing the difficulty of performing valuations in emerging markets. These challenges associated with performing valuations in developing economies require valuation practitioners to exercise a level of professional judgment which in turn affects the firm value.

Valuing a firm is essential for both investment and financing decisions. In theory, valuation models exist and are applied to determine company value. Bunn and Wright (1991) are of the opinion that

inputs into statistical models require judgement. Their research classifies these areas of judgement into different categories. Judgement across several models and judgement required for variable section within a model are the categories which impact corporate valuation models. Multiple valuation models are available and valuation practitioners are required to select the model that they choose to rely on. Although there is substantial guidance regarding the different techniques to apply when valuing a firm, the assumptions and estimation methods of inputs applied in the valuation models varies widely in practice as the professional judgement of the valuation expert is required. Difficulty in forecasting cashflows, variations in growth rates and unstable markets are some of the impracticalities within the theoretical valuation models (Turcas et al., 2016).

Finance research makes extensive reference to the importance of corporate valuations and the professional judgement that is applied in its calculation. . The impact of this professional judgement is that two such experts could arrive at substantially different valuation estimates despite using the same model. Acquirers will refer to a corporate valuation when determining the highest price that should be paid for target firms. Similarly target companies utilize the outcomes of corporate valuations to determine the lowest price offer that they will accept (Fernández, 2007). The Heineken- Distell acquisition is a current example of a corporate valuation variance from a South African context. The world's second largest beer manufacturing company, Heineken, is in negotiations to purchase Africa's leading producer and marketer of Ciders, Distell, a company listed on the JSE. Heineken announced its offer to buy the South African company for R38.5 billion in November 2021. Heineken's offer to Distell shareholders come to R180 per share. This is seen as too low by some shareholders. Investment specialist at Ninety One Rob Forsyth said: "The proposed scheme of arrangement involves a complicated web of transactions between Heineken and Distell. The cash offer is not appealing. The R180 per share is at a steep discount to other listed global beverage companies." (Mashego, 2022). Forsyth added that Distell is well placed to take advantage of global trends that have seen beer lose market share to other beverages like spirits and wine. In addition to its Savanna cider brand, Distell, which is the second-largest cider producer in the world, also owns the Hunters Dry, Nederburg, JC le Roux, Klipdrift and Amarula brands. Forsyth highlighted the growth of the global cider market and Distell's flexible local production as the company's other competitive advantages. According to Forsyth Distell should be valued at between R230 and R250 per share (Mashego, 2022).

From this example, we can conclude that estimating valuation parameters is a key aspect that needs to be considered by valuation practitioners. From a South African perspective, literature and corporate surveys have identified aspects in corporate valuations where professional judgement is required (Correia and Cramer, 2008, PwC, 2012, PwC, 2017, PwC, 2019). In this regard, the research aims to ensure that all aspects requiring professional judgement have been identified. While literature and corporate surveys focus on the aspects within corporate valuations requiring professional judgement,

limited research discussing challenges and uncertainties which necessitate the use of professional judgement within corporate valuations are available. This research report contributes by identifying the challenges and uncertainties which necessitate the use of professional judgement within corporate valuations in South Africa. Identification of these challenges and uncertainties can assist valuation practitioners to place more emphasis on the inputs which have a large level of uncertainty associated with them. The report can further assist valuations practitioners to understand what is considered best practice for corporate valuations in South Africa and standardising the estimation practices.

The study also contributes from a methodological perspective. Finance research, especially in South Africa, is dominated by quantitative approaches. This research employs mixed methods research techniques. Explanatory sequential design is the mixed method design that was considered appropriate. According to this design, the researcher begins by conducting a quantitative study and follows up with subsequent qualitative techniques to help explain the quantitative results (Creswell and Clark, 2018). The quantitative phase involved collecting data from respondents by means of a survey. Semi-structured interviews were a secondary approach to add richness, reliability, corroborate and contextualise the results of the surveys.

1.5. Research question

The objective of this research is to examine the use of professional judgement within valuations in the South African context.

The research questions are:

1. What are the aspects of corporate valuation that require the judgment of valuation professionals in South African corporates?
2. Why do these aspects of corporate valuations require professional judgement?

1.6. Assumptions, limitations, delimitations

An inherent limitation associated with qualitative research is the subjective nature and the extensive inputs of the researcher in the data collection and interpretation process, also referred to as the coding process (Linneberg and Korsgaard, 2019). It is possible that in a study of this nature differing perceptions of individuals may not be properly captured. The participants in this research are experts within the industry who have provided in depth relevant information for purposes of the study. The richness and detail that was obtained in the interview process mitigates this limitation. Furthermore, the researcher remained neutral during the coding process and scrutinised the interview responses for inconsistencies and contradictory findings (Linneberg and Korsgaard, 2019). The researcher checked the themes with a fellow researcher who is skilled in the valuation field also to minimise the subjectivity of the coding process.

Another limitation is that the questions of the survey may not be understood. Prior to the collection of data, a pilot study was conducted to try to ensure that all the key aspects of a valuation are covered.

Finally, this research is limited to South African corporate valuations performed on a minority, controlling, marketable or non-marketable basis. Real estate valuations have been excluded from this research report as they are based on different valuation techniques and models. The experts have been questioned on the approaches and assumptions that they apply in a South African context when performing corporate valuations. Therefore, the results of the study may not be applicable outside the South African context.

Chapter II. Literature Review

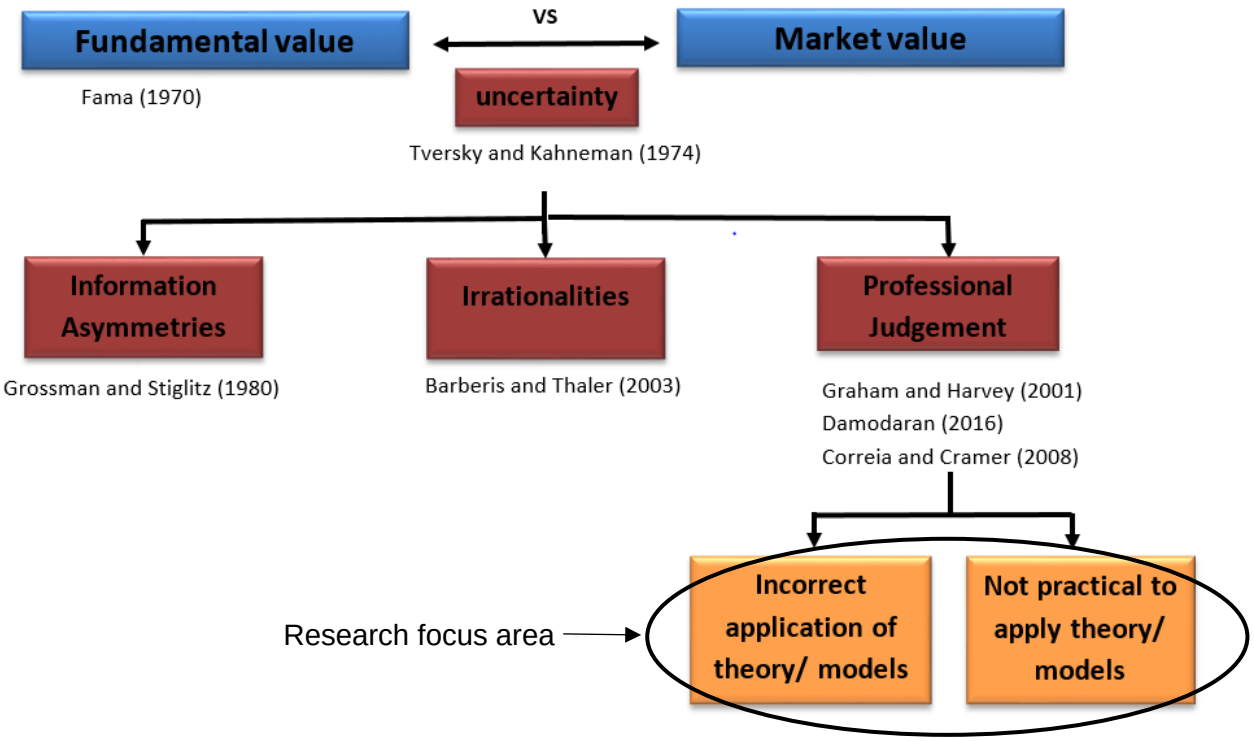
Chapter 2 presents the studies literature review. The chapter has three major sub-sections, the first provides an overview of the theoretical framework, the second provides an overview of corporate valuations, the third section deals with key inputs for discounted cash flows and the fourth section deals with relative valuations.

2.1. Theoretical framework

According to the Modigliani-Miller theorem, a firm's fundamental value is typically defined as the present value of expected future cash flows. A firm's market value looks at what it would cost to invest in the firm. Fama (1970) developed the theory that capital markets are efficient and security prices fully reflect all available information. The implication of this efficient market hypothesis is that securities are appropriately priced given that investors are well-informed and intelligent. However, the difference between stock prices and their fundamental value is an indication of the uncertainty within capital markets. The degree of deviation between the fundamental value and the market value represents the level that the stock price is over or undervalued relative to its fundamental value (Chen et al., 2013).

The diagram below (Figure 1) presents a diagrammatical overview of the key finance and economics theoretical frameworks that are relevant to this study. It provides theoretical context for the study and shows related seminal research Ultimately the present research contributes to the exiting literature on the differences in company fundamental value and market value. Yet, it focuses more narrowly on the role of professional judgement in the application of theoretical valuation and asset pricing models. The rest of this chapter details the use of professional judgement in the context of valuations, as per the prior research.

Figure 1: A summary of related theoretical frameworks



Valuations in emerging markets are significantly impacted by information asymmetry and uncertainty as a result of lack of objective financial and operating data (Sanders and Boivie, 2004). Research performed by Grossman and Stiglitz (1980) has indicated that there is a conflict between the efficiency with which markets spread information and incentives to acquire information. As a result of this information asymmetry, economic models do not perfectly reflect the information available and are misleading which can result in adverse market decisions (Grossman and Stiglitz, 1980). Markets rely on the professional education and training of valuation practitioners to reduce information asymmetry (Sanders and Boivie, 2004).

Theoretically, guidance has been provided to use financial fundamentals and theories to value a firm. However, in practice subjectivity and biases influence the valuation outcome (Damodaran, 2015). According to Barberis and Thaler (2003), behavioural finance is based on the assumption that some individuals are not fully rational. This irrational behavior is driven by psychological biases that arise due to people's beliefs and preferences (Barberis and Thaler, 2003, Nguyen and Schüßler, 2013). Damodaran (2015), Gallimore (1996) and Levy and Schuck (1999) are of the opinion that valuations are not only impacted by professional judgement but are further contaminated by biases.

As discussed in the previous sections, many of the inputs needed to perform a valuation or determine fair value require an element of professional judgement (Palea and Maino, 2013, Turcas et al., 2016, Graham and Harvey, 2001, Bunn and Wright, 1991, Damodaran, 2016, Fernández, 2007, Kolouchová, 2009, Correia and Cramer, 2008). Although there is substantial guidance regarding the different techniques to apply when valuing a firm, the assumptions and estimation methods of inputs applied in the valuation models varies widely in practice as the professional judgement of the valuation expert is required.

As part of the research, the researcher has considered both minority valuations and valuations performed on a controlling basis. In this regard, valuation practitioners have been questioned about the minority discounts and control premiums that they apply within their corporate valuations.

The paragraphs that follow deal specifically with the professional judgement in a valuation context as the focus of this research.

2.2. Overview of corporate valuations

Corporate finance textbooks make reference to a number of valuation techniques. In a survey on the Valuation Approaches and Metrics performed by Damodaran (2006); Income Valuations, Relative Valuations and Asset Valuations were considered to be the key focus areas for valuations of companies and stocks. As part of this study, the researcher confirmed with valuation practitioners whether these methods are most commonly used in South African corporate valuations or if valuation practitioners consider other approaches more appropriate in a practical, South African context. The remainder of Chapter 2 discusses key areas of uncertainty in valuations that require the valuer to exercise their professional judgement. Each section includes a review of related literature as well as an explanation of why the uncertainty exists.

2.3. Key inputs of an Income Valuation: Discounted Cashflow (DCF)

The discounted cash flows is a method of determining a company's value based on the future cash flows it will generate and discounting these cash flows by an appropriate discount rate which is dependent on the risks of the cash flows (Fernández, 2007, Damodaran, 2006). The key components of the DCF are:

- forecast cash flows;
- discount rate; and
- terminal value

2.3.1. Forecasted cash flows

Forecasted cash flows refer to the cash flows that an organization generates from its operations after covering working capital requirements and fixed asset investment. Unfortunately, details relating to forecasts cannot be directly obtained from accounting records as these report historical transactions. While the forecasts are based on the future growth prospects of the organization, historic growth and strategies play a crucial role in the accuracy and reliability of the forecasts (Fernández, 2007). Limited macroeconomic, industry and market data in emerging markets contribute to the difficulties in compiling cash flow forecasts (PwC, 2012).

Theoretically, good judgement and common sense is necessary to compile the forecasted cash flows (Fernandez, 2009). However, there is also an element of managerial flexibility included in the forecasts as management are able to delay, expand, abandon and temporarily alter operations during the course of a company's existence (Correia and Cramer, 2008). Based on uncertainty associated with future cash flows, a substantial amount of professional judgement is required when compiling these forecasts. Some valuation practitioners opt to replace uncertain cash flows with more conservative cash flow estimates. Unfortunately, these adjustments are subjective and can therefore vary widely across valuation practitioners valuing the same asset (Damodaran, 2006). For example, Lawrence and O'Connor (1992) have found that financial forecasts are subject to recency biases. The results of their research indicated that forecast values were excessively weighted to recent financial information.

In his capacity as a business consultant and professor, Fernández (2007) has reviewed more than a thousand valuations. As part of his review, he has noted certain common discrepancies within these valuations. While some of the discrepancies relating to forecasts are solely as a result of errors made by valuation practitioners, discrepancies such as optimism of forecasted cash flows are a consequence of professional judgement required to estimate the cash flow forecasts.

2.3.2. Estimating discount rates

Once the forecasts have been estimated, the organisation's value cannot be determined by simply adding the forecasts. The future cash flows need to be discounted by an appropriate discount rate to compensate for the risks associated with receiving this cash at a later date.

Companies can raise capital either through debt or equity. The discount rate utilized in the valuation is calculated by weighting the cost of debt and the cost of equity in relation to the company's capital structure (Fernández, 2007). Simply put, the three key components to calculate the appropriate discount rate is the estimated cost of equity, the estimated cost of debt and the proportionate capital structure (PwC, 2012).

2.3.2.1. Cost of equity

A large amount of subjectivity is involved in estimating the cost of equity (PwC, 2012). There are multiple techniques available to estimate the cost of equity. Examples of these include:

- The arbitrage pricing theory (APT) developed by Stephen Ross in 1976;
- The capital asset pricing model (CAPM) developed by William F Sharpe in the 1960s;and
- Fama-French three factor model developed by Eugene Fama and Kenneth French in 1992.

While academic research has indicated that the capital asset pricing model ("CAPM") is the most commonly used technique to estimate the cost of capital (PwC, 2012, Correia and Cramer, 2008, Graham and Harvey, 2001, Graham and Harvey, 2002, Kolouchová, 2009), there is no definitive consensus on the application of the cost of equity estimation (Kolouchová, 2009, Bancel and Mittoo, 2014) and many academics have noted that CAPM is flawed (PwC, 2012, Kolouchová, 2009, Cox and Britten, 2019, Jagannathan and Meier, 2002).

The CAPM formula itself is relatively simple. The computation requires just three inputs- the risk-free rate, market risk premium and firm beta. However, there is a great subjectivity in estimating these inputs (Correia and Cramer, 2008). CAPM is based on the assumption that a ***risk-free*** asset exists. However, a major concern with this assumption is to identify a proxy for this risk-free asset (Kolouchová, 2009). Valuation practitioners use government bonds as a proxy for the risk-free rate even though these are not necessarily completely risk-free, especially in an emerging economy (Kolouchová, 2009). The length of the government bond applied is also an area of subjectivity. Academically, the maturity of the bond should match the maturity of the cash flows. However, practically, this is not as straightforward since the all the cash flows relating to business operations do not necessarily have the same maturity (Kolouchová, 2009). As such, the general consensus is that a long term government bond is used as a proxy for the risk-free rate. This approach is acceptable as the long-term bond yield matches the long term nature of the projects being valued given the going concern assumption of a business (Correia and Cramer, 2008, Kolouchová, 2009). The PwC valuation methodology survey 2016/2017 indicates that in South Africa, the 10 year government bond is the most popular benchmark of the risk-free rate. However, many respondents have indicated the use of other government bonds with terms longer or shorter than 10 years. Some respondents opted to utilize 10 year bond yields derived from the yield curve (PwC, 2017).

The ***equity risk premium*** is the additional return over the risk-free rate that investors require for investing in the market which has greater risks over and above risk-free investments. Theoretically there are different approaches to calculate the equity risk premium (Kolouchová, 2009, Jagannathan and Meier, 2002). However, there is very little guidance on these calculations (Correia and Cramer, 2008, Bancel and Mittoo, 2014) and this results in a wide range of equity risk premium estimates

(Kolouchová, 2009). Furthermore, in an emerging economy, insufficient and unreliable data add to the complexities of calculating an equity risk premium (Damodaran, 2003). The results of the PwC valuation methodology survey 2016/2017 highlights the lack of academic guidance with respondents using market risk premiums ranging between 2% to 20% (PwC, 2017).

"***Beta*** measures the sensitivity of a share price to fluctuations in the market as a whole" (PwC, 2012, p 35). The model requires a forward looking beta but there is no guidance on how to calculate this beta (Bancel and Mittoo, 2014). Due to the lack of guidance on how to calculate a forward looking beta, the beta is calculated by regressing the historical return of a company to the return of the market (PwC, 2017) and then adjusting this historical beta for any changes in the firms future operations (Bancel and Mittoo, 2014). The historic beta calculation is an easy calculation but it involves assumptions which require professional judgement and inevitably can result in different beta outcomes (Bancel and Mittoo, 2014). The market index, risk-free rate, time period and intervals over which beta is calculated are all the inputs which can considerably impact the estimation of beta (Kolouchová, 2009, Bancel and Mittoo, 2014).

In South Africa, the choice of market index used in the beta calculation is an area of subjectivity and theory does not provide a definitive answer on which index is the most appropriate (PwC, 2017, Correia and Cramer, 2008). While most valuation practitioners in South Africa use the All Share Index (ALSI) for purposes of their beta calculation, other practitioners are of the view that there is an overweighting of companies in the resource sector on the JSE. As such, these practitioners opt to use the Financial and Industrial Index (FINDI) to determine the company beta (Correia and Cramer, 2008). The problem with using the FINDI as a market index is that the number of companies can be considered insufficient (Kolouchová, 2009). Research performed by Fernandez (2009) indicates that some practitioners calculate beta using professional judgement. While these practitioners are a minority, they consider qualitative factors, logical magnitude and professional judgement to estimate betas (Fernandez, 2009). While some valuation practitioners perform in house beta calculations, many practitioners rely on service providers to source betas. A wide range of sources such as Bloomberg, Reuters and Capital IQ are available (PwC, 2019). These service providers often make adjustments in calculating beta to compensate for estimation errors and illiquidity adjustments for thinly traded shares. They also use different frequencies when estimating beta (PwC, 2012). Obtaining betas from these service providers emphasises the professional jusdgement present within the beta calculation.

A key flaw in the CAPM model is that only considers systematic risk but does not take **specific project risk** into account (PwC, 2017, Kolouchová, 2009, Bancel and Mittoo, 2014). This has resulted in the largest subjectivity to calculate the cost of equity. While most valuation practitioners agree that cost

of equity should be adjusted for project specific risk, theory does not provide any guidance in this regard and the practitioners are required to make adjustments based on their own assessment of a project's risk (Bancel and Mittoo, 2014). Based on the above, it is evident that professional judgement plays an instrumental role in the determination of the cost of equity.

2.3.2.2. Cost of debt

According to theory, the cost of debt included in the cost of capital calculation is the incremental after tax cost of debt (Correia and Cramer, 2008). In calculating the cost of debt, the two areas of potential subjectivity is the debt term and the cost of debt included in the cost of capital calculation (Bancel and Mittoo, 2014). Some practitioners include short-term debt in their cost of debt calculation. While it makes sense to include long term debt in the WACC calculation because the valuation is based on future cash flows into perpetuity, in South Africa, not all corporates have the privilege of having access to long term finance from banks. The implication of this is that the long-term debt needs to be estimated assuming that there is a potential to raise this long-term debt. There are also not many actively traded corporate bonds locally. This ultimately results in some valuation practitioners using the short-term debt in their cost of debt calculation (Thayser, 2015).

2.3.2.3. Capital structure

While theory recommends the use of target capital structure, in practice, the actual capital structure is sometimes utilized in the cost of capital calculation, which in some instances is based on the pecking order principals (Graham and Harvey, 2002). The respondents of the PwC 2016 survey indicate that in some instances the capital structure is based on actual gearing levels. A reason for this is because there is insufficient information available to determine the target gearing level. The risk of applying an incorrect debt equity ratio is that the cost of capital will be overstated or understated (Correia and Cramer, 2008).

2.3.3. Terminal value

The organization's long-term growth assumption is the key input to calculating the terminal value. The terminal value usually contributes a significant portion of the final value and is sensitive to any long term growth changes (Bancel and Mittoo, 2014). There is no definitive method to calculate the terminal value and practitioners use exit multiples, the Gordon growth model or a net asset assessment to calculate this terminal value (PwC, 2012). A criticism of the terminal growth calculation is that the underlying forecasts are very difficult to estimate as there is a lot of uncertainty regarding forecasts which are far into the future (Jennergren, 2008). The valuation practitioner also needs to determine what the appropriate long-term growth rate is. The accuracy of the terminal growth calculation is dependent on the reasonableness of the terminal growth rate (Nissim, 2019). Growth equal to inflation implies that the company will have no real growth. If a company operates in a growing

market, inflationary growth implies a declining market share. On the other hand, assuming long term growth in line with market growth implies that the company will maintain their market share forever (Sabal, 2013). The valuation practitioner needs to apply professional judgement to determine the rate which best represents the long-term growth rate of the firm being valued. While the long-term inflation rate is commonly used as the growth rate in the terminal value calculation, other growth rates are also considered appropriate. Damodaran (2006) recommends that the terminal growth rate be based on the risk-free rate. Lundholm and Sloan (2007) recommend the long-term GDP rate is used (Shaked and Kempainen, 2009). Mills (2005) performed an analysis to determine the impact of terminal growth rate on the corporate valuation outcome. Assuming a terminal value of 5%, the terminal value of Jordan Telecom was Japanese $429 million. Using a 6% terminal growth rate resulted in a terminal value of Japanese $490 million. This demonstrates the sensitivity of the terminal growth calculation to changes in the growth rate.

2.3.4. Macroeconomic uncertainty in South Africa

The current political and economic climate in South Africa has contributed to some of the highest levels of uncertainty seen in decades. These high levels of uncertainty exacerbate the difficulties already experienced in choosing the key inputs of any valuation such as growth rates, the cost of debt and the return on equity markets.

2.4. Adjustments to relative valuation

Relative valuations are a valuation technique which relies on comparable company multiples. One of the main assumptions of this valuation technique is that the firm being valued is comparable to other listed companies. The implications of this assumption is that the growth and risk profile of the comparable companies are similar to those of the firm being valued (Kaplan and Ruback, 1995)

However, no two companies are exactly alike (Kaplan and Ruback, 1995, Koller et al., 2005, Damodaran, 2006) and as a result, adjustments are processed to the comparable company multiples to end up with a multiple that better represents the subject company growth and risk.

The adjustments processed by valuation practitioners are subjective and can be impacted by biases relating to the subject company and the selected comparable companies (Damodaran, 2006).

2.5. Synthesis

From prior literature, it appears that there are many possible reasons why valuation practitioners are required to apply professional judgement when performing corporate valuations. Difficulty in forecasting cashflows, variations in growth rates and unstable markets are some of the complexities

that arise during the practical application of theoretical valuation models (Turcas et al., 2016) and as a result, valuation practitioners are required to use an element of professional judgement to determine these variable inputs within valuation models. This concern is further enhanced in developing economies where challenges such as the uncertainty of future growth, the lack of comparable companies available for valuation analysis, the lack of data and inconsistent accounting standards and accounting for the country risks require valuation practitioners to exercise a level of professional judgment. In addition to this, real world scenarios are complex and require judgment to apply theoretical models. Research performed by Graham and Harvey (2001) focuses on the practice of corporate finance. Their work encourages other researchers and academics to develop new theories by abandoning and modifying theories which are not feasible in practice. In certain instances, professionals do not understand the theory relating to valuation models well enough. These are just some of the main reasons for using professional judgment. These themes have been incorporated into the survey questions and their proposed analysis has been detailed in the methodology section.

Chapter III: Methodology

Chapter 3 presents the research methodology. It deals with all the major sections, including research design, the data collection and analysis, the population and sample and the reliability and validity of the research.

3.1. Research design

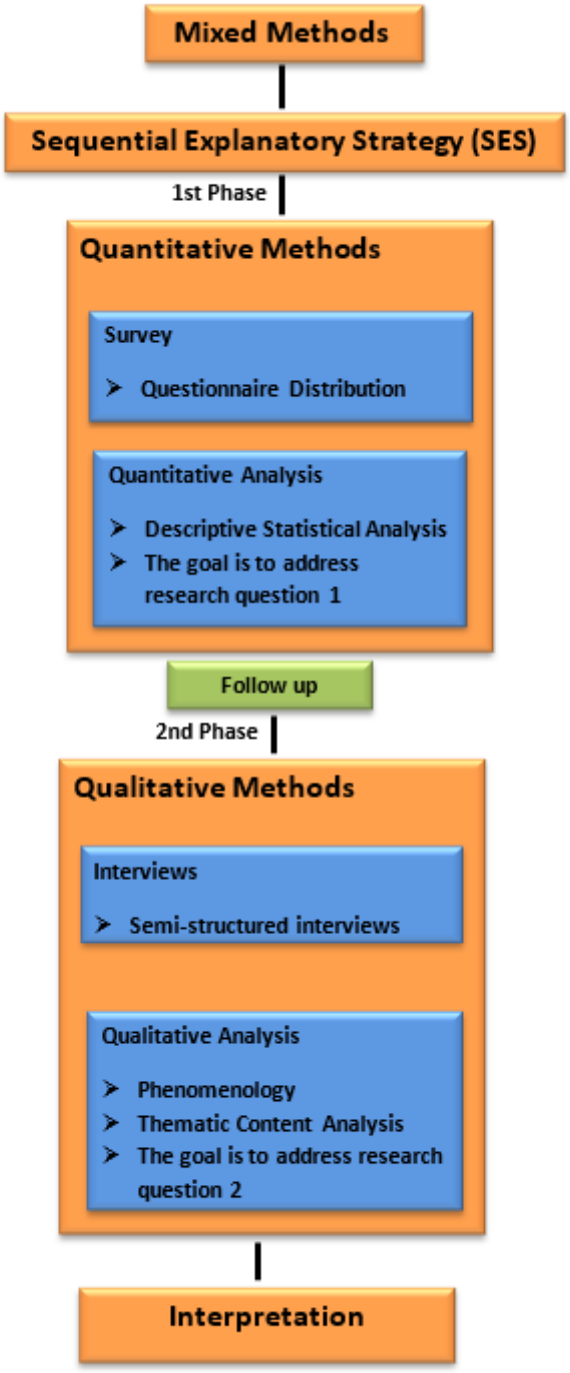
The objective of this research is to examine the use of professional judgement in the South African context, specifically, what are the aspects of corporate valuations that require the judgment of valuation professionals in South African corporates and why do these aspects of corporate valuations require professional judgement? To this end, mixed methods research techniques were employed. Explanatory sequential design is the mixed method design that was considered appropriate. According to this design, the researcher begins by conducting a quantitative study and follows up with subsequent qualitative techniques to help explain the quantitative results (Creswell and Clark, 2018). The first research question, dealing with the aspects of corporate valuations that require the judgment of valuation professionals in South African corporates, was answered using data obtained from a survey. The results of the survey, combined with the themes from the semi-structured interviews, were used to answer the second research question which explores the reasons for the use of professional judgement.

The research was carried out in four parts. Part one involved collecting data from respondents by means of a survey. Part two involved descriptive statistical analysis of the survey responses. Part one and two are collectively referred to as phase one. The content of the surveys were summarised using

descriptive statistics and were used to inform further questions for the semi-structured interviews. Part three involved semi-structured interviews to add richness, reliability and to corroborate the trends identified. The researcher employed a phenomenological methodology to identify the perception of valuation experts regarding the judgement that they are required to apply when performing corporate valuations. Phenomenology involves collecting the views of participants to ascertain what the participants have in common with regards to their experience. The process required the researcher to collect data from individuals who have experience in the phenomenon being studied. The data was analysed by identifying common themes and arriving at a description relating to the phenomenon based on their experience (Creswell et al., 2007). In the case of this research, the phenomenon of interest related to the practical experiences of applying professional judgement in the corporate valuations performed by valuation professionals (Wilson, 2011). In the final part, the results and findings were interpreted to answer the research question and identify areas of future research. Part three and four are collectively referred to as phase two. This four-part approach was in line with the "basic procedures in implementing an explanatory sequential mixed methods design" as recommended by Creswell and Clark (2018).

The diagram below (figure 2) presents a diagrammatical overview of the research method that was applied.

Figure 2: Overview of the research method



(Carmichael, 2020)

3.2. Data collection, analysis and interpretation

“When designing a questionnaire it is easy to overlook mistakes and ambiguities in question layout and construction” (Wilkinson and Birmingham, 2003). In order to avoid these errors, it is advisable to pilot your survey with a small sample of people who will eventually complete the questionnaire (Wilkinson and Birmingham, 2003). The survey was sent to 2 respondents as part of the pilot study. Based on the responses received from these surveys, the questions were appropriately adapted. Changes to the survey were minimal and related to expanding some of the responses as well as allowing participants to include explanations to justify responses that could be ambiguous. Refer to Appendix A for the final adapted questionnaire based on the responses received from the pilot study. This survey was compiled based on prior research on the impact of professional judgement and biases on valuations (Correia and Cramer, 2008, Bancel and Mittoo, 2014, Levy and Schuck, 1999, Fernández, 2007, French and Gabrielli, 2005, Damodaran, 2015, Gallimore, 1996, Lawrence and O'Connor, 1992, Pinto et al., 2019). The aim of the survey was to be able to answer the first research question: What are the aspects of corporate valuation that require the judgment of valuation professionals in South African corporates?

Once the survey was finalized based on the outcomes of the pilot study, potential participants were invited to participate in the study. These participants were purposefully selected by the researcher for their expertise in corporate valuations. The participants consisted of valuation practitioners in South Africa holding professional qualifications and that have a high level of experience. The requirements needed to meet the selection process was that the valuation practitioner must hold a professional qualification, such as Chartered Accountant South Africa [CA(SA)], Chartered Financial Analyst (CFA) or an equivalent designation. A further criterion was that participants must have at least five years post-qualification experience. These participants were briefed on the research question and the purpose of the study. Electronic copies of the survey were emailed to recipients. Electronic responses were collected using Google Forms.

The results of the surveys were analysed using descriptive statistics. The aim of this analysis was to address Research Question 1 and identify aspects within corporate valuations that require the judgment of valuation professionals. Thereafter, the results of the survey were explored further in semi-structured interviews with selected valuation professionals based on their availability and willingness to participate. The sample of valuation practitioners interviewed were selected from the original survey sample. The participants included senior valuation practitioner from audit firms, consulting firms and merchant banks with valuation experience in excess of 10 years. This ensured that the interview results included the experience and views of all major participants within the corporate valuation industry. Selecting valuation practitioners with a high level of experience added to the richness of data in the interview process and contributed to the findings of the study being more

meaningful. Appendix B contains questions that were used to guide the interviews. The purpose of the interviews was to determine the main reasons for the use of professional judgement and to answer the second research question: Why do the aspects of corporate valuations identified in the survey require professional judgement? Interviews were conducted virtually via Microsoft Teams. On average, interviews were between 30 to 45 minutes each. During these interviews, interview participants were asked open ended questions to prompt discussions with the valuation practitioners, to gain an understanding of their valuation experiences and to delve deeper into the themes that were identified as part of the surveys. These open-ended questions added richness and reliability to the data collected. This phase of the project involved a phenomenological methodology and a deductive thematic analysis of interview transcripts, juxtaposed by the results of the survey. Phenomenology was used to identify the perception of valuation professionals regarding the judgement that they are required to apply when performing corporate valuations. The results of the interviews were analysed using thematic content analysis and comprised an analysis of the responses to derive patterns and themes and to obtain an understanding of the actual experiences of the valuation professionals (Hsieh and Shannon, 2005). As part of the interview process, the researcher was interested in describing the experiences of the valuation professionals, the phenomenon of interest being the professional judgement that they apply in corporate valuations. Phenomenology involves collecting the views of participants to ascertain what the participants have in common with regards to their experience. The process required the researcher to collect data from individuals who have experience in the phenomenon being studied. The data was analysed by identifying common themes and arriving at a description relating to the phenomenon based on their experience (Creswell et al., 2007).

As part of the thematic content analysis, the researcher firstly familiarized herself with the content and data. Once the researcher was comfortable with the data, the coding process commenced. This phase involved working through the interview responses and analysing and categorising these responses into themes. Themes were identified by “bringing together components or fragments of ideas or experiences” capturing “something important in relation to the overall research question” (Nowell et al., 2017) and expressing the essence of the practical experiences of applying professional judgement in the corporate valuations performed by valuation professionals (Wilson, 2011). The researcher employed a deductive approach when identifying themes. This approach implied that the researcher used pre-existing frameworks and theories to identify themes. This approach was useful to emphasis aspects of the data that could be understood in the context of the pre-existing framework (Kiger and Varpio, 2020). Once the themes were identified, the researcher reviewed the themes in order to identify if there was sufficient data to support each theme. As part of this reviewing phase, themes were refined to capture the ideas that were evident in the interview responses. Each theme was then analysed in detail for the researcher to link the themes to the research questions. The researcher checked the themes with a fellow researcher who is skilled in the valuation field also to minimise the

subjectivity of the coding process. The themes identified were used to illustrate practices followed by valuation professionals that were inconsistent with valuation theories as well as areas where valuation theories provided minimal guidance on assumptions and inputs used in valuation models, encouraging professional judgement, biases and other inherently risky behaviours to be incorporated in the outcomes of the corporate valuations performed (Wilson, 2011). The final phase involved a final analysis and write-up of this report in a concise and logical manner which clearly communicates the findings (Nowell et al., 2017).

3.3. Population and sampling

The population consisted of valuation practitioners in South Africa holding a professional qualification, such as Chartered Accountant South Africa [CA(SA)], Chartered Financial Analyst (CFA) or an equivalent designation. A further criterion was that participants must have at least five years post-qualification experience.

3.3.1. Surveys

Purposive sampling was used which entailed selecting a sample from the population with the most information on the subject of interest (Hoeber et al., 2017). The sample chosen impacted the quality of data received, thus respondents were competent and provided reliable information (Tongco, 2007). The disadvantages of a purposive sample are twofold; namely, one cannot measure or control variability and bias, and results from the data cannot be generalised to the population (Acharya et al., 2013). However, the risk of bias was mitigated by the fact that the study focused on valuation practitioners that have a high level of experience and therefore the findings of the study are likely to be more meaningful as a result of this (Leedy and Ormrod, 2015)**.**

The criteria to be included in the sample was that the respondent must hold a professional qualification, such as Chartered Accountant South Africa [CA(SA)], Chartered Financial Analyst (CFA) or an equivalent designation. A further criterion was that participants must have at least five years post-qualification experience. Holding a professional qualification and/or designation coupled with the requisite work experience ensured that the respondents are qualified to provide rich data for the research. The participants included valuation practitioner from audit firms, consulting firms and merchant banks. This ensured that the results included the experience and views of all major participants within the corporate valuation industry. The rationale for choosing this sample was to obtain depth, insight and foresight.

A sample of 30 experts were used. The small population size in terms of the number of professionals performing valuations in South Africa made it difficult to select a larger sample.

3.3.2. Semi-structured interviews

Based on the explanatory sequential design being applied, the results of the survey were further explored through a series of semi-structured interviews (Creswell and Clark, 2018). The open-ended questions included in the semi-structured interviews were designed to prompt discussions with the valuation practitioners, to gain an understanding of their valuation experiences and to delve deeper into the themes that were identified as part of the surveys. Semi-structured interviews were conducted for this qualitative phase using phenomenological methodology. The researcher asked the valuation practitioners to give an account of their experience performing corporate valuations. Probing questions were asked to encourage the experts to elaborate on their personal experiences of applying professional judgement in corporate valuations (Starks and Brown Trinidad, 2007).

The semi-structured interviews were a secondary approach in order to add richness, reliability, corroborate and contextualise the results of the surveys. The use of phenomenology contributed to an in-depth understanding of the lived experiences of the valuation practitioners (Starks and Brown Trinidad, 2007, Wilson, 2011). In order to develop an understanding of the lived experience of valuation practitioners and identify the common features relating to the application of professional judgement applied in the corporate valuations that they perform, a sample of six valuation practitioners from the original survey sample were interviewed. When selecting participants for the interview process, senior valuation practitioners were selected. These practitioners all have valuation experience in excess of 10 years. Selecting valuation practitioners with a high level of experience added to the richness of data in the interview process and contributed to the findings of the study being more meaningful. While a larger sample would provide a broader range of data, obtaining a detailed account of the experience of the six valuation practitioners was sufficient to uncover the core elements of the professional judgment applied in the corporate valuations that they perform. This is validated through research performed by Starks and Brown Trinidad (2007), which stipulates that the typical sample size for phenomenological studies range from 1 to 10 individuals with the relevant experience. Research performed by Creswell and Poth (2016) also supports the narrow range of sampling for a phenomenological study as the most important thing in qualitative research is the quality not the quantity. According to Dukes (1984), in the case of phenomenology, a sample size of one is sufficient. While this claim seems alarming, the essence of phenomenology is to understand the lived experience which can be fully discoverable in an individual case. However, in selecting a sample of one, there is a risk of seeing a biased view and Dukes (1984) therefore recommends a sample size of between 3 - 10 subjects. Creswell and Poth (2016) also recommends a sample of between 3 - 10 individuals with the relevant experience. The researcher was able to address the research question adequately within these 6 interviews and was able to gain a comprehensive understanding of the professional judgement applied in corporate valuations in South Africa. In addition to the comprehensive understanding, no new themes were identified after the first 4

interviews and the researcher was able to conclude that saturation was achieved (Constantinou et al., 2017).

3.4 Ethical Considerations

The researcher was granted ethics clearance by the University based on the proposal presented to the School's Post Graduate Committee. In accordance with the requirements for this clearance, the researcher ensured that no sensitive information was requested and the identities of respondents was kept confidential, even in the writing up of the results for this final report. In addition, respondents were provided with details of the study in a Participant Information Sheet. Their consent was specifically requested using a Consent Form, which contained the details of the Wits Ethics Committee as well as the researcher's supervisor's details.

3.5. Validity and Reliability

For a study to be useful it has to provide valid answers to the question that was asked, for a study to be legitimate it requires internal and external validity (Leedy and Ormrod, 2015). A qualitative researcher should be concerned about validity and reliability throughout the various stages of the research process (Patton, 2002), which can be conceptualized as "trustworthiness" (Golafshani, 2003). According to Lincoln and Guba (1985), trustworthiness in qualitative research involves the establishment of: credibility (results are believable and inspire confidence), transferability (applicable to other contexts), dependability (repeatability and consistency of results) and confirmability (results are impartial and supported by participant responses).

In order to ensure content and construct validity, the researcher considered and implemented the following:

- The survey questions were formulated with reference to prior academic literature as well as aspects of valuation covered in surveys in practice.
- A pilot study was conducted. Respondents of the pilot study were requested to comment on the clarity of the survey. This enhanced the content validity of the survey, especially since the pilot study involved respondents who had experience in valuations in practice.
- All respondents hold a professional qualification and have 5 years post qualification experience which increased the probability of valid information;
- The researcher checked the themes with a fellow researcher who is skilled in the valuation field also to minimise the subjectivity of the coding process.

Semi- structured interviews provided further data to corroborate and validate findings. The open-ended questions included in the semi-structured interviews were designed to prompt discussions with

the valuation practitioners, to gain an understanding of their valuation experiences and to delve deeper into the themes that were identified as part of the surveys. These open-ended questions added richness and reliability to the data collected. Triangulation of all the data collected was used to increase the validity of the study. Triangulation refers to the use of multiple methods or data sources in qualitative research to develop a comprehensive understanding of phenomena and was used to test validity through the convergence of information from different sources. Method triangulation refers to the process of comparing qualitative and quantitative data and is seen as a form of comparative analysis. As previously discussed, the content of the semi-structured interviews was used to provide rich data to contextualise the findings of the survey. Triangulation will be used to determine if the findings from the two data sources used in this study converge and whether there is consistency across the responses obtained (Patton, 2002).

Chapter IV. Results and Discussion

This chapter presents the results for both the surveys and semi-structured interviews.

4.1. Results of phase 1: Surveys

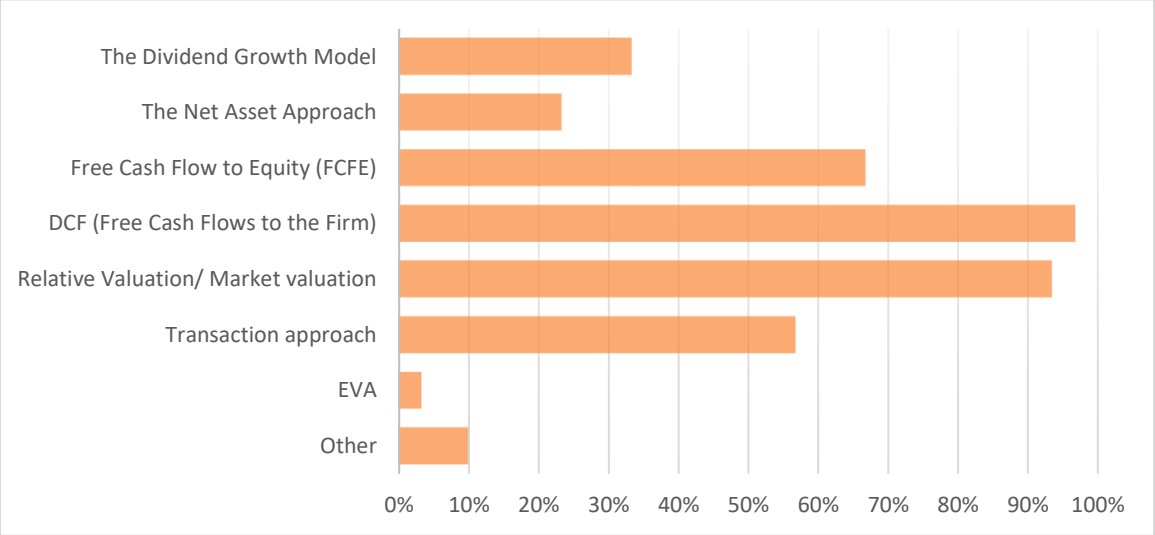
The aim of this analysis was to address Research Question 1 and identify aspects within corporate valuations that require the judgment of valuation professionals. Surveys were distributed to large audit firms, corporate banks and consultancy firms that offered valuation services to corporates. The researcher used their own professional networks to distribute the survey and follow up on responses. In line with the requirements from the process of obtaining ethics clearance from the University, the researcher did not pursue non-responses other than the steps outlined above. Responses were received from 30 valuation practitioners. These responses were from practitioners from audit firms, banks and consultancy firms, comprising a representative sample of practitioners.

4.1.1. Valuation approaches

Respondents were asked to select the valuation approaches that they consider when valuing a going concern. They were given the opportunity to select more than one approach and based on the responses it is evident that most respondents frequently use more than one valuation approach. As part of the written responses, respondents confirm that secondary valuations are performed as a cross check to the primary valuation performed. The use of multiple valuation techniques is explored further in section 4.3 as part of the semi-structured interviews. The survey responses show that the preferred valuation approach used by valuation practitioners is the DCF and Relative/ Market valuation approaches, used by 97% and 93% of respondents respectively as seen in Figure 3 below.

These results are in line with the results of other literature and the PwC methodology survey (Damodaran, 2006, PwC, 2012, PwC, 2017, PwC 2019). It is worth noting that even though the Net Asset Approach is widely written about, it is infrequently used by valuation practitioners in South Africa. This observation is in line with our expectations given the fact that the Net Asset Approach does not capture the going concern value of the company being valued.

Figure 3: Preferred valuation approach



Source: Survey responses

Respondents were also given the opportunity to give written responses regarding the approaches that they applied. From these responses the following common themes were noted:

- Valuation practitioners show a preference to the DCF method but used other valuation approaches to support the results of the DCF.
- The valuation approach applied was driven by the industry, availability of information and the stage of existence that the entity being valued falls within.

A notable comment included within the written responses is that “In emerging markets, market approaches need to be adjusted which increases subjectivity in the valuation.” This comment will be analysed further in section 4.1.3 below when addressing the aspects requiring professional judgment in Relative/ Market valuations.

4.1.2. Professional judgement in Discounted Cashflows (DCF)

The key components of the DCF are:

- forecast cash flows;
- discount rate; and
- terminal value

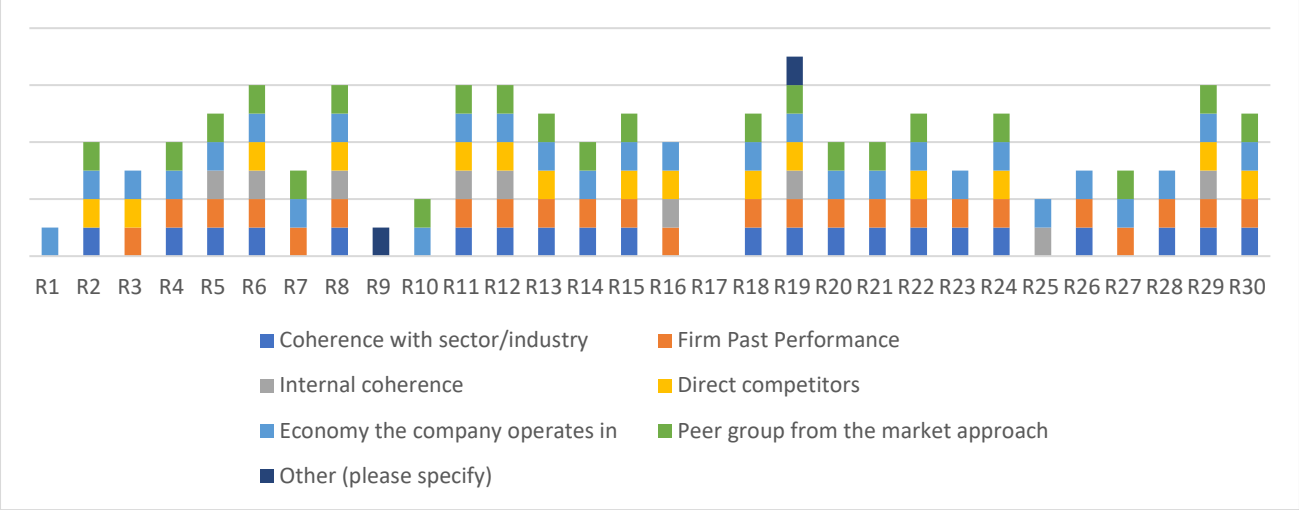
Survey responses were categorised into these components and are discussed below.

4.1.2.1. Forecasted cash flows

According to the survey responses, the reasonability of the forecasts is one of the key aspects reviewed by valuation practitioners before signing off corporate valuations. Based on literature; limited macroeconomic, industry and market data in emerging markets contribute to the difficulties in compiling cash flow forecasts (PwC, 2012). Based on uncertainty associated with future cash flows, a substantial amount of professional judgement is required when compiling these forecasts or relying on the firm's business plan.

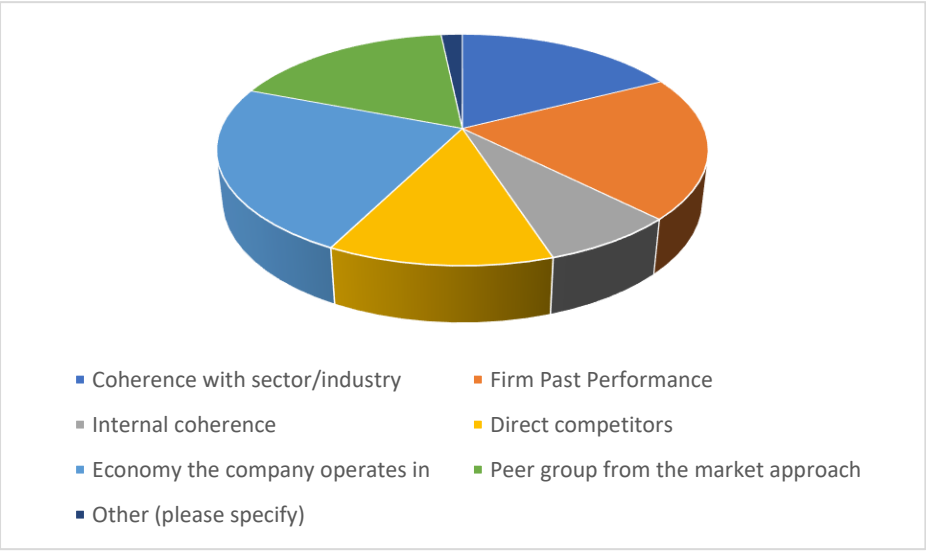
Respondents were asked how they examine the sensitivity and robustness of a firm's business plan. From the responses, it is evident that an extensive analysis is performed on the forecasts provided, with valuation practitioners performing multiple processes to obtain comfort over the reliability of the firm's forecasts. This is illustrated in figure 4a below.

Figure 4a: Examining the firm's forecasts



Source: Survey responses

Figure 4b: Examining the firm's forecasts



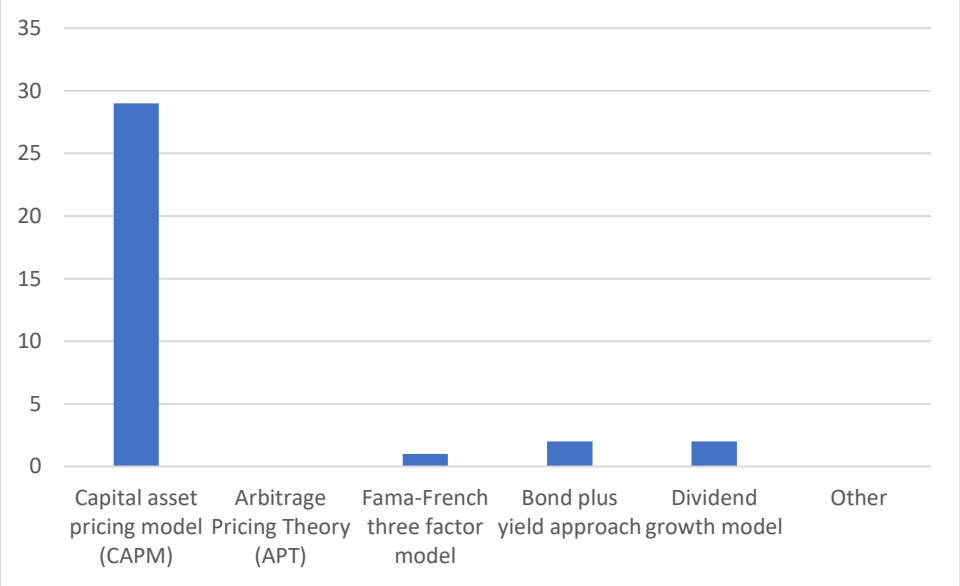
While figure 4a demonstrates that valuation practitioners perform an extensive review of the firm's business plans to examine the sensitivity and robustness, figure 4b illustrates that understanding the economy that the firm operates in, comparing forecasts to the firm's historic performance, coherence with the industry and peer group are the most popular techniques utilised. The dispersion of the responses reinforces the subjectivity applied to obtain comfort over the reliability of the firm's forecasts.

4.1.2.2. Discount rate

Cost of Equity

Survey respondents show a clear preference to using the CAPM model to calculate the cost of equity, which is in line with literature. As seen in figure 5 below, except for 1 respondent, all other respondents make use of the CAPM. Majority of respondents do not even consider a second alternative to calculate the cost of equity.

Figure 5: Method to calculate cost of equity



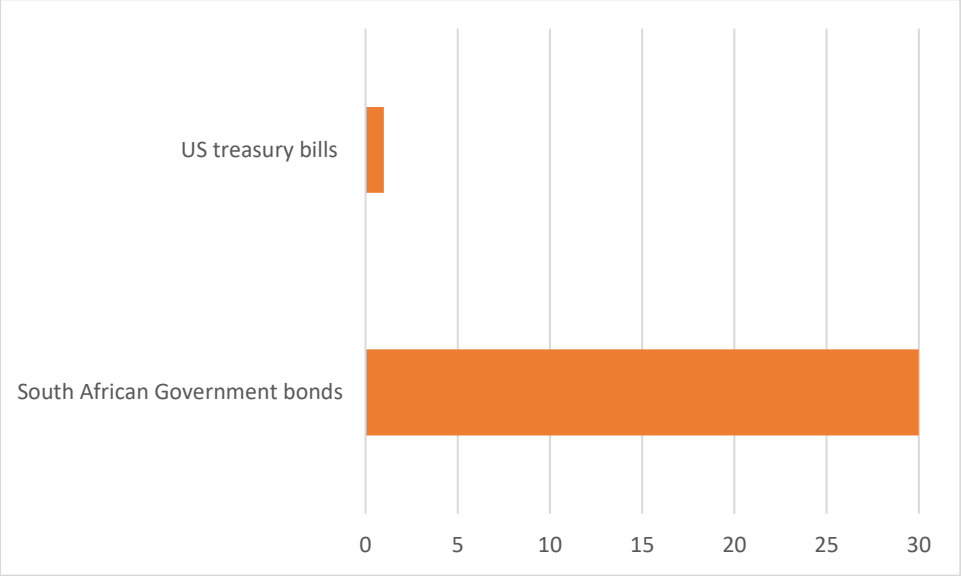
Source: Survey responses

Research has indicated that there is a great subjectivity in estimating the inputs into the CAPM model (Correia and Cramer, 2008), there is no definitive consensus on the application of the cost of equity estimation (Kolouchová, 2009, Bancel and Mittoo, 2014) and many academics have noted that CAPM is flawed (PwC, 2012, Kolouchová, 2009). The responses from the survey participants corroborates the statements made by the respective academics. The researcher, however, concludes that whilst there is consensus that the CAPM has theoretical weaknesses, it remains the most common method of estimating the cost of equity in practice (Jagannathan and Meier, 2002).

The three inputs in the CAPM model are: the risk- free rate, market risk premium and firm beta.

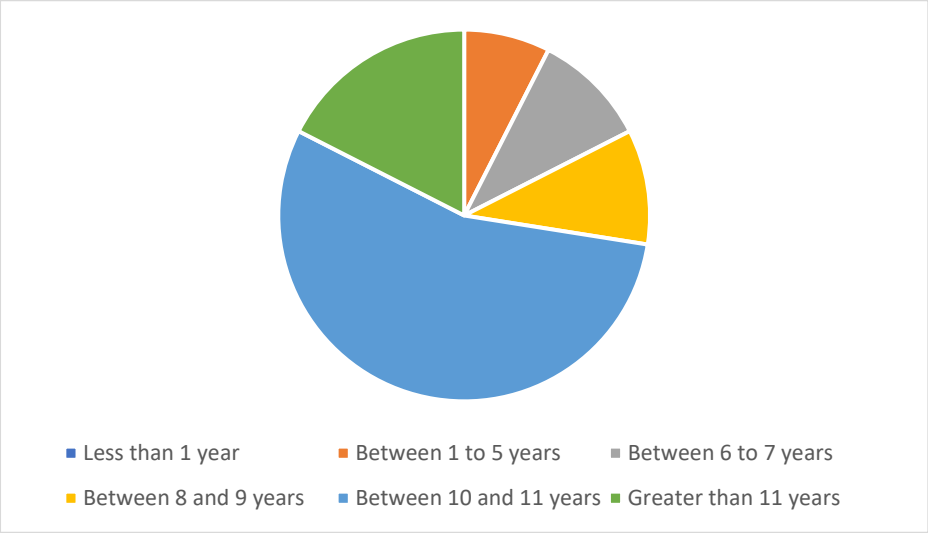
Risk-free rate: In line with the PwC methodology survey (PwC, 2012, PwC, 2017, PwC, 2019), most of the survey respondents consider the South African Government bonds to be the most appropriate proxy for the risk- free rate. However, an element of professional judgment is seen in the maturity of the proxy applied. As seen in Figure 6 and Figure 7 below, all respondents use the South African Government bond as a proxy for the risk-free rate, however, the maturity of these proxy applied by the survey participants varies to some extent. While majority of the respondents consider 10- 11 years to be the appropriate maturity, choosing a maturity which is greater than 11 years is considered appropriate by 7 respondents. Some respondents even consider a maturity of between 6 to 7 years and between 8 to 9 years to be appropriate.

Figure 6: Proxy for the risk-free rate



Source: Survey responses

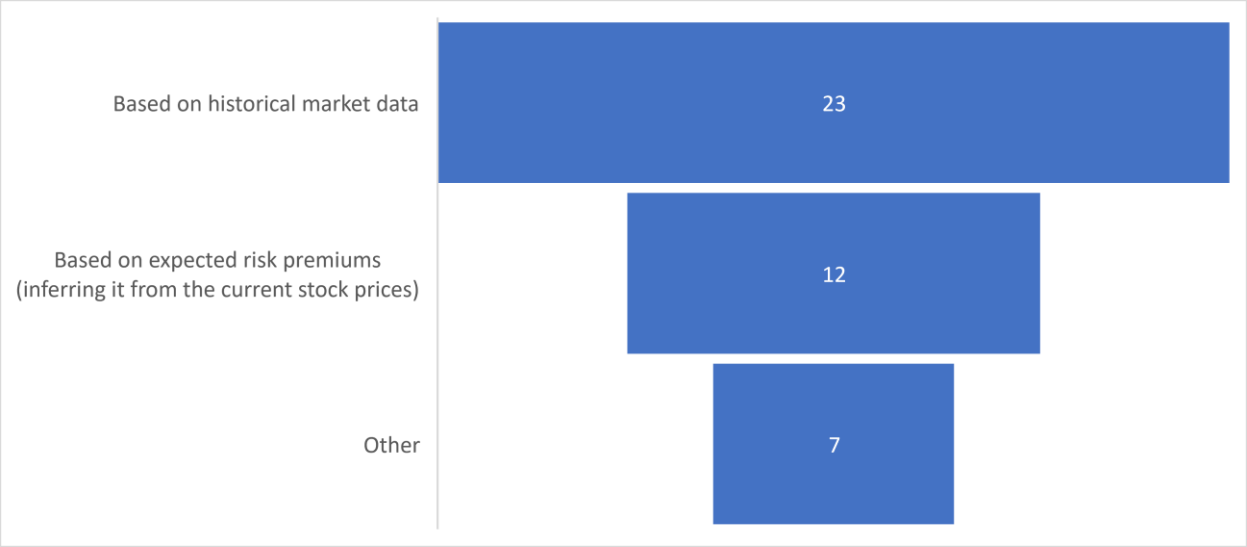
Figure 7: Maturity of risk-free rate proxy



The fact that a few respondents select a maturity between 1 to 5 years, 6 to 7 years, 8 to 9 years and greater than 11 years indicates that there is no definite consensus on the maturity level. This is an indication of the subjectivity associated with this variable.

Market risk premium: According to research, there is very little guidance on the calculation of the equity risk premium (Correia and Cramer, 2008, Bancel and Mittoo, 2014) and this results in a wide range of equity risk premium estimates (Kolouchová, 2009). This appears to be relevant in the south African context as respondents consider different methods to calculate the equity risk premium.

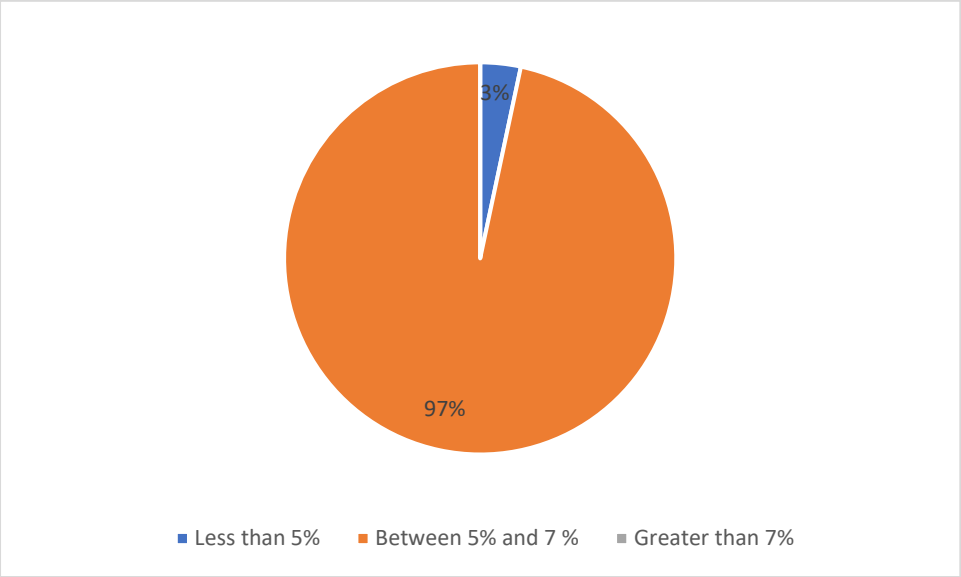
Figure 8: Estimating market risk premium



Source: Survey responses

Some respondents ("Other" in figure 8 above) use third party data sources as an estimate of the equity risk premium. These third-party sources include Damodaran, the PwC methodology survey and Duff and Phelps (now rebranded as Kroll, a multinational financial consultancy firm that provides estimates of the equity risk premium that can be considered in different countries). However, even though the method of estimating the equity risk premium varies widely, almost all participants, end up with an equity risk premium of between 5% and 7% as seen in figure 9 below. From this the researcher can ascertain that while there is subjectivity and professional judgement associated with the market risk premium estimate, ultimately majority of professionals agree on the market risk premium that is applicable within a South African context eliminating the implications of subjectivity to some extent.

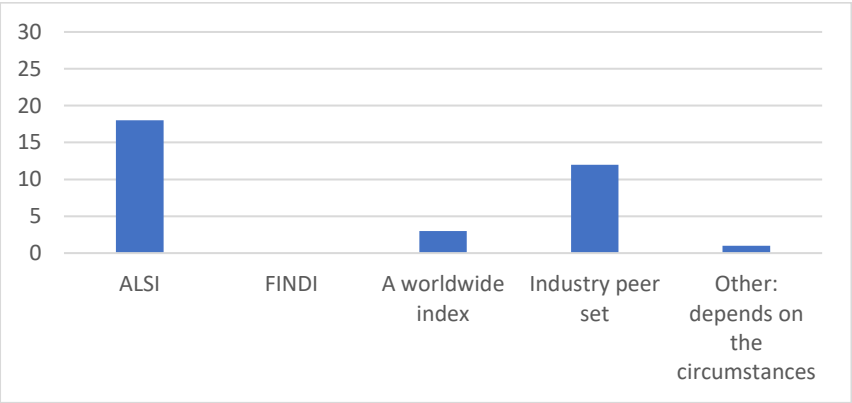
Figure 9: Estimated market risk premium



Source: Survey responses

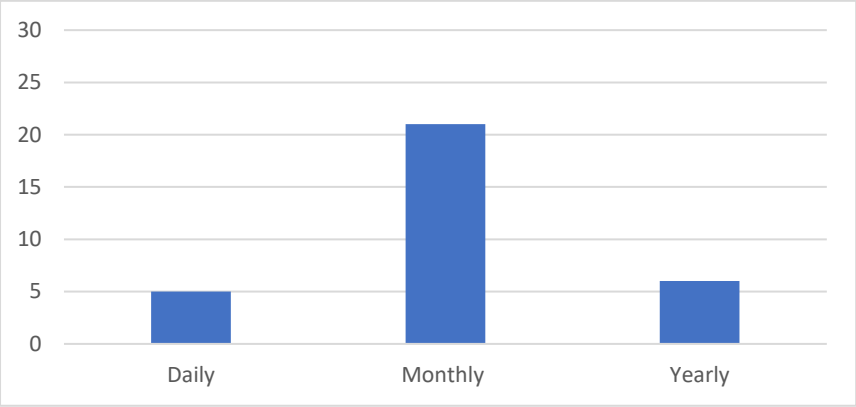
Beta: Based on the responses from survey participants, it appears that a considerable amount of professional judgement is applied in the beta calculation. The market index used to calculate beta (figure 10), frequency of returns (figure 11) and period of historic data considered (figure 12) are some the specific areas our survey questions focused on. The variations in responses to these questions speaks to the research and emphasises the fact that there is a lack of guidance on how to calculate beta (Bancel and Mittoo, 2014). Figures 10, 11 and 12 are a summary of these results.

Figure 10: Estimating market portfolio for a beta calculation



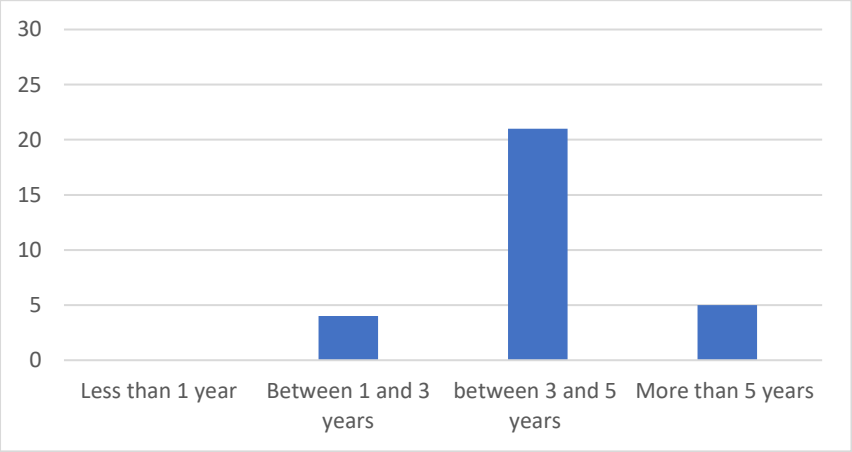
Source: Survey responses

Figure 11: Frequency of returns when calculating beta



Source: Survey responses

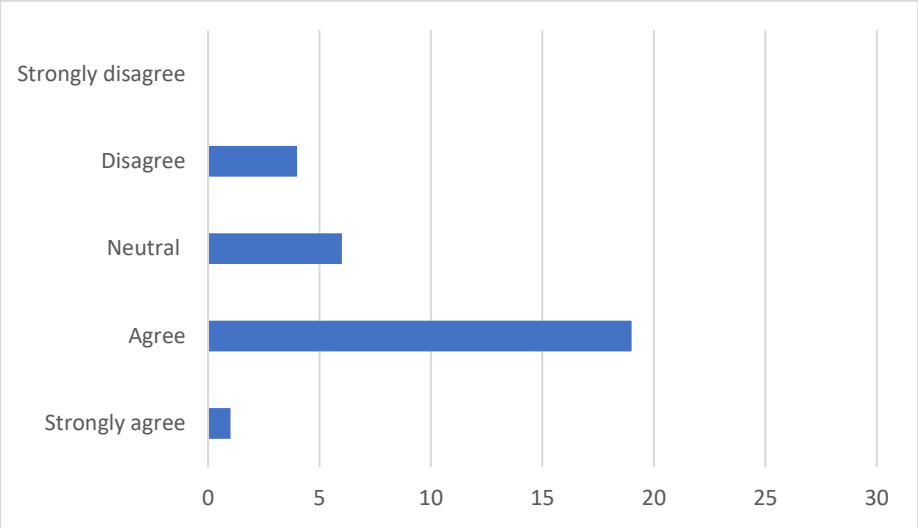
Figure 12: Years of historic data when calculating beta



Source: Survey responses

Earlier in this discussion, the researcher noted that survey respondents showed an overwhelming preference to using the CAPM model to calculate the cost of equity. We also know that beta is one of the key inputs in the CAPM formula. Yet, when survey respondents were asked if they agree with the statement that beta is a good measure of risk, 33% of respondents disagreed or were neutral regarding this statement as seen in figure 13 below. A statement made by respondent 3 is that “There really isn’t a better measure that is used and understood in the market”. This further emphasises the fact that that there is a lack of guidance on the calculation and application of beta.

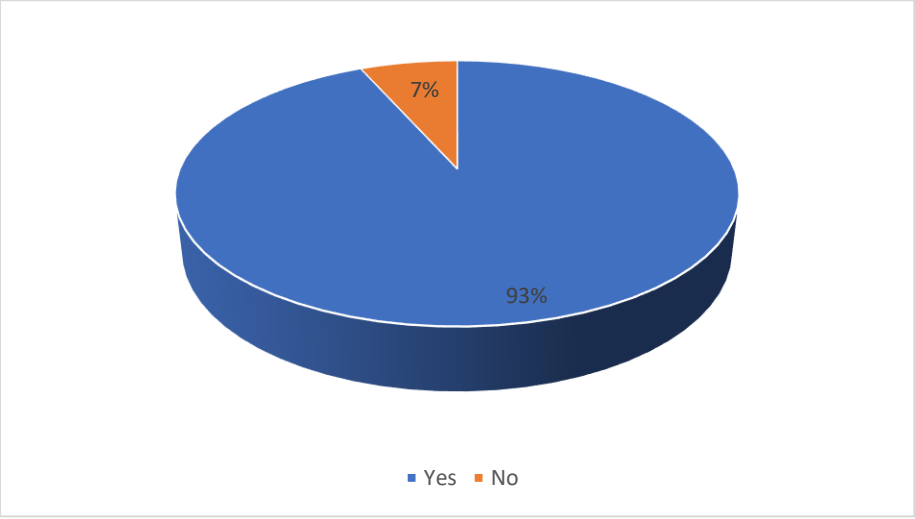
Figure 13: Is beta a good risk measure



Source: Survey responses

Adjustments: A key flaw in the CAPM model is that only considers systematic risk but does not take specific project risk into account (PwC, 2017, Kolouchová, 2009, Bancel and Mittoo, 2014). As seen in figure 14 below, majority of the respondents process an adjustment to the CAPM to address this specific project risk. It is however interesting to note that some respondents do not consider processing adjustments to CAPM. While this is clearly a minority of the respondents, the impact of not adjusting CAPM can have a material impact on the valuation performed.

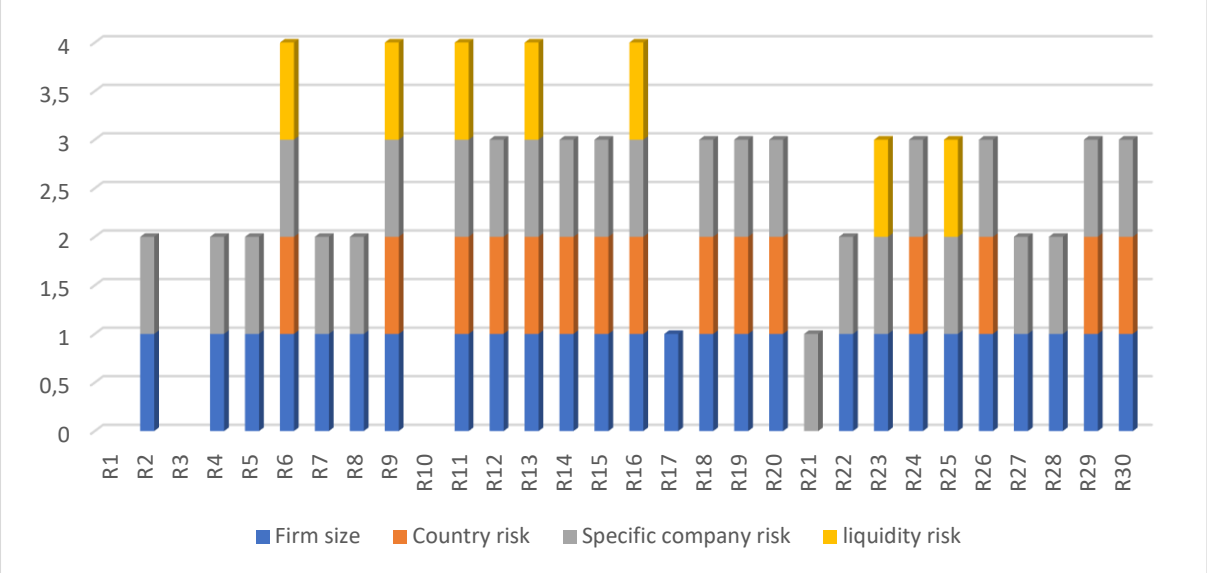
Figure 14: Adjustments considered to CAPM



Source: Survey responses

The project specific risks relate to firm size, country risk, specific company risk and liquidity risk as illustrated in figure 15a and figure 15b.

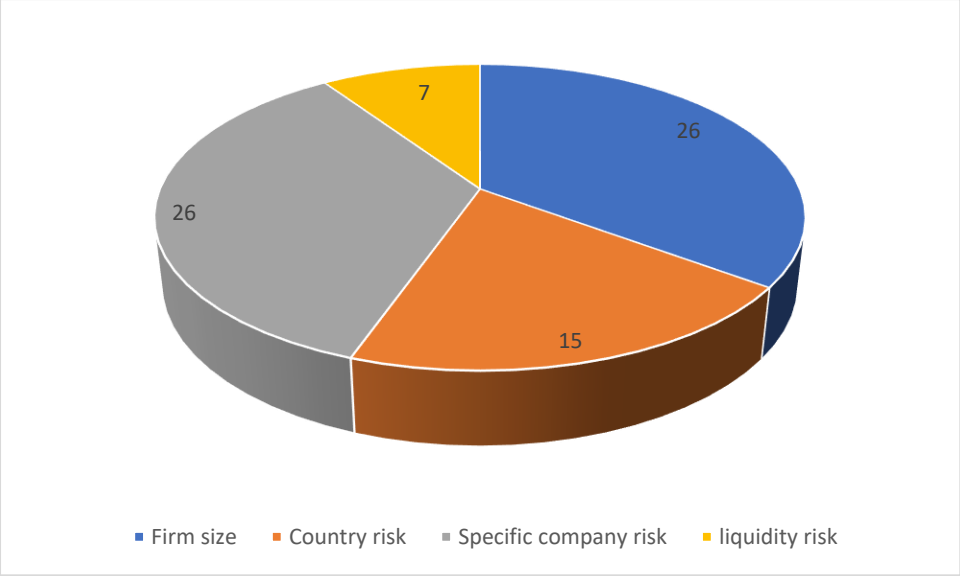
Figure 15a: Adjustments processed to CAPM



Source: Survey responses

However, there is no guidance on the size of the adjustment that should be processed, and a significant amount of professional judgement is utilised in determining the appropriate adjustment. From figure 15a above we can see that respondents process a wide range of adjustments, some adjustments being more popular amongst respondents than other. A discussed in figure 14 above, a minority of the respondents do not consider any adjustment necessary.

Figure 15b: Adjustments processed to CAPM



Source: Survey responses

From figure 15b we can see that firm size and specific company risk are the more popular adjustments considered. However, some respondents process adjustments relating to country and liquidity risk,

Respondents consider a firm size adjustment with a minimum of 0% to a maximum of 20% as seen in table 1 below. Some respondents did not provide the range of adjustments considered as this is company specific and is assessed on a case by case basis.

Table 1: Adjustments processed to CAPM

Firm size adjustment processed	**Minimum**	**Maximum**
Respondent 4	1%	5%
Respondent 5	0%	6%
Respondent 6	0%	3%
Respondent 7	0%	5%
Respondent 8	3%	3%
Respondent 11	5%	20%
Respondent 12	5%	7%
Respondent 13	0%	0.5%
Respondent 14	3%	3%
Respondent 15	1%	4%
Respondent 16	1%	1%
Respondent 17	0%	20%
Respondent 18	0%	5%
Respondent 19	0%	7%
Respondent 20	1%	5%
Respondent 22	0%	5%
Respondent 24	0%	5%
Respondent 25	0%	20%
Respondent 26	1%	5%
Respondent 27	0%	15%
Respondent 28	1%	5%
Respondent 29	2%	8%
Respondent 29	0%	5%
Average	**1%**	**7%**
Median	**0%**	**5%**
Standard deviation	**2%**	**6%**
Min	**0%**	
Max		**20%**

Source: Survey responses

Respondents consider a country adjustment with a minimum of 0% to a maximum of 15% as seen in table 2 below. As seen with the firm adjustments, some of the respondents did not provide a range of the country risk adjustment because the adjustment applied is country and circumstance dependent.

Table 2: Country risk adjustments processed

Country Risk adjustment processed	Minimum	Maximum
Respondent 6	0%	5%
Respondent 11	5%	10%
Respondent 13	0%	0,50%
Respondent 15	1%	1%
Respondent 18	0%	4%
Respondent 19	1%	3%
Respondent 24	0%	5%
Respondent 26	0%	15%
Respondent 27	0%	5%
Respondent 29	1%	5%
Respondent 30	1%	16%
Average	**1%**	**6%**
Median	**0%**	**5%**
Standard deviation	**1%**	**5%**
Min	**0%**	
Max		**15%**

Source: Survey responses

Respondents consider a specific company risk adjustment range of 0% to 30% as seen in table 3 below. Once again, not all respondents provided a response to this question because the adjustment is firm specific and company specific information is considered before these adjustments are processed.

Table 3: Specific company adjustments processed

Specific company adjustment processed	Minimum	Maximum
Respondent 2	0%	5%
Respondent 4	1%	5%
Respondent 5	1%	10%
Respondent 6	0%	3%
Respondent 7	0%	2%
Respondent 8	1%	5%
Respondent 11	5%	30%
Respondent 12	3%	6%
Respondent 13	0%	0,50%
Respondent 14	3%	3%
Respondent 15	1%	4%
Respondent 16	1%	1%
Respondent 18	0%	5%
Respondent 19	0%	5%
Respondent 20	1%	3%
Respondent 22	0%	5%
Respondent 24	0%	5%
Respondent 25	10%	30%
Respondent 26	1%	5%
Respondent 27	1%	7%
Respondent 28	1%	5%

Respondent 29	1%	5%
Respondent 30	1%	5%
Average	**1%**	**7%**
Median	**1%**	**5%**
Standard deviation	**2%**	**8%**
Min	**0%**	
Max		**30%**

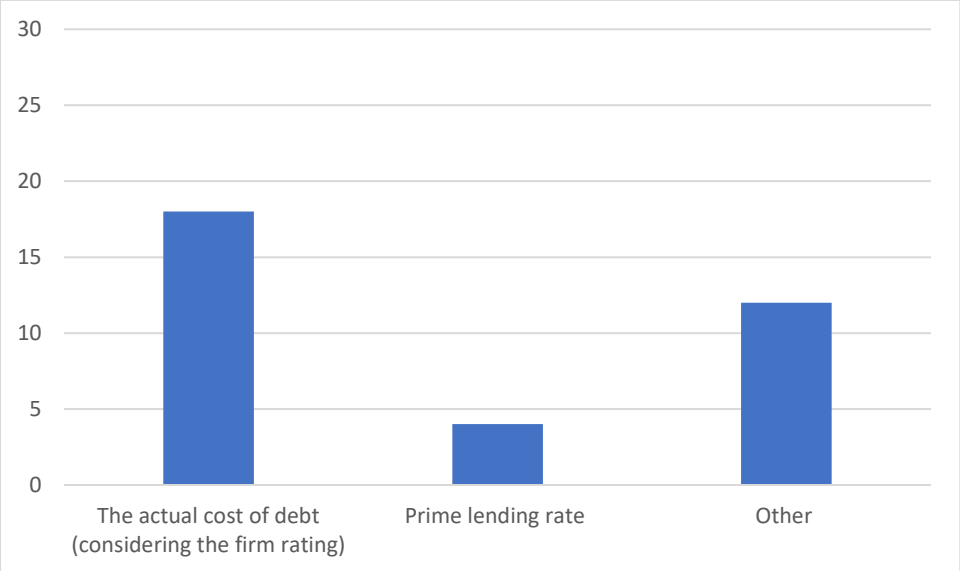
Source: Survey responses

Cost of Debt

In calculating the cost of debt, the two areas of potential subjectivity is the debt term and the cost of debt included in the cost of capital calculation (Bancel and Mittoo, 2014).

Survey respondents were asked how they define the cost of debt. As seen in figure 16 below, many respondents consider the company's actual cost of debt in the discount rate. However, 12 respondents have elected the "other" option indicating that there is no definitive approach applied when estimating the cost of debt.

Figure 16: Defining the cost of debt

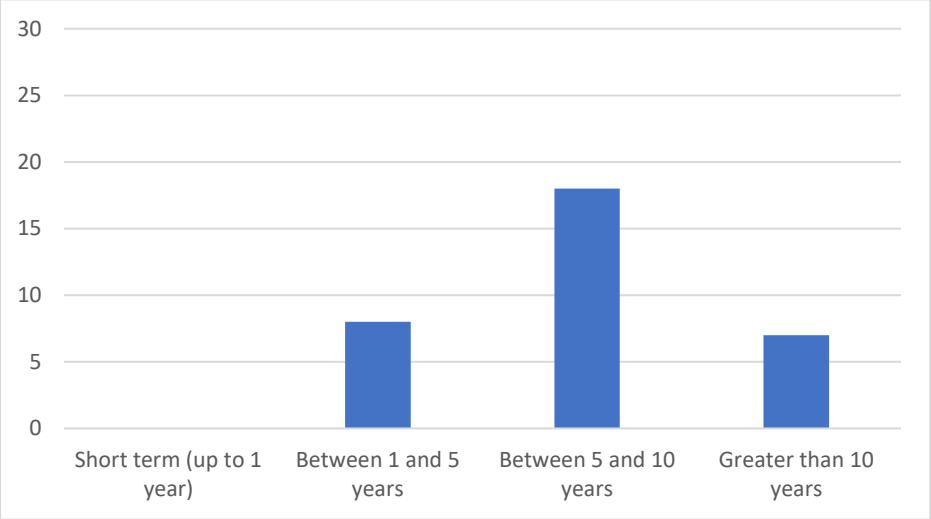


Source: Survey responses

These "other" methods include adjusting the company's cost of debt for market factors, performing cross checks with the cost of debt of peers, considering future borrowing rates that may potentially apply to the company in future, adding a premium to the risk-free rate and considering long term swap rates. The broad range of responses is an indication that guidance on this input is limited, and professionals apply their professional judgement when determining the appropriate cost of debt.

The debt maturity is another area where responses from the survey participants varies. As seen in figure 17 below while majority of the respondents consider only long-term debt in their cost of debt estimations, 8 respondents (27% of respondents) include an element of short-term debt in their estimations. This links in with literature which suggests that not all corporates have the privilege of having access to long term finance from banks. The implication of this is that the long-term debt needs to be estimated assuming that there is a potential to raise this long-term debt. There are also not many actively traded corporate bonds locally. This ultimately results in some valuation practitioners using the short-term debt in their cost of debt calculation (Thayser, 2015).

Figure 17: Debt maturity

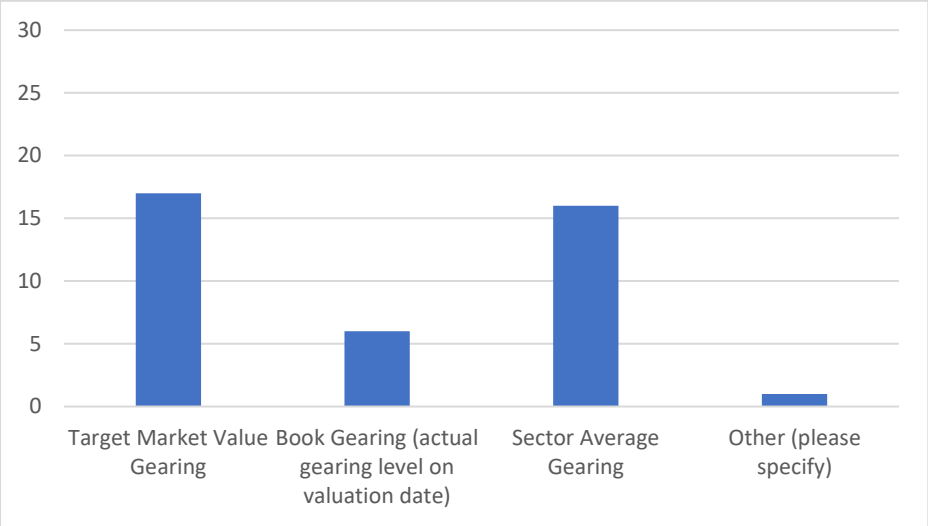


Source: Survey responses

Capital structure

Research has indicated that even though theory recommends the use of target capital structure many valuation practitioners use the actual capital structure. It is also noted in the survey responses that a large group of practitioners even consider the sector average gearing in their calculations. Determining a target capital structure has its limitations. Target capital structures often bear very little resemblance to reality and the long-term debt that a company has access to. Valuation practitioners therefore consider the sector average gearing as a benchmark when estimating the target capital structure.

Figure 18: Defining capital structure



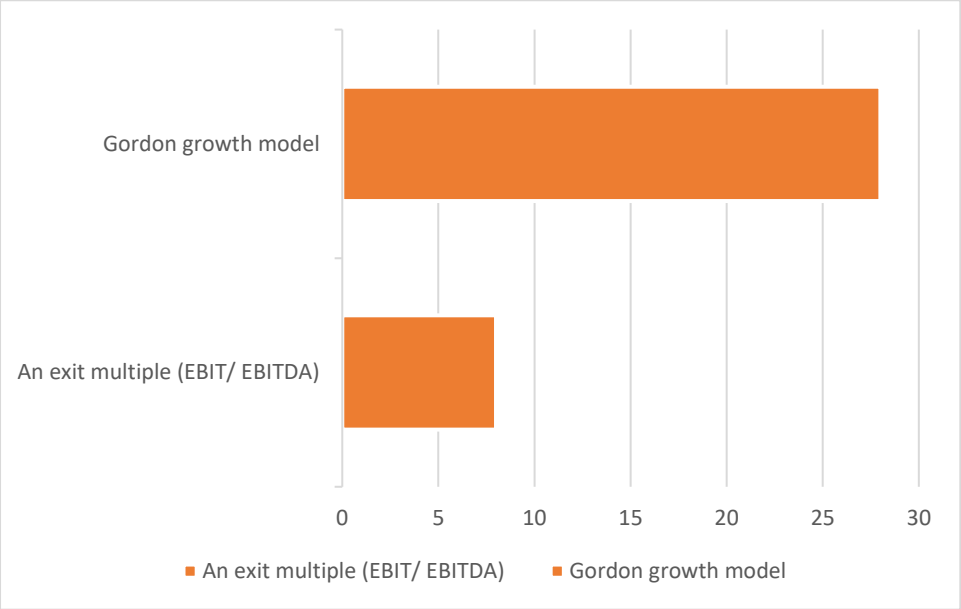
Source: Survey responses

4.1.2.3. Terminal value

The calculation of the terminal value of a corporate valuation is important because it usually contributes a significant portion of the final value (Bancel and Mittoo, 2014).

Practitioners show an overwhelming preference to using the Gordon Growth model to calculate the terminal value as seen in figure 19 below.

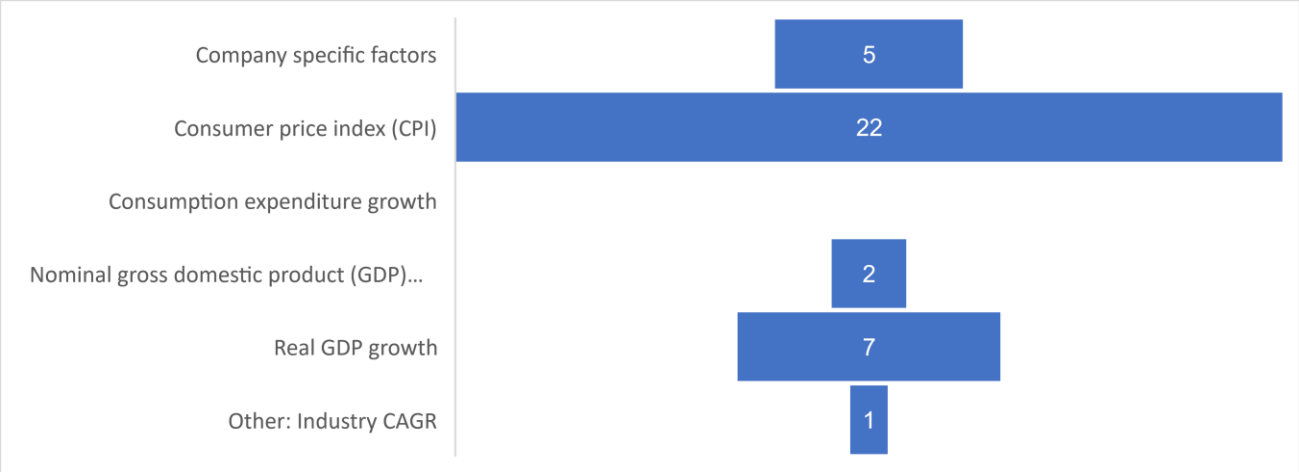
Figure 19: Terminal value calculation



Source: Survey responses

An element of professional judgement can be linked to the growth rate practitioners apply within the Gordon growth model. When asked what valuation practitioners consider to be a proxy for long term growth within the Gordon Growth model, there is a slight discrepancy on the proxy applied. As seen in figure 20 below, approximately 73% of respondents apply the Consumer Price Index (CPI) as a proxy. Respondents also consider company specific factors, nominal GDP growth, real GDP growth and industry CAGR to be an appropriate proxy. The terminal growth is sensitive to any long term growth changes (Bancel and Mittoo, 2014) and the fact that there is no definite consensus on the proxy applied implies that significant differences in corporate valuations may be noted. The growth rate has a significant impact on the final valuation outcome with a higher growth rate resulting in a higher value (Mills, 2005).

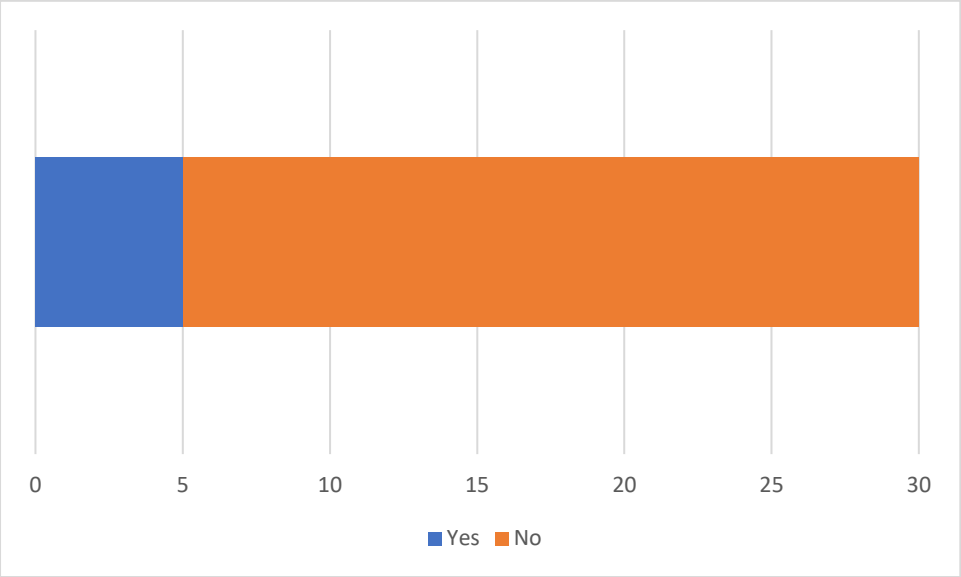
Figure 20: Long term growth proxy



Source: Survey responses

Because the terminal value contributes significantly to the final valuation, survey respondents were asked if they limit the terminal value as a percentage of the final enterprise value. As seen in Figure 21, 17% of respondents apply a limit. The limit applied varies between 40%- 70% depending on circumstances and the sector that the firm being valued operates in.

Figure 21: Limitation on terminal value

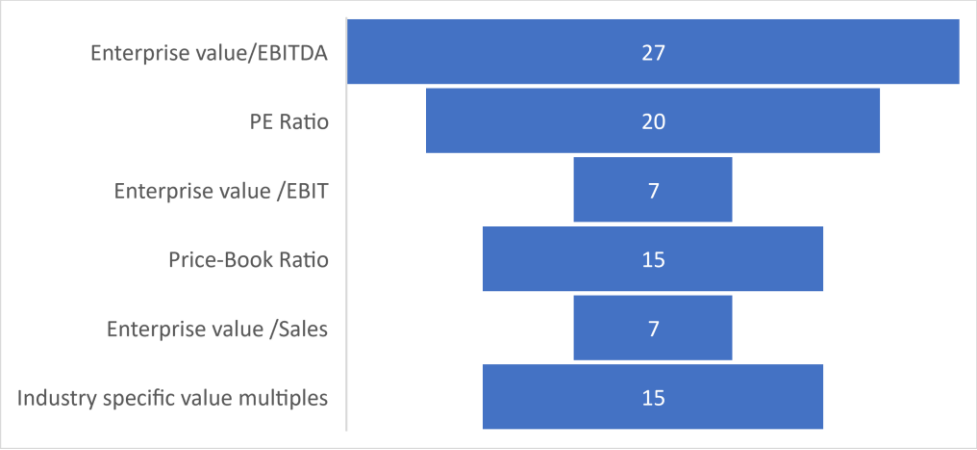


Source: Survey responses

4.1.3. Professional judgement in relative valuations/ market valuations

Most respondents consider the market/ relative approach as a secondary valuation which is compared to the outcome obtained from the DCF approach. The EV/EBITDA and PE ratios are most commonly used, as seen in figure 22 below. However, respondents have noted that the industry of the company places an important role in the choice of multiple applied. This is specifically true in specialised sectors like mining and financial sectors.

Figure 22: Multiples used in market/ relative valuations



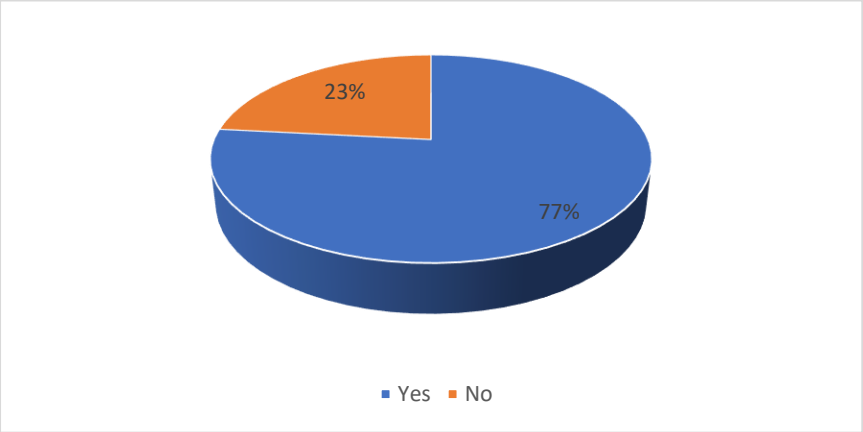
Source: Survey responses

Based on the responses received, it appears that common practice is to apply adjustments to the observed multiples as seen in figure 23 below. However, due to the limited guidance regarding these adjustments, valuation practitioners are required to apply their professional judgement. The

researcher is able to establish this by the responses received regarding the type of adjustments processed. As seen in figure 24a below, respondents consider and apply different adjustments.

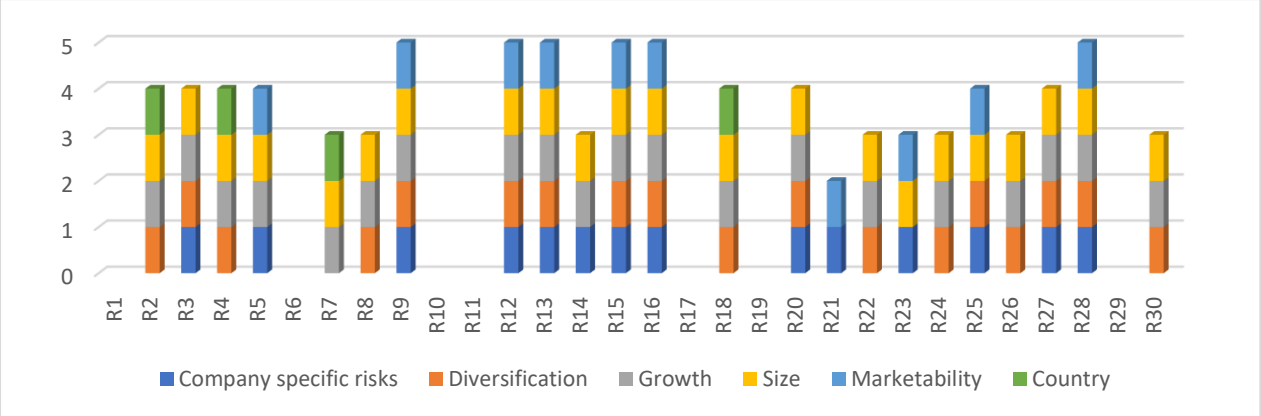
In figure 24b we see that the most common adjustments relate to company specific risks, diversification, growth, size and marketability. While certain adjustments are more common than others, there is still no unanimity on the adjustments processed. This is an indication that these adjustments include an element of professional judgement. The researcher investigates this further as part of the semi-structured interview process.

Figure 23: Adjustments considered to observed multiples



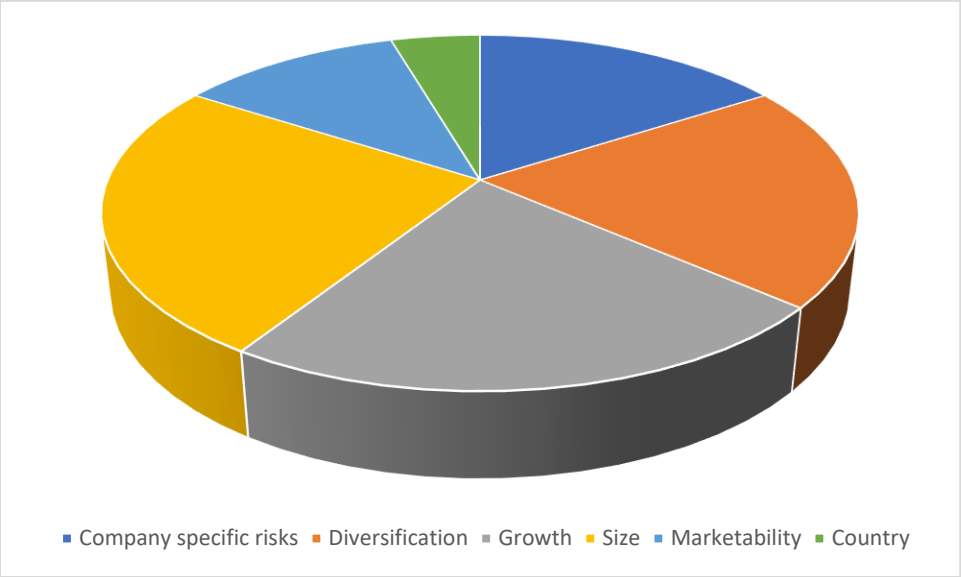
Source: Survey responses

Figure 24a: Adjustments processed to observed multiples



Source: Survey responses

Figure 24b: Adjustments processed to observed multiples



Source: Survey responses

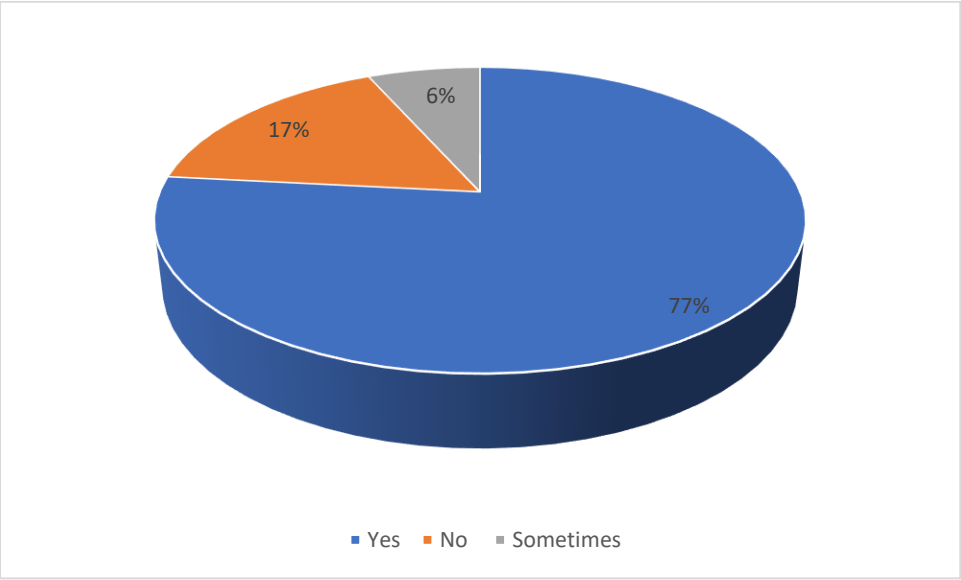
4.1.4. Discounts & premiums

Discounts and premiums are an area in corporate valuations with very limited guidance from a theoretical perspective. Therefore, there is a substantial amount of subjectivity applied to these areas.

Minority discount

As seen in figure 25 below, 77% of practitioners agree that as minority discount is applicable when valuing a minority interest using the DCF approach.

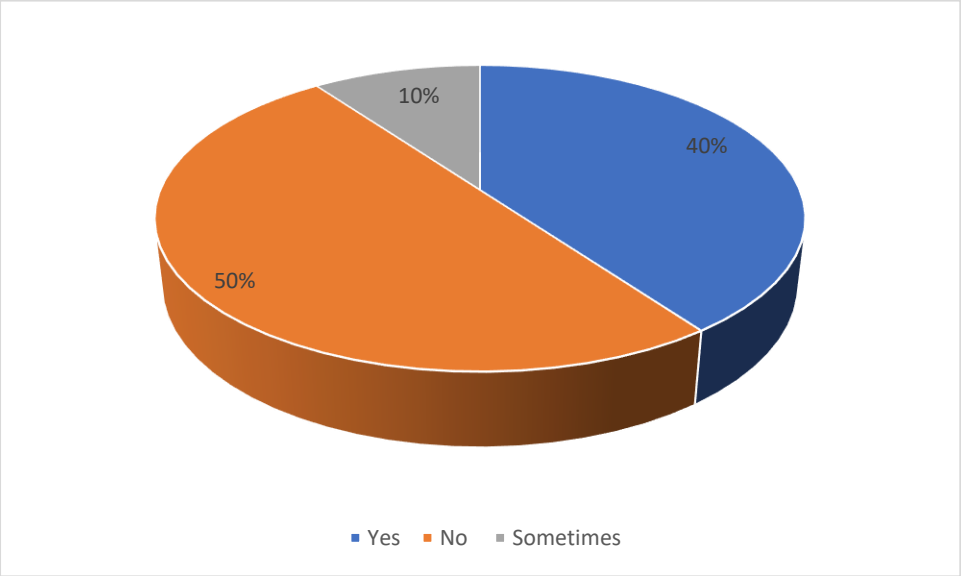
Figure 25: Application of minority discount in DCF valuations



Source: Survey responses

However, the results of applying a minority discount when valuing a minority interest using the market/ relative valuation approach is inconclusive. 50% of respondents consider this adjustment either sometimes or always while the remaining 50% consider the adjustment irrelevant. From these responses it is clear that the limited guidance regarding these discounts can cause a major impact on the application by professionals.

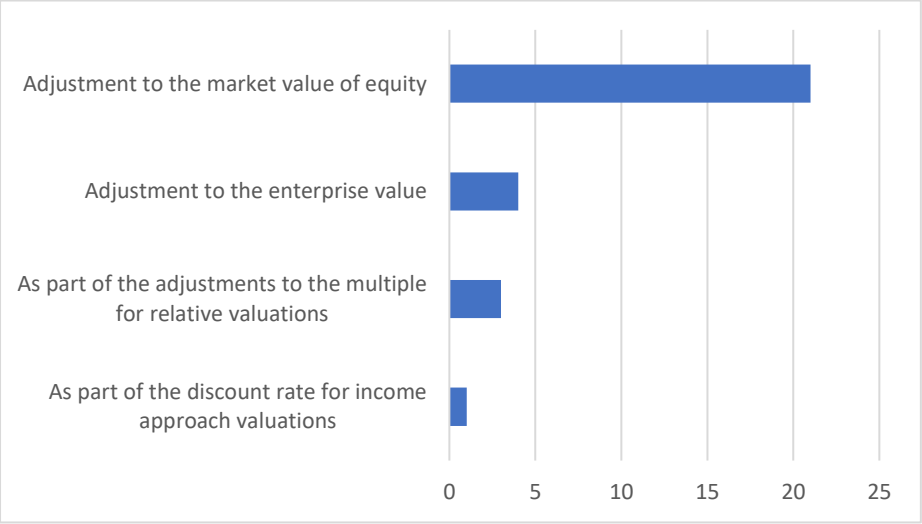
Figure 26: Application of minority discount in relative/ market valuations



Source: Survey responses

Majority of the respondents apply this discount to the market value of equity. This shows that while there is inconsistency regarding the use of this discount in the instance of market/ relative valuations, most practitioners apply this discount in a consistent manner within the corporate valuation.

Figure 27: Where is the minority discount applied

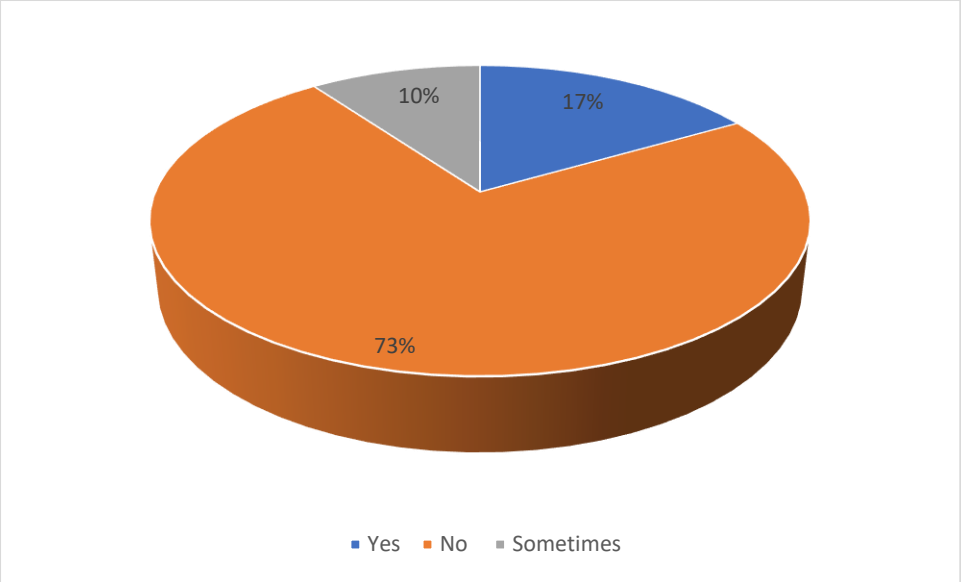


Source: Survey responses

Control premium

As seen in figure 28 below, 73% of practitioners agree that a control premium is not applicable when valuing a controlling interest using the DCF approach.

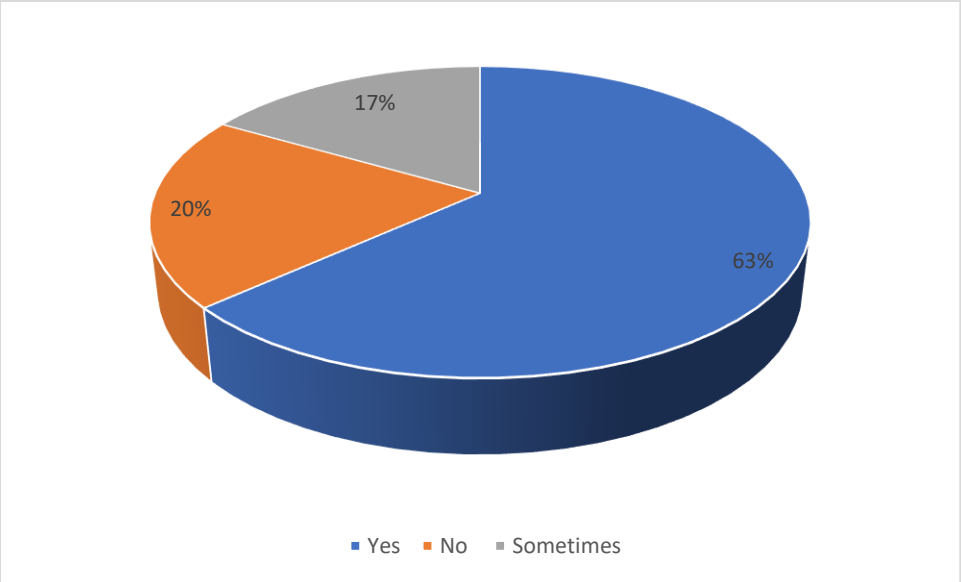
Figure 28: Application of control premium in DCF valuations



Source: Survey responses

The results of applying a control premium when valuing a controlling interest using the market/ relative valuation approach is also more conclusive with 63% of respondents considering this adjustment in their corporate valuations.

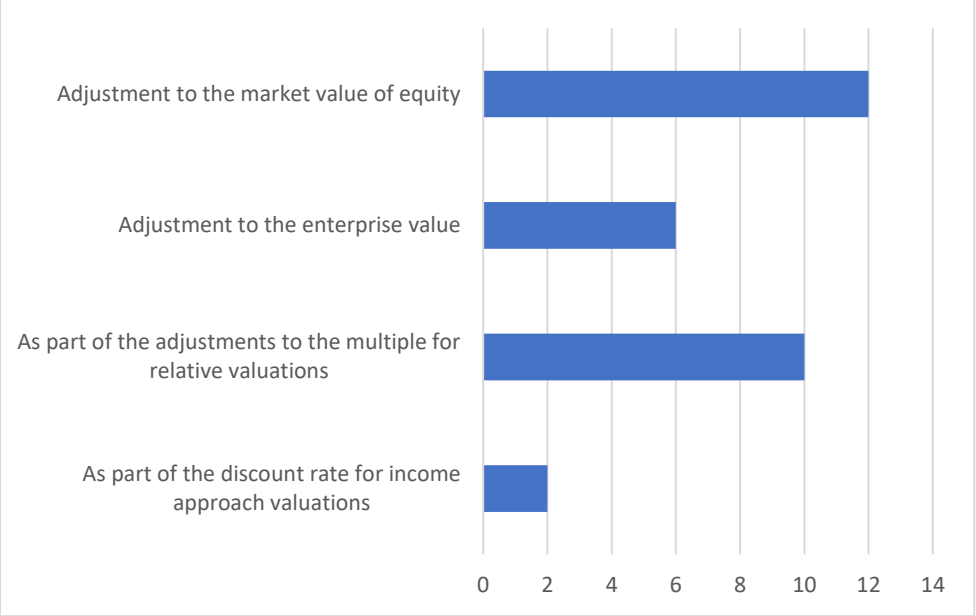
Figure 29: Application of controlling premium in relative/ market valuations



Source: Survey responses

The application of this premium is, however, not consistent between respondents. Majority of the respondents apply this premium to the market value of equity or adjust the observed multiple. This demonstrates that the application of this adjustment is not consistent among practitioners reiterating the fact that there is limited guidance regarding the application of these adjustments.

Figure 30: Where is the control premium applied

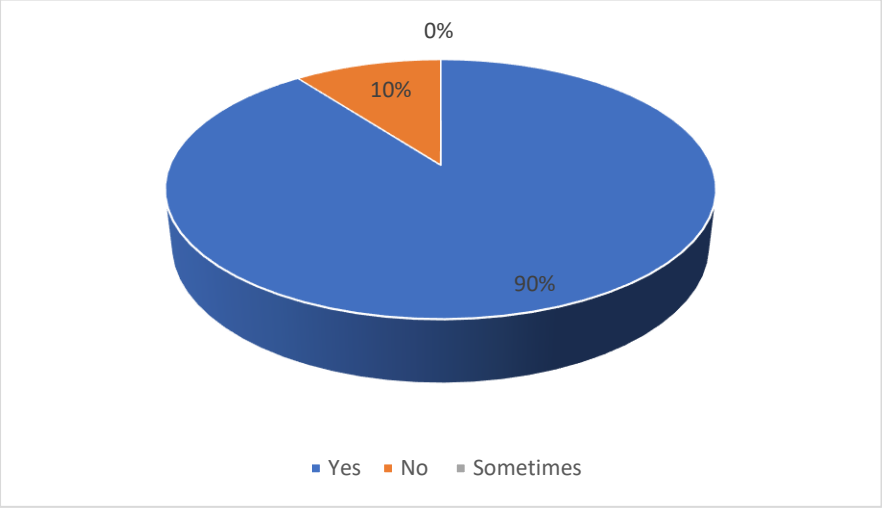


Source: Survey responses

Marketability discount

As seen in figure 31 below, 87% of practitioners agree that a marketability discount is applicable when valuing an unlisted firm using the DCF approach.

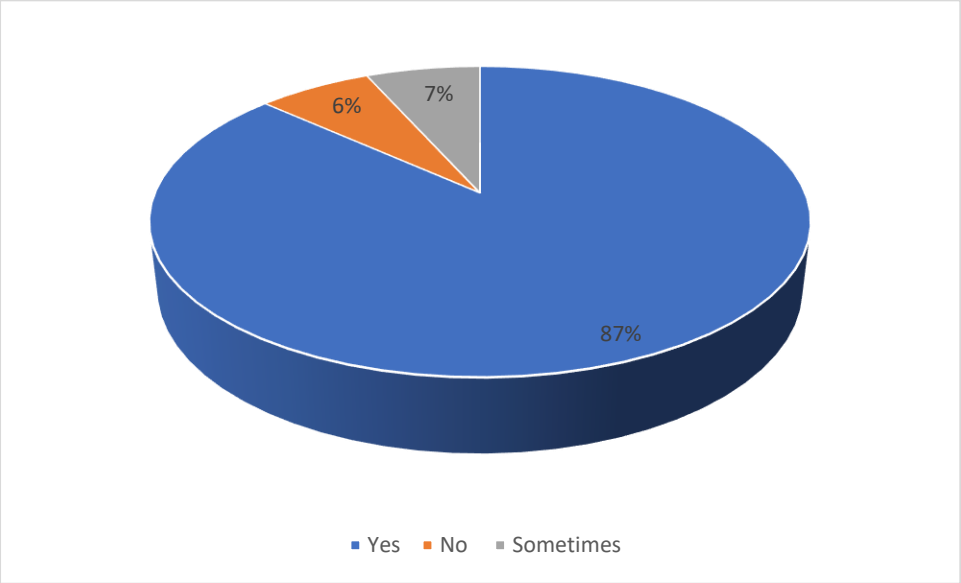
Figure 31: Application of marketability discount in DCF valuations



Source: Survey responses

The results of applying a marketability discount when valuing a unlisted firm using the market/ relative valuation approach is also more conclusive with 87% of respondents considering this adjustment in their corporate valuations.

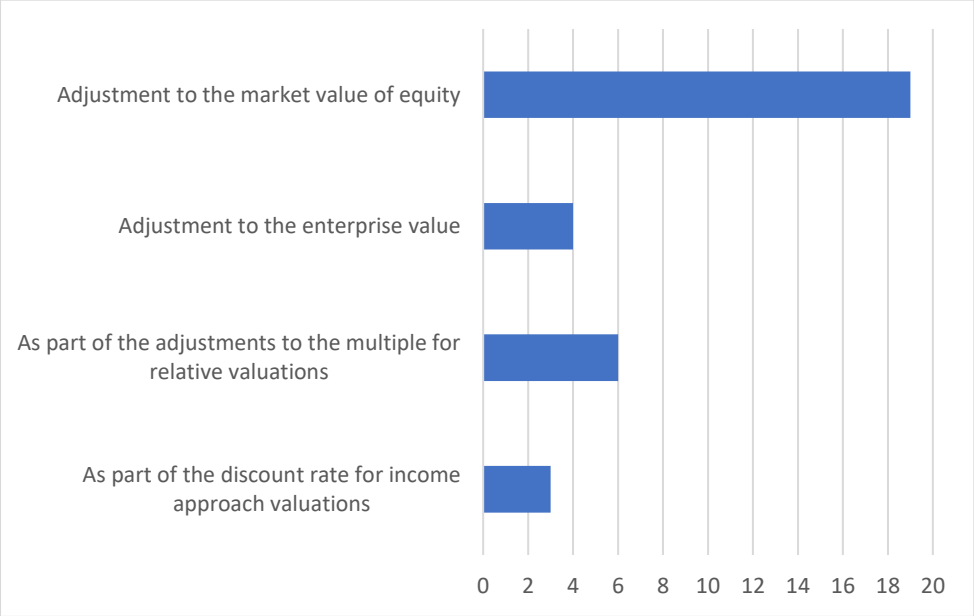
Figure 32: Application of marketability discount in relative/ market valuations



Source: Survey responses

Majority of the respondents apply this discount to the market value of equity. This shows that there is consistency regarding the application and use of this discount within the corporate valuation.

Figure 33: Where is the minority discount applied



Source: Survey responses

4.2. Summary of Phase 1 results: Surveys

The survey responses were used to answer research question 1:

What are the aspects of corporate valuation that require the judgment of valuation professionals in South African corporates?

To answer this question, the researcher considered all the responses from the survey participants to the different questions together. Where there was no consensus in the responses received, this was noted as an aspect where professional judgement is required by valuation practitioners. To understand why this professional judgement was necessary, these aspects were discussed with participants as part of the semi-structured interviews. For certain aspects, even though there is consensus in the survey responses, comments made by the survey participants required the researcher to delve further into these aspects to clarify whether an element of professional judgement is applicable.

Based on the results, it is evident that valuation professionals in South Africa are required to incorporate an element of professional judgment in certain aspects within the corporate valuations that they perform. The specific aspects where professional judgement is noted is as follows:

- Valuation models:
  There is consensus amongst the valuation practitioners that the DCF and market/relative valuation are the techniques which are most used in South Africa. It is interesting to note that valuation practitioners use more than one valuation technique when performing corporate valuations, to cross check their final outcome. While this is not a direct link to professional judgement, it suggests that valuation practitioners perform a primary and secondary corporate valuation to substantiate their outcomes, alluding to an element of professional judgement.

- Forecasted cash flows
  From the responses obtained, it is evident that valuation practitioners apply multiple techniques to examine the sensitivity and robustness of a firm's business plan emphasising the subjectivity included within these forecasts and the professional judgement needed when incorporating these forecasts within the DCF model.

- Discount rate
  Cost of equity: Valuation practitioners concur that the CAPM model, even though it includes theoretical weaknesses, is the most common method of estimating the cost of equity. The weaknesses in the model specifically link to the model inputs where there is little consensus

regarding the approaches to determine the model inputs. This is where the element of professional judgement is evident.

In addition to this, valuation practitioners process adjustments to the calculated cost of equity. There are multiple adjustments which are considered by valuation practitioners and the adjustment range is wide. The valuation practitioners therefore applies professional judgement when determining which adjustments to apply and the magnitude of the adjustment processed.

Cost of debt: While theory stipulates that the long-term cost of debt must be included in the discount rate calculation, survey responses indicate that this is not always the case from a practical perspective with some valuation practitioners including short-term debt within the calculation. While the responses do not directly link to professional judgment, the fact that respondents are contradicting theory suggests that professional judgment impacts their calculation.

Capital structure: As is the case with cost of debt, practitioners apply a capital structure which contradicts theory. Theory recommends the use of target capital structure, but many valuation practitioners use the actual capital structure. And a large group of practitioners even consider the sector average gearing in their calculations. The lack in response consensus and contradiction to theory allude to professional judgement impacting this aspect within corporate valuations.

- Terminal value

  From the responses obtained, it is evident that professional judgement is needed determining the terminal growth rate. It is interesting to note that some valuations practitioners limit the terminal value as a percentage of the final enterprise value. This emphasises the professional judgement included in the terminal value calculation.

- Adjustments to multiples

  Processing adjustments to multiples for a market/ relative valuation is another aspect where professional judgement is noted. While certain adjustments are more common than others, there is still no unanimity on the adjustments processed. This is an indication that these adjustments include an element of professional judgement.

- Discounts and premiums

  Minority discounts, marketability discounts and control premiums all include an element of professional judgement. While the survey focuses on whether practitioners apply these adjustments appropriately there is no focus on the magnitude of the adjustment. This will be addressed in further detail in the semi-structured interviews.

Having considered all the aspects that require professional judgement, the researcher was able to categorise the types of professional judgement applied into themes and subthemes. There are three main categories of professional judgement applicable in corporate valuations. Professional judgement is needed when determining which valuation models to apply and this represents the first theme. Professional judgement is also needed in certain aspects when calculating or applying certain inputs within the theoretical models representing theme two. The final theme relates to the adjustments that are processed to the valuation models. All the aspects which require professional judgment can be allocated to the three major themes. The aspects have been categorised as sub-themes. The three major themes and relevant subthemes are summarised in table 4 below.

Table 2: Themes & subthemes from the quantitative data

Theme One	**Subthemes**
Professional judgement applied in the selection and application of corporate valuation models	Corporate valuation model utilization in practice
Theme Two	**Subthemes**
Professional judgement applied in the inputs within the DCF models	Forecasted cash flows
	CAPM inputs
	Terminal growth rate
Theme Three	**Subthemes**
Professional judgement applied in adjustments to the models	Adjustments to peer multiples
	Discount rate adjustments
	Marketability/ Minority discounts & control premiums

Source: Survey responses

Based on these themes, open ended questions were formulated for the qualitative phase of the research. The results of these semi-structured interviews are discussed in the sections that follow.

4.3. Results of Phase 2: Semi-structured interviews

The interview responses were analysed within the themes and subthemes identified above and are discussed in the sections below.

4.3.1. Theme One: Professional judgement applied in the selection and application of corporate valuation models

Interview participants were all in agreement that having a standard valuation model structure in place is beneficial and creates consistency in the approach to performing corporate valuations.

Interview Participant 2 explained that in his experience "There is definite benefits to having a structured model and approach to a valuation because it helps you to organise your thoughts in terms of what are the aspects that you need to look at. It also helps you eliminate errors by having a structure. In my experience, if I work through the valuation model, often the questions that then leads to richer insights and a better valuation comes out in the process of structurally working through the valuation process. So, by having a structured model is something that works."

From the responses, it is evident that valuation practitioners rely on these standard valuation model structures because they eliminate some of the subjectivity involved in performing a corporate valuation. Linking this back to the purpose of the research, the researcher can conclude that having standardised valuation model structures in place reduces the amount of professional judgement needed to perform a corporate valuation.

However, what is clear from the responses is that even though these models are available the application of the models is ultimately the most important aspect of the outcome.

"Having the model is a comfort to some extent because you know what the starting point is for any valuation. But the whole point of being a professional who does valuations is that you need to assess whether what you are trying to get out of this valuation fits into that model or not. You have to apply your mind as to what makes sense for the industry that you are valuing and the company that you are valuing." Interview participant 4

From this the researcher can conclude that industry nuances are not captured by the standard valuation model structures. This inevitably requires the valuation practitioners to apply professional judgement relating to certain assumptions included in the standard model structures.

"People are familiar with the models, they understand how it works, it's not rocket science, but the outputs are as good as the information you going to put into it." Interview participant 3

From this statement, the researcher can conclude that methodology and approach to a valuation is fairly constant amongst valuation practitioners. This was confirmed during the interview process where each interview participant provided a high-level response to the approach that they follow to perform corporate valuations. These responses link directly to the survey responses where the DCF and market valuation approach was identified as the valuation models most frequently utilised by all respondents. Interview participants confirmed that the DCF method was the most preferred valuation approach in South Africa. All participants confirmed that they use a market approach as a secondary valuation to corroborate the outcomes from the DCF. However, while there is consistency in the models used in corporate valuations, the inputs within the models are influenced by professional judgement. The standard valuation model structures are not complex, but the complexity arise when trying to estimate inputs that need to be included in the models. This comment has a direct link to theme 2 which looks at the professional judgement applied in the inputs within the DCF valuation models.

4.3.2. Theme two: Professional judgement applied in the inputs within the DCF models

While all inputs inevitably include an element of subjectivity, the survey responses highlighted inconsistency in responses specifically relating to the accuracy of the forecasts, the inputs in the CAPM model and terminal growth rates.

4.3.2.1. Forecasted cash flows

All participants confirmed that the cash flow forecasts received from their client are not taken at face-value. Because of the uncertainty associated with future cash flows, valuation practitioners perform a detailed review of the forecasts that are provided. Practitioners run scenarios and sensitivity analysis on the impact that the forecasts have on the final valuation output and even consider adjusting the forecasts when they are uncomfortable with the forecasting assumptions.

"A lot of the information that we use is based on information that is provided by the client, but we try to corroborate that with industry reports to get a sense of the industry. What's been the growth rates historically, what are the key issues and what's the outlook more importantly. At the end of the day, we trying to sell a story about the business. What's happened in the past and how that's going to impact things in the future. Its understanding where that growth is coming from and does it make sense by looking at historical information, industry research and having a sense of what is happening in the market. Depending on how comfortable we are with the cash flows we might adjust." Interview Participant 3.

It is evident that the uncertainty associated with future growth is another reason why the valuation practitioners need to apply professional judgement. Ultimately, the valuation practitioner needs to decide whether the growth forecasts provided by the company management is realistic. The valuation practitioner needs to compare the forecasted growth to historic growth, industry growth and the general market and economy. While historic, industry and market growth are all expected to impact the future forecasts, the valuation practitioner needs to use professional judgement to quantify the impact.

Limited macroeconomic, industry and market data in emerging markets contribute to the difficulties in compiling cash flow forecasts (PwC, 2012). Theoretically, good judgement and common sense is necessary to compile the forecasted cash flows (Fernandez, 2009). However, there is also an element of managerial flexibility included in the forecasts as management are able to delay, expand, abandon and temporarily alter operations during the course of a company's existence (Correia and Cramer, 2008).

"And then the other bit is where the judgment comes in because you're combining all that knowledge of what the client has told you as well as the sources of information that you've used to try and form a picture and a view of what you as a professional think is going to happen. And I think that one is very tricky, and we've seen that particularly in a COVID and post COVID environment. It's very difficult to forecast. There is a lot of subjectivity. But as much as possible, we try and benchmark to external sources of data wherever possible. And then I think just adding to that as well, I think a very valid point is that the more work you've done in a particular sector, the better because you can talk based on experience and that helps as well." Interview Participant 6.

This statement reinforces the professional judgement that is required due to the uncertainty of future growth. The statement also reinforces the fact that industry nuances impact the future growth and the professional judgement applied by the valuation practitioner. It is interesting to note that the valuation practitioner refers to benchmarking the forecasts to external data sources. This statement insinuates that the forecasts are subjective but it also provides assurance that valuation practitioners inspect the accuracy of the forecasts.

It is also worth noting that the subjectivity included within the forecasts are also impacted by biases. The forecasts tell a story about the company's future and this story is dependent on the outcome that the valuation is being used for. The valuation practitioner ultimately has an outcome that their client is hoping to achieve, and they need to validate all the assumptions included in the forecasts in order to present a valuation which supports the final outcome.

"There is no form of objective valuation it depends on who you are valuing for. So even if you go to an independent [valuation] provider, most of these independent folks are swayed by who employs them and who pays their fees." Interview Participant 5.

"A lot of your professional judgment is not completely just professional judgment. It's also dependent on where you are sitting. Are you [performing a valuation for] the buyer? Are you [performing a valuation for] the seller? What are your negotiation skills? And I think that makes a big impact on your forecasts. I think generally a lot of these calls that you make or judgments that you also speak about, ultimately, they're also negotiations items." Interview Participant 1.

4.3.2.2. CAPM inputs

The cost of equity is one of the inputs included in the discount rate calculation. The CAPM model is used by all the survey respondents to calculate this cost of equity. However, based on the survey responses the researcher is able to conclude that there is no consensus on the proxies that are used as inputs in the CAPM model. The biggest challenges that are faced in South Africa is the richness of market information and suitable benchmarks. Lack of comparable listed companies also impacts the beta calculation. Ultimately, all interview participants allude to the fact that they use the inputs within the CAPM model to calculate the cost of equity, however, the reasonableness of the calculated cost of equity and ultimately the cost of capital is verified by their professional judgement.

"The areas where we get the most differences are style differences in the discount rate in the sense that some people use one risk-free rate others use a different risk- free rate. The market risk premiums differ. Inputs to the discount rate is an area where you can spend a lot of time debating between valuers. You use a lot of science to do the calculation but when you come to the end answer always ask yourself, will I be able to invest in that company for that kind of return that comes back. You have used the right methodology but actually your answer tells me that there is something wrong in your WACC. When it comes to discount rate this is where judgement comes in" Interview participant 2.

The interesting aspect that is illustrated by this comment is that the valuation practitioner has an expectation of what a reasonable cost of equity is. In instances where the calculated cost of equity is significantly different to the valuation practitioner's expectation, the valuation practitioner will reassess the reasonableness of the inputs in the CAPM model. While this is not a reason for professional judgement, it illustrates the complexity that arise when trying to estimate inputs that need to be included in the CAPM model.

"It's becoming more of a challenge to use beta because there are so many niche industries that didn't exist like 50 years ago. Beta is a good measure of risk, I don't argue that point, I just think it becomes harder and harder to find comparable companies as the years pass." Interview Participant 4.

The need to apply professional judgement due to industry nuances is reiterate in this statement. The researcher is also able to conclude that the lack of comparable listed companies increases the level of professional judgement in the beta calculation.

"I think CAPM overall has its challenges. At the end of the day, does that beta make sense. The beta can be heavily influenced by the comparable companies that you are using. There is some selection bias that comes into selecting those comparable companies. You can get caught up in inputs but ultimately that discount rate that we're getting is that the return that an investor will expect" Interview participant 3.

Research has indicated that there is a great subjectivity in estimating the inputs into the CAPM model (Correia and Cramer, 2008), there is no definitive consensus on the application of the cost of equity estimation (Kolouchová, 2009, Bancel and Mittoo, 2014) and many academics have noted that CAPM is flawed (PwC, 2012, Kolouchová, 2009). The statement above corroborates the argument made by the respective academics. The researcher concludes that whilst there is consensus that the CAPM has theoretical weaknesses, it remains the most common method of estimating the cost of equity in practice. What is interesting to note is that Fama French 3 factor and 5 factor model were presented to fill the gaps posed by the CAPM model. However, these models are much more complex than CAPM and takes more time to compute thus making the use of these models less cost effective (Sattar, 2017).

"You need to find some long term measure about what that risk-free rate needs to be and it's not so simple as just saying risk-free rate. There are multiple forms of risk-free rate in a country and it needs to be a long term measure. Then on the betas, South Africa has 3 or 4 major companies in each industry that listed. Those betas are very distorted because of thin capital structures, high gearing etc. and using foreign comparable betas from different exchanges you need to adjust for tax rate, leverage, you need to adjust for a ton of stuff. There is a massive amount of judgement applied here. You sort of know where your industry lies between luxury and staple, and you sort of judge where it needs to be." Interview participant 5.

As part of research question 1 we identified beta as an aspect that requires professional judgement. The statement above reiterates this. Ultimately, the calculated beta is considered to determine if it is realistic. From a South African context, the researcher can conclude that the lack of comparable listed companies increases the amount of professional judgement applied. In addition to this, where listed comparable companies are available, high gearing levels distort the beta calculations further increasing the need to apply professional judgement.

4.3.2.3. Terminal growth rate

The terminal growth rate is an assumption which can have the greatest impact on the final valuation outcome. Interview participants all agreed that terminal value contributes a material portion of the final value and therefore, the assumptions around terminal value are significant.

"The problem with DCF is that, if I look at it, the world is very volatile. And so, the terminal value becomes a big part of the valuation, like 60% or so, but you don't even know what's happening in year five. That is often a challenge, especially in volatile times like these that we have right now" Interview participant 1.

During phase 1 (surveys) some respondents believed that limiting terminal value was the appropriate technique to use when terminal value was too high. As part of the interview process, participants were asked to discuss the assumptions regarding the terminal growth calculation and their opinion on limiting terminal value. The responses from all the interview participants reflect their disagreement with limiting terminal value. All respondents agreed that where terminal value appears excessive, limiting the value is not the solution. All participants agree that the more appropriate way of dealing with a terminal value which appears excessive is to perform a detailed analysis on their terminal value calculation to confirm that the correct terminal growth rate has been applied and the terminal growth calculation is being applied to forecasts which are normalised.

"Personally, that's not something typically that we've done because I think then it's almost like you're trying to goal seek to get to a specific outcome and you're using one of the leaders being terminal value to try and do that. I think the approach that we've tended to follow in my professional experience has been more looking at the sector that the client is in and are you applying an appropriate terminal growth assumption. I think it's more important to match that growth rate to what influences that environment and what would influence it going into the long-term. I think that's more important than actually trying to get to a specific number. In determining that number yes you can apply some subjectivity but it's not just getting to a preconceived final number [terminal value]" Interview participant 6.

The statement above reinforces the fact that limiting the terminal value is not an appropriate technique to follow. While the valuation practitioner can use their professional judgement to assess the reasonableness of the terminal value, it is incorrect to change the terminal value calculated. Reassessing the reasonability of the inputs is a more appropriate approach to follow.

"What often happens is that people take their final year of forecasts, and they just capitalise that as terminal value. We spend a lot of time to try to understand over the long term what is a reasonable

revenue growth rate, what is a reasonable margin, what is the right level of working capital and normalising the working capital movement, making sure that the capex reflects no expansion capex because in perpetuity we just maintaining and making sure that the cashflow is robust." Interview participant 2.

The organization's long-term growth assumption and normalised forecasts are the key input to calculating the terminal value. Interview respondents confirmed that the incorrect treatment of these two aspects can have a material impact on the valuation. In many instances, CPI is assumed to represent the terminal growth rate. However, based on their experience all respondents agreed that a detailed understanding of the way the company and industry is expected to grow needs to be considered. Not all industries are expected to grow by CPI. The valuation practitioners need to apply their professional judgement to understand what drives the industry that the company is in and how this will impact the long term grow.

"Once you have a terminal cash flow it's really important to spend some time and not just have an automatic assumption for your terminal growth rate. An example of this is in Telecommunication companies where we are seeing some complexities coming in here. Normally you'd use for example CPI [as a terminal growth rate]. But you can't do that in this business. So, we need to look at different ways of what's more realistic" Interview participant 4

"If you had to ask me where's the biggest area for professional judgement that's exactly where it is. People do not take the time and effort to extend the forecasts. [They should] Move terminal value much further into the future therefore when you discount it, it becomes less relevant. But you also need to understand the business because you need to forecast for roughly an additional 5 years and if management haven't done it what gives you the comfort that you on the right track when you are doing these forecasts. You look at historical margins, you look at historical capital utilisation, you look at historical capex, see what the long-term trends are and understand if the business has fundamentally changed or the market has fundamentally changed. You need to spend a lot more time with the business and the cash flows and understand the business because you can't just blindly take numbers and apply it" interview respondent 5.

The second element of professional judgement applied relates to the normalised cash flows. The terminal value needs to be calculated on cash flows which excludes expansion. The valuation practitioner needs to apply their professional judgement to ensure that any expansion is removed from the final cash flow forecast. This process involves subjectivity as there is no rule as to when a company will cease its expansion. In some instances, the valuation practitioner is required to extend the management forecasts to eliminate this expansion from the terminal value calculation. Extending forecasts has a large element of subjectivity as discussed in the forecasting section in 4.3.2.1 above.

4.3.3. Theme three: Professional judgement applied in adjustments to the corporate finance models

4.3.3.1. Adjustments to peer multiples

In South Africa there are limited listed comparable companies. All the interview respondents agree that there are two significant implications that arise from this. Firstly, the local comparable companies, being so limited, are not always directly comparable. The second potential impact is that the comparable company selection is extended to the international market to have a wider range of comparable companies. To address both limitations, adjustments are processed to the multiples in order to make them more comparable and to incorporate the appropriate country specific risks. These adjustments involve an element of subjectivity which is ultimately needed given the limitations on the comparable companies available.

"Comparable companies aren't that comparable. That's the problem we have in South Africa- a very small universe of listed companies so we have to use international companies and they are operating in completely different geographies and completely different markets, but they are doing the same thing. So, it's trying to understand what the differences between the business that you are looking at and the comparable companies that you've got." Interview participant 3.

"The geographies aren't the same, so you need to start applying judgement in terms of how you apply a developed market multiple with fundamentally different currency risk, different interest profiles etc. How do you apply that multiple in a South African context? Unless you have a direct comparable, you actually need a lot of detail in order to apply these things correctly. You have to do a ton of adjustments to make them relevant. Therefore, people use these approaches, but they blindly use them and then their relevance is actually very low" Interview participant 5.

The fact that there is a lack of comparable listed companies in South Africa is a theme that is repeated here. The lack of comparable listed companies requires valuation practitioners to consider international listed comparable companies within their analysis and calculations. The different geographies and county specific risks impose a need for the application of professional judgement.

4.3.3.2. Discount rate adjustments

In an emerging market like South Africa, adjustments are processed to the discount rate. Respondents agree that these adjustments involve subjectivity. From the responses the researcher can gather that international sources such as Damodaran, Duff & Phelps and the International Private Equity and Venture Capital guidelines provide some guidance on the ranges of adjustments that need to be considered. The shortfall of relying on international sources like these is that they are not always updated and methodologies can tend to differ. Most responds refer to local surveys like the PwC

Methodology survey as a point of reference for these adjustments. The survey is based on responses from people in South Africa who are experienced in the industry sharing their knowledge. The results of the survey are therefore seen as a benchmark of what professionals in South Africa are applying and consider to be acceptable.

"[Regarding discounts relating to discount rates] There is very limited guidance from theory. Let's be honest. The adjustments are very subjective and that's the problem. As a firm we have a view and typically we have a starting point as to where we would go to with these discounts. When it becomes more subjective is when you find the company is so different that you go beyond that guidance" Interview participant 4.

The above statement reinforces the lack of comparable companies being a key reason for why professional judgment is necessary. However, what is interesting about this comment is that it introduces an additional element to this aspect. While we are aware that there are limited listed companies in South Africa we also know that each company is different and thus even though a company may be operating within the same industry there is an element of diversification that needs to be considered. Fundamentally no two companies are the same and therefore the professional judgement is not just limited to the lack of comparable companies but also the lack of **direct** comparables.

"From the experience that I've gained in South Africa I think one of the biggest sources of information the is PWC valuation survey and that provides good theoretical understanding about why we apply these discounts and why it makes sense. The same goes for other sources like Duff and Phelps and the International Private Equity and Venture Capital guidelines. There's also Damodaran's website. So, I think there are quite a few different sources in terms of the theory that support why we apply certain adjustments. There's a lot of subjectivity when it comes to these adjustments so what people tend to do is look at what other experienced people are doing and basically use that as a benchmark" Interview participant 6.

Referring to benchmarks is an aspect that comes through from this response. As previously discussed, benchmarking insinuates the subjectivity associated with the relevant input or adjustment. While the researcher is able to conclude that there is minimal guidance relating to the size of the adjustment that needs to be processed, the fact that respondents make reference to benchmarks emphasises the need for consistency in the adjustment processed.

4.3.3.3. Marketability & minority discounts and control premiums

Interview participants agree that while these adjustments are subjective, there is more guidance from a theoretical perspective regarding these adjustments. Theory provides guidance on factors that need to be considered when applying these discounts and premiums and this theory assists valuation

practitioners in determining whether the adjustment processed should be increased or decreased. In addition to the theory which guides valuation practitioners on the magnitude of the adjustment to be processed, there is also data available in the market is in the form of ranges. The professional judgement that is needed is for the valuation practitioner to decide where within the range the appropriate discount/ premium is. This is where the valuation practitioner refers to the theoretical guidance that is available. Valuation practitioners need to have a detailed understanding of the company that they are valuing and the rights associated with the shares.

"I think this is where the theory that is associated with these discounts actually provides good guidance. Because if you read most textbooks about valuations, it will tell you what factors will drive minority discount, what factors will drive marketability discount. And that enables the valuer to go and sit down and do an assessment as part of your valuation process around these factors- around what is present. Once you've done an assessment of what factors are available and documented those, you probably in a much better position to make a call on where in the range of discount you want to apply. It still requires a huge amount of judgement but there is enough theory available to guide your discount" Interview participant 2.

Responds again refer to local surveys like the PwC Methodology survey as a point of reference for these adjustments.

"What the PWC survey does is it provides a market accepted type of benchmark that people accept. I think that's where theory really helps and it's a bit of a self-fulfilling thing, right? Because the practitioners are the ones that input into it." Interview respondent 1.

While there appears to be more guidance regarding these adjustments reducing the subjectivity, the adjustments still have a material impact on most valuations and this makes the professional judgment implications significant.

"This is the one input that is going to have the largest impact on the value because you are knocking off 10%, 20%, 30%. So, all the other assumptions that you spent so much time on, here you going to go and knock off 30% so it's going to have a massive impact on your value at the end of the day. In terms of the theory there is a lot of research that has been done and you get ranges. What's important is to try to understand how to increase or decrease from a base rate. This involves a lot of judgement and people just pick a number without any thought to the business itself" Interview participant 3.

Adjustments in general include an element of bias. Ultimately valuation practitioners will justify adjustments which aids in achieving the valuation outcome they that are defending. As previously

discussed, the valuation practitioner ultimately has an outcome that their client is hoping to achieve, and they need to validate all the assumptions included in the valuation to support the final outcome. This can be substantiated with researched performed by Shaffer (2020) where he assesses the implication of biases in corporate valuations. As part of his research, he notes that valuation practitioners perform valuations which cater for their clients rather than providing fully independent valuations (Shaffer, 2020).

4.4. Summary of Phase 2 results: Semi-structured interviews

The semi-structured interviews were used to answer research question 2:

Why do these aspects of corporate valuations identified in research question 1 require professional judgement?

To answer this question, the researcher was interested in understanding and describing the experiences of the valuation professionals, the phenomenon of interest being the professional judgement that they apply in corporate valuations and understanding why this professional judgment is required.

The purpose of the semi-structured interviews was to prompt discussions with the valuation practitioners, to gain an understanding of their valuation experiences and to delve deeper into the themes that were identified as part of the surveys. The semi-structured interviews were a secondary approach to add richness, reliability, corroborate and contextualise the results of the surveys.

From the responses received, the researcher can conclude that the need for professional judgement in corporate valuations in South Africa is due to the following reasons:

Industry nuances are not captured by standard valuation model structures requiring the valuation practitioner to update inputs and process adjustments to prepare a valuation which is relevant to the specific industries. These industry nuances make it more difficult to identity directly comparable companies which is already a limitation is a South African context given the limited listed companies within each industry on the Johannesburg Stock Exchange.

Historic, industry and market growth are all expected to impact the future forecasts. In an emerging economy like South Africa, there is uncertainty associated with future growth and market conditions. Richness of market information and suitable benchmarks are also challenges faced in the South African economy. These challenges and uncertainties ultimately impacts the future industry and market growth that will be experienced by a company This requires the valuation practitioner to apply their professional judgement. Industry nuances also impact the forecasts and outlook of a valuation

as the valuation practitioner needs to understand the growth prospects which are specifically relevant within different industries.

Chapter V. Conclusion and recommendations

Chapter 5 presents the conclusion of the study and areas for future research.

5.1. Conclusion of the study

Valuing a firm is essential for both investment and financing decisions. Whilst finance research makes extensive reference to firm value, the professional judgement that is applied in its calculation has not been interrogated within the South African market. The focus of this research study was to examine the use of professional judgement within valuations in the South African context. The research questions were aimed at identifying aspects in corporate valuations requiring professional judgement and understanding why this professional judgement is necessary.

The results of this research indicate that professional judgement is needed when determining which valuation models to apply, when calculating or applying certain inputs within the theoretical models and when considering adjustments that are processed to the valuation models. Industry nuances is a key reason for why professional judgement in necessary in South African valuations. This along with the limited number of companies listed on the Johannesburg Stock Exchange, make it more difficult to identity directly comparable companies which can be used for input estimation within the valuation models. In an emerging economy like South Africa, there is uncertainty associated with future growth and market conditions. Richness of market information and suitable benchmarks are also challenges faced in the South African economy. Market information and future growth are key inputs within a corporate valuation model.

Despite the challenges and uncertainties around valuation inputs, valuation practitioners are all in agreement that having a standard valuation model structure in place is beneficial and creates consistency in the approach to performing corporate valuations. Unfortunately, the level of professional judgement applied within these corporate valuation models can have a material impact on the final value and ultimately impact the management decisions which are made based on these valuations. Based on this, we can conclude that estimating valuation parameters is a key aspect that needs to be considered by both valuation practitioners and academics.

This research report contributes by identifying challenges and uncertainties which necessitate the use of professional judgement within corporate valuations. Identification of these challenges and uncertainties can assist valuation practitioners to place more emphasis on the inputs which have a large level of uncertainty associated with them. The report can further assist valuations practitioners to understand what is considered best practice for corporate valuations in South Africa. Identifying

“best practices” and standardising the estimation practices will be beneficial to valuation practitioners by reducing the differences in corporate valuations. More accurate valuations will result in better information, assisting with more accurate and informed financial decisions being made. This study differs from the other finance research because it incorporates both quantitative and qualitative data to enhance the richness of the results.

5.2. Areas for further research

The focus of this study was to identify aspects in corporate valuations requiring professional judgement and understanding why this professional judgement is necessary. Future research can focus on quantifying the impact of this professional judgement and identifying techniques to reduce the impact of the professional judgement on corporate valuations in South Africa.

In addition to this, from the research, it is evident that corporate valuations are impacted by biases. While this was not the focus area of this research report, it will be interesting to examine the heuristics and biases impacting corporate valuations in South Africa.

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Appendix A Final adapted survey questions

Below are the survey questions that was used to gather data from respondents.

1. Which of the following valuation approaches do you consider when valuing a going concern?
   - ☐ The Dividend Growth Model
   - ☐ The Net Asset Approach
   - ☐ Free Cash Flow to Equity (FCFE)
   - ☐ DCF (Free Cash Flows to the Firm)
   - ☐ Relative Valuation/ Market valuation
   - ☐ Transaction approach
   - ☐ EVA
   - ☐ Other (please specify)

2. Please include additional comments if necessary

3. What method do you use to calculate an appropriate cost of equity?
   - ☐ Capital asset pricing model (CAPM)
   - ☐ Arbitrage Pricing Theory (APT)
   - ☐ Fama-French three factor model
   - ☐ Bond plus yield approach
   - ☐ Dividend growth model
   - ☐ Other (please specify)

4. Please include additional comments if necessary

5. When computing terminal value in the DCF, which approaches do you use?
   - ☐ An exit multiple (EBIT/ EBITDA)
   - ☐ Gordon growth model
   - ☐ NAV assessment
   - ☐ Other (please specify)

6. Please include additional comments if necessary

7. Do you discount all expected future cash flows by a single discount rate or do you consider a different discount rate appropriate for the riskiness of different cash flow streams?
   - ☐ Use a single discount rate

- Use different discount rates for different cash flow streams

8. What do you consider to be an appropriate proxy for the risk-free rate for South African valuations?
   - South African Government bonds
   - US treasury bills
   - Other (please specify)

9. When selecting the appropriate proxy (discussed in the Question above) what maturity do you consider to be appropriate?
   - Less than 1 year
   - Between 1 to 5 years
   - Between 6 to 7 years
   - Between 8 and 9 years
   - Between 10 and 11 years
   - Greater than 11 years

10. How do you estimate the market risk premium?
    - Based on historical market data
    - Based on expected risk premiums (inferring it from the current stock prices)
    - Other (please specify)

11. What is the current level of market risk premium you use for South African valuations (as at Jan 2021)?
    - Less than 5%
    - Between 5% and 7 %
    - Greater than 7%

12. Which market index do you use for estimating the market portfolio for a beta calculation?
    - ALSI
    - FINDI
    - A worldwide index
    - Industry peer set
    - Other (please specify)

13. Do you agree with the statement that Beta is a good risk measure?
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly disagree

14. If you have selected neutral to the question above, please explain your selection

15. When estimating beta, what frequency of returns do you use?
    - Daily
    - Monthly
    - Yearly

16. How many years of historic data do you consider when estimating beta?
    - Less than 1 year
    - Between 1 and 3 years
    - Between 3 and 5 years
    - More than 5 years

17. Do you adjust your calculated historic beta to estimate a future beta?
    - Yes
    - No

18. Do you make any adjustments to CAPM when calculating an appropriate cost of equity?
    - Yes
    - No

19. If you have responded yes to the above question, which of the following adjustments do you consider?
    - Firm size
    - Country risk
    - Specific company risks
    - Liquidity risk
    - Other (please specify)

20. If you consider a “firm size” adjustment to the CAPM, what is the range of premiums (in %) you most often apply?

21. If you consider a “country risk” adjustment to the CAPM, what is the range of premiums (in %) you most often apply?

22. If you consider a “specific company risk” adjustment to the CAPM, what is the range of premiums (in %) you most often apply?

23. How do you define the cost of debt?
    - The actual cost of debt (considering the firm rating)
    - Prime lending rate
    - Other (please specify)

24. What debt maturity do you consider when calculating cost of debt?
    - Short term (up to 1 year)
    - Between 1 and 5 years
    - Between 5 and 10 years
    - Greater than 10 years

25. How do you define the appropriate level of debt to equity required to compute the cost of capital?
    - Target Market Value Gearing
    - Book Gearing (actual gearing level on valuation date)
    - Sector Average Gearing
    - Other (please specify)

26. When calculating terminal value, do you limit the terminal value as a percentage of enterprise value?
    - Yes
    - No

27. If you have responded yes to the above question, what is the limit as a percentage of enterprise value?

28. If you apply the Gordon Growth Model, what do you most often consider to be a proxy for your long term growth?
    - Company specific factors
    - Consumer price index (CPI)
    - Consumption expenditure growth
    - Nominal gross domestic product (GDP) growth
    - Real GDP growth
    - Other please specify

29. Do you apply a minority discount when valuing a minority interest, using any of the following approaches?
    - Free cash flow approach (income approach)
        - Yes
        - No
        - Sometimes

- Relative valuation/ market valuation approach
  - Yes
  - No
  - Sometimes

- Net asset value
  - Yes
  - No
  - Sometimes

30. If you have responded sometimes to the above question (application of minority discount), please elaborate.

31. Where do you apply the above discount (minority discount)?
    - As part of the discount rate for income approach valuations
    - As part of the adjustments to the multiple for relative valuations
    - Adjustment to the enterprise value
    - Adjustment to the market value of equity
    - Other (please specify)

32. Do you apply a control premium when using any of the following approaches?
- Free cash flow approach (income approach)
  - Yes
  - No
  - Sometimes

- Relative valuation/ market valuation approach
  - Yes
  - No
  - Sometimes

- Net asset value
  - Yes
  - No
  - Sometimes

33. If you have responded sometimes to the above question (application of control premium), please elaborate.

34. Where do you apply the above premium (control premium)?
    - ☐ As part of the discount rate for income approach valuations
    - ☐ As part of the adjustments to the multiple for relative valuations
    - ☐ Adjustment to the enterprise value
    - ☐ Adjustment to the market value of equity
    - ☐ Other (please specify)

35. Do you apply a marketability discount when valuing an unlisted entity using any of the following approaches?
    - Free cash flow approach (income approach)
        - ☐ Yes
        - ☐ No
        - ☐ Sometimes
    - Relative valuation/ market valuation approach
        - ☐ Yes
        - ☐ No
        - ☐ Sometimes
    - Net asset value
        - ☐ Yes
        - ☐ No
        - ☐ Sometimes

36. If you have responded sometimes to the above question (application of marketability discount), please elaborate.

37. Where do you apply the above discount?
    - ☐ As part of the discount rate for income approach valuations
    - ☐ As part of the adjustments to the multiple for relative valuations
    - ☐ Adjustment to the enterprise value
    - ☐ Adjustment to the market value of equity
    - ☐ Other (please specify)

38. When performing a relative valuation/market valuation, which multiples do you use most frequently?
    - ☐ Enterprise value/EBITDA
    - ☐ PE Ratio
    - ☐ Enterprise value /EBIT
    - ☐ Price-Book Ratio
    - ☐ Enterprise value /Sales

- Industry specific value multiples
- Other (Please specify)

39. Please justify your selection/ include additional comments if necessary

40. In a relative valuation/market valuation, do you process adjustments to the observed comparable company multiples?
    - Yes
    - No

41. If you have responded yes to the question above, which of the following adjustments do you consider?
    - Company specific risks
    - Diversification
    - Growth
    - Size
    - Marketability
    - Other (please specify)

42. Which do you use to examine sensitivity/robustness of a firm's business plan?
    - Coherence with sector/industry
    - Firm Past Performance
    - Internal coherence
    - Direct competitors
    - Economy the company operates in
    - Peer group from the market approach
    - Other (please specify)

43. What are the main areas that you review before signing off a valuation?

Appendix B Semi-structured interview questions

Below are the interview questions to be used to gather data from respondents. These may be modified based on the results of the survey.

1. Can you describe the tasks that you undertake in valuing a company?

2. In your opinion, do the theoretical valuation models address the complexities that arise in the real world?

3. What are the major advantages of current valuation models?

4. What are the major limitations of current valuation models?

5. What are the most common areas in which you use professional judgement?

6. Why do you believe it is necessary to apply professional judgement in these areas?

7. What are your views on the use of beta as a measure of risk in valuations?

8. How practical is the CAPM model to apply in practice?

9. How do you examine sensitivity/robustness of a firm's business plan?

10. What are the complexities with the current techniques used to determine terminal value?

11. Some valuation experts chose to limit the terminal value as a percentage of the enterprise value. What are your thoughts about this practice?

12. Based on the responses that we have received in our surveys, we see that practitioners consider adjustments to their cost of equity and also the observed multiple used in relative valuations. We also see adjustments relating to minority discounts, marketability discounts and control premiums. What are your thoughts on these adjustments that are being processed and what guidance do you feel corporate finance theory gives us with regards to these adjustments?

13. From our survey we see that practitioners try to perform some sort of a sense check once they have performed their primary valuation. Secondary valuations and comparison to peer multiples are generally performed. If this secondary valuation or reasonability analysis is significantly different to the primary valuation, how do you address this difference?

14. In your experience, what type of modifications need to be made to the current valuation models?

15. Based on reviews that you have performed on valuations that were prepared by other experts, what are the major discrepancies or differences in opinion that you find are most common?

16. Do you have any additional comments that you would like to make regarding the preparation of corporate valuations?