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

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Purpose: Global merger and acquisition and capital market activity have increased over the last decade. A key determinant of the value of these transactions are the results of corporate valuations, which require technical expertise as well as professional judgement. The purpose of this research is to identify aspects of corporate valuations, for the purposes of mergers and acquisitions, which require professional judgement and to understand why the judgement is necessary.

Design/methodology/approach: We followed a mixed-method approach by gathering data from valuation practitioners using a survey, followed by semi-structured interviews.

Findings/results: We find that professional judgement is required throughout the process, from identifying the most appropriate approach to adjusting theoretical valuation inputs. Industry and market nuances are key reasons for professional judgement as is the perceived lack of appropriate asset pricing models.

Practical implications: The views of practitioners, juxtaposed with academic literature on investment theory, have the potential to contribute to the establishment of best practice in corporate valuations.

Originality/value: Prior academic research has focused largely on the technical aspects of corporate valuations. In this research, we present the first-hand experiences of practitioners whose professional judgements are a key contributor to the valuations that underpin corporate actions in the South African market. This research extends both academic as well as corporate research.

Keywords: corporate valuation; professional judgement; CAPM; valuation inputs; valuation approach.

Introduction

Corporate valuations are at 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 & Cramer, 2008; Pinto et al., 2019).

Global merger and acquisition and capital market activity have increased over the last decade with a significant number of deals being concluded on an annual basis. In 2009, approximately 40 000 mergers and acquisitions totalling USD 2 trillion were recorded globally. During 2020, despite the unprecedented levels of economic uncertainty, approximately 46 000 global merger and acquisition transactions were concluded, with a total value of USD 3 trillion. While the number of deals in South Africa makes up a minority portion of the total global deals, foreign investment in South Africa prevails (Institute for Mergers, Acquisitions & Alliances [IMAA], 2023).

Valuations are a key feature in any post graduate prescribed text, yet they remain largely a 'product of human judgement' (Gallimore, 1996, p. 261). They are not an exact science, despite the theoretical valuation models that are available. They have therefore been defined as a craft (Damodaran, 2010). Many 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 & Maino, 2013). Although the judgement applied to certain assumptions within the valuation model may be minimal, the effect on the output can be significant (Bunn & Wright, 1991; Dziwok, 2015; Pinto et al., 2019). For example, Dziwok (2015) showed that a 1%

increase in forecast EBITDA margins resulted in a 10% increase in value and a 0.3 decrease in beta had a 41% increase in company value.

'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'. (Damodaran, 2015). The ideal valuation lies somewhere in the *middle* (Damodaran, 2015). This research explores that 'middle' ground between the theory and the 'art' of valuations.

Its aim is to firstly, identify aspects of corporate valuations where professional judgement is required and secondly, to examining why professional judgement was necessary. The research is performed in a South African context, with concomitant limitations on the generalisability of findings.

Apart from merger and acquisition activity in the economy, valuations are used by regulators and credit agencies (Pinto et al., 2019). For financial reporting purposes, International Financial Reporting Standards (IFRS) 3 prescribes that all assets from a business combination should be measured at fair value. International Accounting Standard (IAS) 36 prescribes that all current and non-current assets need to be considered for impairment to ensure that they are not overstated. While the applications of valuation principles are vast, this study focuses specifically on South African corporate valuations performed for the purposes of merger and/or acquisition transactions. Furthermore, as an initial exploration of the topic, we focus only on listed companies. These companies are required to produce audited financial statements and market data for these companies is published and publicly available. Yet, corporate valuation experts are still required to exercise significant professional judgement in arriving at a reliable value for business combination purposes (Graham & Harvey, 2001).

Similar studies have been conducted in international markets (Fernández, 2007; Graham & Harvey, 2001; Turcas et al., 2016). From a South African perspective, literature and corporate surveys (PwC, 2012, 2017, 2019) have filled the gap in the academic research. While literature and corporate surveys focus on the aspects within corporate valuations requiring professional judgement, limited research discussing challenges and uncertainties that necessitate the use of professional judgement within corporate valuations are available. An understanding of these challenges and uncertainties can make a practical contribution by establishing best practice. In this regard, this study answers the call by Graham and Harvey (2001) for research that focuses on the practice of corporate finance and that of Coleman (2014) for research that connects practitioner knowledge with investment theory.

According to research performed by Coleman (2014), corporate finance theories are not always relevant in practice. The most common reason for this is that data are not always available to populate corporate finance models. Most of these finance models require extensive data about the future which cannot solely be based on historical data. This contributes to the challenges faced by valuations practitioners and further necessitates the use of professional judgement.

An understanding of the reasons for challenges in applying valuation models can make a theoretical contribution. Finance research, especially in South Africa, is dominated by quantitative approaches. This research makes a methodological contribution as data were collected from surveys and interviews with practitioners as part of a mixed-methods approach.

Literature review

The theoretical underpinnings of this research lie in the seminal works on the Efficient Market Hypothesis (Fama,1970). The implication of the efficient market hypothesis is that securities are appropriately priced given that investors are well-informed and intelligent. However, the seminal work of Grossman and Stiglitz (1980) showed that as a result of information asymmetry, economic models do not perfectly reflect the information available. Therefore, in determining a value of a business for merger or acquisition purposes, markets rely on the professional education and training of valuation practitioners to reduce information asymmetry (Sanders & Boivie, 2004). Theoretically, guidance has been provided to use financial fundamentals to value a firm. However, in practice many of the inputs needed to perform a valuation or determine fair value require an element of professional judgement despite the existence of substantial guidance regarding the different techniques to apply when valuing a firm (Bunn & Wright, 1991; Graham & Harvey, 2001; Palea & Maino, 2013; Turcas et al., 2016).

The rest of this section provides a discussion of key uncertainties that have been identified in prior research as being likely to affect corporate valuations.

Forecasting cash flows

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 organisation, historic growth and strategies play a crucial role in the accuracy and reliability of the forecasts (Fernández, 2007). The forecasts required in 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. Uncertainties regarding future growth rates are exacerbated by unstable markets. Specifically, the growth of the South African economy is affected by the unpredictability of electricity supply (Andersen & Dalgaard, 2013; Atems & Hotaling, 2018), growth of the Johannesburg Stock Exchange's (JSE's) resource companies is significantly influenced by the global commodities cycle (Szczygielski & Chipeta, 2015) and the returns on the JSE All-Share Index (ALSI) are subject to the volatility of the rand (Barr et al., 2007). These uncertainties 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. Corporate finance theories do not incorporate intuitive thinking. Instead of solely relying on the corporate theories, valuation practitioners use their professional experiences and judgement to conclude on certain aspects. Client visits and meetings with management contribute to developing a personal view and expectation regarding future conditions, which practitioners incorporate into their forecasts (Coleman, 2014).

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. The use of assumptions in the forecasting of cash flows was therefore explored in this research as an area of professional judgement.

Estimating discount rates

While academic research has indicated that the capital asset pricing model ('CAPM') is the most commonly used technique to estimate the cost of capital (Correia & Cramer, 2008; Graham & Harvey, 2001, 2002; PwC, 2012), there is no definitive consensus on the application of the cost of equity estimation (Bancel & Mittoo, 2014), and many academics have noted that the CAPM is flawed (Coleman, 2014; Jagannathan & Meier, 2002; Van Rensburg & Robertson, 2003).

In addition, there is great subjectivity involved in estimating these inputs into the CAPM (Correia & Cramer, 2008). Fund managers interviewed by Coleman (2014) expressed a good knowledge of CAPM but simultaneously express their concerns regarding the practicality of the inputs in the model. Uncertainty related to forecasting volatility, the impact that the period in time has on beta calculations and the vast range of risk premiums are some of the concerns that the fund managers had.

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. 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. This poses a challenge in practice because all the cash flows relating to business operations do not necessarily have the same maturity. As such, the general consensus is that a long-term government bond is used as a proxy for the risk-free rate. 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 utilise 10-year bond yields derived from the yield curve (PwC, 2017).

Theoretically, there are different approaches to calculate the equity risk premium (Jagannathan & Meier, 2002). However, there is very little guidance on these calculations (Correia & Cramer, 2008; Bancel & Mittoo, 2014) and this results in a wide range of equity risk premium estimates.

The CAPM requires a forward-looking beta but, due to the lack of guidance on how to calculate a forward-looking beta, practitioners have resorted to adjusting the historical beta for any changes in the firms' future operations (PwC, 2017). The historic beta calculation is an easy calculation but it involves assumptions which require professional judgement (Bancel & Mittoo, 2014). The market index, risk-free rate, time period and intervals over which beta is calculated are all the inputs that can considerably impact the estimation of beta (Bancel & Mittoo, 2014).

A key flaw in the CAPM model is that it only considers systematic risk but does not incorporate specific project risk (Bancel & Mittoo, 2014; PwC, 2017). While most valuation practitioners agree that cost of equity should be adjusted for project-specific risk, the required adjustments are based on their own assessment of a project's risk (Bancel & Mittoo, 2014).

Theoretically, the cost of debt included in the cost of capital calculation is the incremental after-tax cost of debt (Modigliani & Miller, 1958). In calculating the cost of debt, the two areas of potential subjectivity are the debt term and the cost of debt included in the cost of capital calculation (Bancel & Mittoo, 2014). While it makes sense to include long-term debt in the weighted average cost of capital (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 results in some valuation practitioners using the short-term debt in their cost of debt calculation (Beech & Thayser, 2015). The choice of inputs required to estimate a discount rate was therefore explored in this research as an aspect of valuations that requires professional judgement.

Forecasting a growth rate

The terminal value often forms the greatest proportion of any corporate value. However, it is significantly impacted by the vagaries of the estimated growth rate. 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). 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. For example, Damodaran (2006) recommends that the terminal growth rate be based on the risk-free rate. While these rates may not be significantly different, the sensitivity of the terminal value to small changes in the rate is significant. This was demonstrated by Mills (2005). Assuming a terminal value of 5%, the terminal value of Jordan Telecom was 429 million Japanese Yen. Using a 6% terminal growth rate resulted in a 15% increase in the terminal value. The subjectivity involved in the estimation of growth rate was therefore considered in this research as part of the practitioner's judgement.

Adjustments to a relative valuation

Relative valuations are a valuation technique that 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. However, no two companies are exactly alike 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. These adjustments are, by their very nature, a product of professional judgement.

Macroeconomic variables in South Africa

Regardless of the chosen valuation approach, practitioners need to incorporate current and future economic conditions in their valuations. 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.

Methodology

Mixed-methods research techniques were employed in an explanatory sequential design (Creswell & Clark, 2018). Firstly, to identify the aspects of corporate valuations that require judgement, a survey questionnaire was distributed to valuation practitioners. Questions in the survey were formulated based on prior research (Birmingham & Wilkinson, 2003). Secondly, the results of the survey, combined with themes from the subsequent semi-structured interviews, were used to explore the reasons for the use of professional judgement.

From prior literature, it appears that there are many possible reasons why valuation practitioners are required to apply professional judgement when performing corporate valuations. These themes were incorporated into survey questions and their proposed analysis has been detailed in the methodology section.

The survey was sent to two 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.

Once the survey was finalised based on the outcomes of the pilot study, potential participants were invited to participate in the study and all potential participants accepted the invitation.[1] 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 were 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 5 years of post-qualification experience. The application of these rigorous selection criteria came at the cost of having a relatively small sample size of 30 participants. Electronic responses were collected using Google Forms.

All respondents to the survey were subsequently invited to participate in the semi-structured interviews. A total of six practitioners agreed to participate in the interviews. The interviewed participants included senior valuation practitioner from audit firms, consulting firms and merchant banks, each with valuation experience in excess of 10 years. This ensured that the interview results included the experience and views of representatives of major participants within the corporate valuation industry. The selection of 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 deemed sufficient to uncover the core elements of the professional judgement 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 (Wilson 2011) such as the current study ranges 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.

Ultimately, saturation (Constantinou et al., 2017) was reached after four interviews as no new themes subsequently emerged. Thus, the researcher was able to address the research question adequately within these six interviews and was able to gain a comprehensive understanding of the reasons for professional judgement in valuations.

1.We attribute the 100% response rate to the fact that one of the researchers leveraged her professional networks to encourage participation in the study.

Interviews were conducted virtually via Microsoft Teams. On average, interviews were between 30 min and 45 min each. During these interviews, interview participants were asked open-ended questions to prompt discussion. The open-ended questions were designed to gain an understanding of their valuation experiences and to delve deeper into the themes that were identified as part of the surveys. As suggested by Starks and Brown Trinidad (2007), probing questions were asked to encourage the experts to elaborate on their personal experiences of applying judgement.

The researcher employed a deductive approach to identifying themes in the interview transcripts. This approach implied that the researcher used pre-existing frameworks (from the survey results). The inherent subjectivity of the coding process was minimised as the researcher checked the themes with a fellow researcher who is skilled in the valuation field.

Ethical considerations

The researchers were granted ethics clearance by the University of the Witwatersrand (Protocol Number SOA2021-02-01). In accordance with the requirements for this clearance, the researcher ensured that no sensitive company or personal information was requested and the identities of respondents were 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 written consent was specifically requested using a Consent Form.

Results and discussion

Results of phase 1: Surveys

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 was explored further as part of the semi-structured interviews. The survey responses show that the preferred valuation approach used by valuation practitioners is the discounted cash flow (DCF) valuation approach (98% of responses). These results are in line with the results of other literature and the PwC methodology survey (Damodaran, 2006; PwC, 2019). The results also point to the most common foundation of corporate valuations – accounting data. The researchers noted the initial evidence of the reasons for professional judgement in corporate valuations; accounting data, which is historic, needs to be adjusted for future growth using professional judgement.

The researchers also noted that despite the importance placed on the Economic Value Added (EVA) method in corporate finance curricula in South Africa, it was the least preferred valuation approach by practitioners (less than 1% of responses).

According to respondents, the choice of valuation method was driven by the industry, availability of information and the stage of growth of the subject entity. 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 was further explored in the interviews.

Discount rates

Table 1 presents a summary of the methods used to calculate the cost of equity. The dominance of the CAPM is in line with literature that the model is popular in practice despite its theoretical shortcomings (Jagannathan & Meier, 2002) and limited empirical reliability in the South African market (van Rensburg & Robertson, 2003). Notably, the majority of respondents do not even consider a second alternative to calculate the cost of equity.

Although the respondents showed an overwhelming preference to use the CAPM model to calculate the cost of equity, 33% of respondents disagreed that beta was an appropriate measure for risk. One of the respondents used the free-text field in the survey to explain their choice: 'There really isn't a better measure that is used and understood in the market'.

The lack of guidance on the calculation of the equity risk premium also appears to be problematic in the South African context. The method of estimating the equity risk premium varied widely among participants. Although 23 participants based their estimates on historical market data, 12 of these participants also used the companies' current share prices. This indicates that different approaches are used by the same practitioner, depending on the subject of the valuation. The remaining seven respondents used third-party data sources as an estimate of the equity risk premium. This indicates that in the absence of context-specific guidance, practitioners sometimes use data from financial research institutions.

Based on the responses from survey participants, it appears that a considerable amount of professional judgement is applied in the beta calculation. The variations in responses to these questions evidence the lack of consistency in approaches to calculating beta, as shown by the standard deviations in Table 3. Although the majority of respondents (55%) used the ALSI as a proxy for the market, this preference was closely followed by 37% of respondents who

TABLE 1: Calculation of the cost of equity.

Method	Number of responses
Capital asset pricing model (CAPM)	29
Bond plus yield approach	2
Dividend growth model	2
Fama-French three factor model	1
Arbitrage Pricing Theory (APT)	0
Other	0

TABLE 2: Adjustments to the capital asset pricing model cost of equity.

Adjustment	Number of responses
Firm size	26
Country risk	15
Company risk	26
Liquidity risk	7
Other	0

TABLE 3: Range of adjustments made to the capital asset pricing model cost of equity.

Adjustment	Min.	Max.	SD
Firm size	-	20	5.17
Country risk	0	16	4.55
Company risk	0	30	6.21

Min., minimum; Max., maximum; SD, standard deviation.

used an industry peer set. Notably, 5% of respondents indicated that their choice of beta would 'depend on the circumstances'. These 'circumstances' were further explored in the interview.

Collectively, the survey responses on the CAPM provided the initial indications that despite the availability of alternate models, practitioners tend towards models that have been used historically. They compensate for the model's well-known inadequacies by making adjustments to the inputs, based on their judgement.

The next question related to the typical adjustments that are made to the CAPM-derived cost of equity, with the survey allowing for multiple selections. Table 2 shows the most common adjustments were for firm size and specific company risk. Notably, country risk was not common across all respondents (50% of respondents), despite the common South African context.

The adjustment for size is appropriate considering recent findings in the academic research that the size factors in the Fama-French 3 and 5 factor models are significant predictors of future returns (Cox & Britten, 2019). However, the size adjustment is puzzling in the context of the relatively low popularity of the Fama-French 3 factor model to estimate the cost of equity (Table 2). The Fama-Frech 3 Factor model incorporates a size factor and, in that regard, is superior to the CAPM.

As can be seen in Table 3, the magnitude of the adjustments processed to the CAPM-derived cost of equity is also based on judgement. This may be considered acceptable as the adjustments are very likely to vary based on company-specific circumstances. However, the results of the survey indicated vast differences in the adjustments processed for each respective risk factor identified in the previous question.

As discussed in the literature review, 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. As a result, many practitioners use the cost of short-term debt as a proxy for the cost of long-term debt. This can be seen from the survey results in Table 4 where only 21% of the candidates utilise a debt term which is greater than 10 years.

TABLE 4: Debt term.

Debt term	Number of responses
Between 5 years and 10 years	18
Between 1 year and 5 years	8
Greater than 10 years	7
Short term (up to 1 year)	0

TABLE 5: Preferred growth approximations.

Growth approximations	Number of respondents
CPI	22
Real GDP growth	7
Other: Industry CAGR	1

CAGR, compound annual growth rate; GDP, gross domestic product; CPI, Consumer price index.

TABLE 6: Review of the reasonability of a valuation.

Reasonability criteria	Number of responses
Macro-economic environment	28
Historic performance of company	24
Consistency with the rest of industry	21
Actions of competitors	15
Consistency of assumptions throughout the valuation	9

Growth rate

Respondents were asked what they consider an adequate proxy for long-term growth of a company's cash flows. As can be seen in Table 5, although there is a strong preference for the consumer price index, a fair number of respondents chose real GDP growth. The differences in the responses regarding an input as significant as the growth rate were noted for exploration in the interviews.

Adjustments to multiples for relative valuations

The majority of respondents (77%) made adjustments to chosen multiples. Common adjustments were for size (76% of responses) and growth rates (66% of responses).[2]

Reasonability checks

Respondents were asked how they examine the sensitivity and robustness of a firm's business plan. Table 6 shows that the most popular benchmarks were industry-specific, with a strong focus on the actions of competitors. The context in which subject companies operate was further emphasised by the focus on economic indicators as a reasonability indicator. Notably, the least common reasonability criterion was internal consistency of the valuation. The reasonability criteria are dominated by benchmarks that indicate the reasonability of the chosen assumptions, rather than how those assumptions have been applied.

2.Respondents could choose more than one option.

The survey highlighted key aspects of valuations which required professional judgement. In addition, key reasons for the use of judgement had begun to emerge.

Results of phase 2: Semi-structured interviews

Reasons for the use of professional judgement had begun to emerge based on the results of the survey. These themes were further explored in the interviews and were coded deductively (Linneberg & Korsgaard, 2019) according to the headings that follow in the rest of this section.

Lack of easy-to-use alternatives to the capital asset pricing model

The results of the survey indicated that while there is consensus that the CAPM has theoretical weaknesses, it remains the most common method of estimating the cost of equity in practice. When the researcher suggested the Fama French 3 Factor and 5 Factor models as alternatives, the feedback from all the participants was that the suggested models were not easy to apply and not well understood in the market.

The adjustments made to the CAPM-derived cost of equity are also subjective and vary considerably among respondents. Interview participants explained that while they can obtain guidance from that international finance research institutions, the shortfall of relying on international sources like these is that they are not always updated and methodologies can tend to differ.

Lack of industry-specific guidance on the magnitude of adjustments to inputs

There was resounding agreement from all participants that industry nuances are a key reason for professional judgement in South African valuations. In an emerging economy like South Africa, there is uncertainty associated with future growth and market conditions. Richness of suitable industry benchmarks poses a challenge to practitioners. Participant 3 highlighted the importance of industry-specific guidelines. They explained:

> '[*W*]e try to corroborate [*client information*] 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.' (Participant 3, Senior valuation practitioner, Audit firm)

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 growth.

Capital market

The lack of comparable listed companies increases the amount of professional judgement applied, especially in a relative valuation. Valuation practitioners explained that the limited number of companies listed on the JSE was problematic for various reasons. Firstly, the local comparable companies, being so limited, are not always directly comparable. Participant 4 explained that:

> '[*I*]t'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 just think it becomes harder and harder to find comparable companies as the years pass.' (Participant 4, Senior valuation practitioner, Audit firm)

Secondly, when international companies are used as a comparative company, further adjustments are required 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 that is ultimately needed given the limitations on the comparable companies available.

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.

Macroeconomic uncertainty

The terminal value in a valuation forms a substantial proportion of the final value. It is influenced by growth projections, which, in turn, are influenced by economic outlook. Participant 1 explained:

> '[*T*]he 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.' (Participant 1, Senior valuation practitioner, Consulting firm)

This sentiment was echoed by Participant 6 who cited the difficulty in estimating growth rates in an economy that is reeling from the impacts of coronavirus disease 2019 (COVID-19) lockdowns.[3]

A potential solution to minimising the impact of the growth rate on the valuation is to limit the terminal value. However, all respondents agreed that where terminal value appears excessive, limiting the value is not the solution. They felt it would be more appropriate to perform a detailed analysis on their terminal value calculation to confirm that the assumptions that underlie the growth rate are reasonable. In this regard, Participant 6 explained:

> '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.' (Participant 6, Senior valuation practitioner, Consulting firm)

3.This interview was conducted at a time when there were restrictions on international mobility due to the COVID-19 pandemic.

Conclusion and recommendations

The focus of this research study was to identify aspects in corporate valuations requiring professional judgement and to explore why this professional judgement is necessary. We found that professional judgement is prevalent throughout the valuation process, from the choice of valuation model to the choice of benchmarks in the review phase.

Industry nuances are a key reason for why professional judgement is necessary in South African valuations. This, along with the limited number of companies listed on the JSE, makes it more difficult to identify directly comparable companies that 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. Macroeconomic uncertainties exacerbate existing difficulties in the estimation of growth rates for the forecasts. The lack of industry specific-guidance to deal with these uncertainties, the lack of easily understandable alternatives to the CAPM and the nature of the South African capital markets are all factors contributing to the need for judgement in valuations.

We find support for the assertions by Coleman (2014) that the varying contexts[4] in which investment decisions are made inhibit the development of more empirically based models. Practitioner surveys (e.g. PwC, 2017) have contributed to the establishment of benchmarks with regard to corporate valuations. The present research focused on the reasons for the use of judgement. Therefore, it contributes by identifying challenges and uncertainties that necessitate the use of professional judgement within corporate valuations in a South African context. Identification of these challenges and uncertainties can assist valuation practitioners to focus their efforts on the inputs that have a large level of uncertainty associated with them.

For example, we identified that the lack of easily understandable alternatives to the CAPM necessitates the inclusion of judgement-based adjustments for factors such as company size. By identifying challenges experienced by practitioners in the application of popular pricing models, this research highlights the need for dissemination of academic research to practice. For example, practitioners use the CAPM after adjusting for firm size, despite promising empirical applications of the Fama-French 3 factor model (which contains a size factor) in the South African market.

This study incorporates both quantitative and qualitative data to enhance the richness of the results. Notably, it is unique as it extends both academic research as well as research by finance research institutions (e.g. PwC, 2017).

4.Contexts can include industries or geographical locations.

The research identified the lack of industry-specific guidance as a key reason for the use of judgement. Future research that examines the impact of macro-economic factors at intra-industry and inter-industry levels may answer this call for industry-specific guidance. In this regard, interviews with in-house corporate finance practitioners would be a worthwhile extension to the current research.

As a contribution to the growing strand of research on behavioural corporate finance (for example, Gallimore (1996), Shaffer (2020)) assesses the implication of biases in corporate valuations. As part of his research, he notes that valuation practitioners perform valuations that cater for their clients rather than providing fully independent valuations. Participant 5 echoed the findings of Shaffer (2020) with the following words:

> '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.' (Participant 5, Senior valuation practitioner, Consulting firm)

These sentiments were not mentioned by any of the other participants although they are in line with the research. A detailed exploration of conflicts of interests was beyond the scope of this research but is noted for exploration in future research.

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Competing interests

The authors have declared that no competing interest exists.

Authors' contributions

T.G. assisted with writing, original draft and data curation. A.S. assisted with conceptualisation, methodology and writing, review and editing. A.M. assisted with supervision.

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Data availability

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Disclaimer

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