Full Length Research Paper

A South African perspective on the multiples of choice in the valuation of ordinary shareholders' equity: From theory to practice

W. S. Nel

Department of Accounting, Stellenbosch University, Private Bag X1, Matieland 7602, South Africa.
E-mail: snel@sun.ac.za. Tel: 021-808 3430. Fax: 021-886 4176.

It is imperative that academic theory regarding investment and finance, and the application thereof in practice, are well aligned. If there is a gap between what academia advocates in their lecture halls and what investment practitioners apply in practice, this may suggest that there is a need to converge academic thinking regarding the use of multiples *per se*; and to narrow the gap between academia and investment practitioners. This paper investigates how well valuation theory regarding multiples, as advocated by academia, is aligned with the multiples that leading financial analysts and corporate financiers apply in practice. Although multiples are used extensively in practice as an equity valuation method, no study has yet compared the preferences of investment practitioners for certain multiples, with the multiples that academia advocates. The research results reveal that, although academia and investment practitioners favour the price earnings ratio and agree on the suitability of earnings and sales as value drivers; they disagree significantly with regard to other multiples and value drivers.

Key words: Equity valuation, multiples, price earnings ratio, price earnings growth ratio, cash flows, value drivers, market value of invested capital, earnings before interest, tax, depreciation and amortisation, earnings before interest and tax.

INTRODUCTION

The valuation of equity is a key application area of finance. The South African Institute of Chartered Accountants (SAICA) regards the topic of valuations as a key deliverable in their finance syllabus (SAICA, 2008). Accordingly, a considerable amount of time is devoted to the topic of equity valuations in academia. In its syllabus, SAICA (2008) specifies four different valuation bases, namely earnings, dividends, net assets and free cash flow. Researchers, on the other hand, specify different approaches to valuations. Hendrikse and Hendrikse (2004:123), for example, distinguish between the cost approach, the income approach and the market approach, while Damodaran (2002:11) distinguishes between discounted cash flow (DCF) valuations, relative valuations and contingent claim valuations. Regardless of the approaches specified, academia's emphasis on the DCF approach is well supported by research, which regards the DCF approach as a superior equity valuation

method (Goedhart et al., 2005:1; Courteau et al., 2003:24; Berkman et al., 2000:81). Similarly, leading financial analysts and corporate financiers, who will be referred to as "investment practitioners" in this paper, tend to focus on the DCF approach in practice (PwC 2008:13). Proponents of the DCF method attempt to estimate the intrinsic value of an asset by focusing on the asset's fundamentals (Damodaran, 2007:5). Opponents to the DCF approach, however, point out that the focus of DCF models is on the discounting of forecasted future cash flows, the estimation of which can be unreliable (Kamstra, 2003:49). The DCF approach can also be rather cumbersome and rests on a range of sensitive assumptions (Lie and Lie, 2002:1). Consequently, although multiples are generally regarded as appropriate secondary models, they are used extensively in practice, usually as a plausibility check to more sophisticated equity valuation methods (Bhojraj and Lee, 2002:407).

Valuations that are based on multiples assume that the actual value (V) of a company's (j) shares at a given point in time (t) is equal to the product of a specific multiple (λ) and a specific value driver (∂) at that specific point in time, so that

$$Vjt \quad = \quad \lambda \, t \, \partial \, jt$$

Much research has been devoted to determining which multiples and value driver categories, such as earnings, are superior to others (Liu et al., 2001:153; Liu et al., 2002:23; Abukari et al., 2000:22; Cheng and McNamara, 2000:367; Volker and Richter, 2003:216). Researchers such as Baker and Ruback (1999:19) focused on which specific value drivers, between earnings before interest, tax, depreciation and amortisation (EBITDA) and earnings before interest and tax (EBIT), for example, are more accurate in terms of equity valuation. However, the literature review revealed no evidence of a study that compared academia's preferences with regard to the use of multiples, with that of investment practitioners. This study investigates academic consensus among chartered accountants regarding the use of multiples and whether the general concern regarding a gap between theory and practice (Triantis, 2005:8; Ralston; 2003:1; Bernstein, 2008) is warranted. Although this exploratory study focuses on a specific target audience within the wider academic community, the research results indicate that the topic warrants further investigation, which the author intends pursuing with future research. However, for the purpose of this paper, the reference to academia will specifically refer to chartered accountants who are in academia. The emphasis is on academia's perception regarding the role of multiples, the most suitable multiples and value drivers, and how these preferences compare to those of investment practitioners in South Africa.

The next two sections set out the objective and the value of the research, followed by a literature review. Sections five and six describe the research methodology and the survey results regarding the multiples that are preferred by academia, followed by a gap analysis between theory and practice in section seven. Final remarks are offered in the last section of this paper.

OBJECTIVE OF THE RESEARCH

The chief objective of this research is to ascertain whether there is a gap between what is lectured in academia and what is applied in practice. If such a gap exists, it may have implications for academia and invest-ment practitioners. The paper will focus on multiples in particular as suitable equity valuation methods. The research forms part of a wider research project, which is aimed at establishing the nature and size of the gap between theory and practice with regard to equity valuations, that is primary methods of equity valuation,

secondary methods of equity valuation, discount rates, etc.

VALUE OF THE RESEARCH

The convergence of academia and investment practitioners on mainstream valuation practices is a common phenomenon in developed markets (Bruner et al., 2002:319). Although Bruner et al. (2002:319) emphasised the need for such convergence in emerging markets, no research has yet been conducted on this topic in South Africa. A PricewaterhouseCoopers (PwC) valuation methodology field survey, which was conducted among leading financial analysts and corporate financiers in 2008, provides a valuable benchmark for best practice for investment practitioners, while affording academia an insight as to which equity valuation methods are applied most frequently in practice. However, no such research has yet been conducted among academia.

The contribution of this study is to facilitate the convergence of, firstly, academic thinking regarding the use of multiples, and, secondly, valuation practices between academia and investment practitioners. To this end, the research results will present academic consensus regarding the use of multiples and highlight differences between academia and investment practitioners in this regard. Should the results reveal that a gap indeed exists; this would highlight the need for academia to perhaps reconsider their syllabus. Similarly, it could mean that there are multiples that are advocated by academia that are not applied in practice. In this case it may be necessary for investment practitioners to reconsider the multiples that they are using in practice. Either way, should such a gap exist, this may indicate that there is a need for academia and investment practitioners to converge their thinking regarding the use of multiples. The research also contributes to the preparation of students for the marketplace. If there is a gap between theory and practice, the nature of the gap should be investigated and resolved in order to better align academia with the real world.

LITERATURE REVIEW

Equity valuation methods based on multiples typically have broad dispersions (Fernándes, 2001:2), which explains why they are not generally regarded as the most accurate equity valuation methods (Courteau et al., 2003:24). Consequently researchers generally regard multiples with the lowest dispersion as the most reliable multiples (Pratt, 2006:4). Although multiples are not suitable primary equity valuation methods, they are used extensively in practice, usually to anchor more comprehensive valuation methods such as the free cash flow model (Liu et al., 2002:1). Despite the fact that more

sophisticated models may offer more suitable equity valuation methods, they tend to be based on various assumptions and are rather cumbersome, which is why analysts often revert to multiples. Consequently analysts' reports and investment bankers' opinions are ubiquitous with multiples (Schreiner, 2007:1). Even analysts who are stern supporters of more comprehensive equity valuation methods revert to multiples to check their equity values for plausibility (Bhojraj and Lee, 2002:407).

Evidence from practice

Best practice in terms of corporate valuation policy in emerging markets such as South Africa, is a topic of great international interest (Bruner et al., 2002:319). A valuation methodology survey conducted by PwC in 2008 among 25 leading financial analysts and corporate financiers confirmed that investment practitioners have a preference for the DCF approach when valuing equity. The 2008 PwC survey used a frequency table between 0 - 3, where 0 indicates that the method is seldom or never used, 1 indicates that the method is often used, 2 indicates the method is frequently used and 3 indicates that the method is always used. The most popular valuation approaches that are currently used in practice, according to the PwC survey, are contained in Figure 1.

Figure 1 indicates that the most popular approach to valuing equity that is currently used in practice is the DCF approach (scored a 2.75), that is determining the value of equity by discounting future cash flows that an entity is expected to generate. Multiples (scored a 1.5) and the net assets approach (scored a 0.75), were the second and third best alternatives, according to the PwC survey. The most popular multiples that are currently used in practice, according to the PwC survey, are contained in Figure 2. According to the PwC survey results, the P/E ratio is the most frequently used multiple in practice (scored a 2), closely followed by the MVIC/EBITDA and MVIC/EBIT ratios, at 1.75 and 1.5, respectively. MVIC equals market capitalisation plus preference shares plus interest - bearing debt.

Value drivers

Multiples are used to value an asset by using a comparable asset price/ratio as a benchmark with regard to a common variable such as earnings or sales, known as value drivers. Research on multiples tends to focus on these value drivers, which is earnings, cash flows, book value and sales. Most researchers come to the conclusion that earnings - based multiples are superior to their counterparts. Liu et al. (2001:153), for example, indicated that earnings - based multiples perform more accurate valuations than those based on cash flows. In an extended study by Liu et al. (2002:23), it focused on

which value drivers performed the best amongst earnings, cash flows, dividends and revenue, to approximate stock prices in ten countries, including South Africa. Their research results indicated that earnings - based multiples performed the best valuations, while cash flow - and dividend - based multiples produced average results. Sales - based multiples performed the worst. Earnings also outperform book value as a value driver when using multiples to value equity (Abukari et al., 2000:22). Research conducted by Cheng and McNamara (2000:367) and Volker and Richter (2003:216) also confirmed the superiority of earnings - based multiples.

Further research focused on which earnings - based value drivers are superior. Baker and Ruback (1999:19) found that sector - adjusted EBITDA outperformed EBIT and revenue. Lie and Lie (2002:53) found EBITDA to be a more accurate value driver than EBIT, and that forward - looking multiples outperformed historical multiples.

Kim and Ritter (1999:430) concluded that two - year earnings per share (EPS) forecasts are more accurate than one -year forecasts, while one - year EPS forecasts are more accurate than current EPS. Research conducted by Schreiner and Spremann (2007:18) confirmed that forward - looking multiples performed more accurate valuations than trailing multiples.

Gap analysis

The literature review revealed that, although a few earlier studies investigated a gap that presumably exists between theory and practice with regard to investment management, there is no existing research on how well the multiples that are advocated by academia are aligned with the multiples that are applied in practice. The first formally reported study in this regard was conducted by the American Finance Association (Upton 1949) in 1948. Twenty - seven lecturers representing 20 schools, met to discuss methods of teaching Business Finance, during the American Finance Association convention at Cleveland in the United States. Members present at the convention argued that business school education failed to meet the needs of businesses in practice.

In a similar study, Wendt (1966:422) conducted a survey at 205 business schools and found that investment faculties lagged investment practitioners by more than a decade and concluded that there was a need for academia to catch up. Smith and Goudzwaard (1970:344) found that the gap between what is taught by academia and what is applied in practice does not only exist, but is also widening.

No later studies, focusing specifically on equity valuation, were found.

To the best of the author's knowledge, no gap analysis has yet been conducted on the specific application of multiples within the topic of equity valuations.
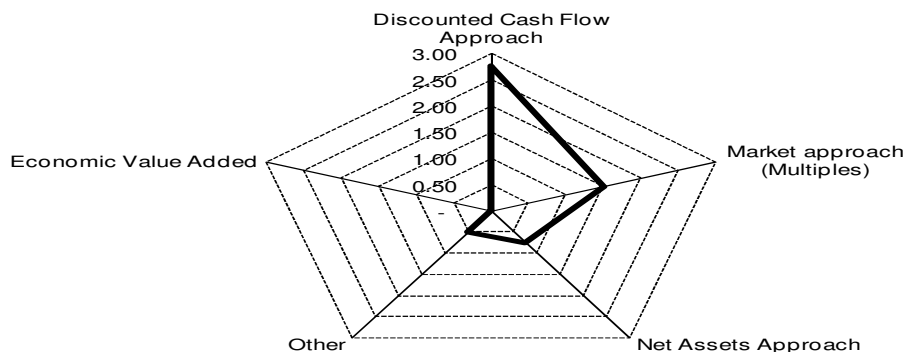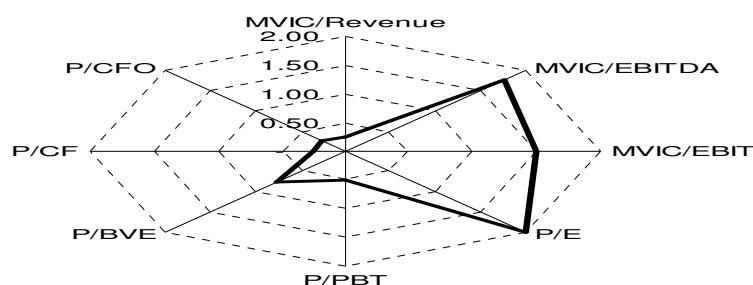
Figure 1. Equity valuation approaches that are used most frequently in practice in South Africa. Source: Adapted from PricewaterhouseCoopers (2008:13).

MVIC, also known as enterprise value (EV) - Market value of invested capital
EBITDA - Earnings before interest, tax, depreciation and amortisation
EBIT - Earnings before interest and tax
P/E - Price/Earnings ratio
P/PBT - Price/Pre-tax earnings
P/BVE - Price/Book value of equity
P/CF - Price/Earnings plus non-cash charges
P/CFO - Price/Cash flow from operations

Figure 2. Multiples that are used most frequently in practice in South Africa. Source: PricewaterhouseCoopers (2008:41).

RESEARCH METHODOLOGY

In order to achieve the objective of the research, a two - pronged approach was adopted:

(1) Establish academic consensus regarding multiples of choice;
(2) Establish how the multiples that were identified in (1) compare to the multiples that investment practitioners apply in practice.

In order to ascertain academic consensus regarding the use of multiples, a survey was conducted in 2008 at 12 universities in South Africa. The PwC survey will be used as a reflection of the preferences of investment practitioners in the marketplace.

Survey design and distribution

A survey was prepared and a link to an electronic database was emailed to five lecturers. Their feedback and recommendations were incorporated in the questionnaire and the database was cleared of these pilot responses. The final survey contained 25 questions and took approximately 15 min to complete. SAICA emailed a weblink to the questionnaire to chartered accountants who work in academia. An email reminder was sent out and responses were subsequently followed up telephonically.

Response rate

The questionnaire was sent to 446 chartered accountants in academia. Of these emails, 36 were returned to the sender as a result of invalid addresses. A potential target audience of 81 lecturers opened the email. This percentage may seem small at first glance, but it is important to bear in mind that not all lecturers in academia lecture finance. Only 54 lecturers currently lecture, or have in the past lectured, finance, as confirmed by the relevant divisions at the respective universities. The effective target audience at the universities therefore only consisted of 54 lecturers. A total of 35 lecturers of the potential 54 respondents completed the questionnaire. All completed questionnaires were usable,

constituting an effective response rate of 65%. Although in terms of absolute numbers 35 responses may seem small, it should be kept in mind that similar research conducted by PwC in 2008 yielded only 25 responses (PwC, 2008:1). The 35 responses originated from ten universities, which render them representative of the general thinking in academia regarding the topic of equity valuations. The fact that SAICA supported the research initiative decreases the likelihood that a higher number of responses would have been achieved in any other cost - effective way.

Profile of participants

The participants in the academic survey were suitably qualified lecturers with ample lecturing experience on the topic of valuations. All the participants were members of SAICA. In addition, 80% of the participants held masters degrees, of whom 20% also held PhDs. The profile of the lecturers who participated in terms of qualifications and finance - specific lecturing renders the results useful. Accordingly, one can conclude that the participants in the survey constituted a strong academic knowledge base to respond to the questions regarding equity valuations.

Survey questions

The academic survey was divided into three sections. The first section dealt with specific equity valuation methods, such as the free cash flow model and multiples. Section two focused on the discount rate, posing questions regarding the most appropriate method for calculating the discount rate and specific questions regarding the Capital Asset Pricing Model. The third section covered the profile of the participants. This paper will focus on the first and third sections of the questionnaire, while the remaining section will form part of further research. It is important to bear in mind that the results are merely a reflection of the beliefs and opinions of chartered accountants in academia. The emphasis of this paper falls on four questions in the survey that were designed to establish which multiples should, according to academic thinking, be used most frequently in practice when valuing a minority and/or a majority interest in an entity's equity. The questions focused on specific multiples which should be used most frequently:

(1) As primary equity valuation methods for valuing minority interests in an entity's equity;
(2) As primary equity valuation methods for valuing majority interests in an entity's equity;
(3) As secondary equity valuation methods for valuing minority interests in an entity's equity;
(4) As secondary equity valuation methods for valuing majority interests in an entity's equity.

Respondents were asked to indicate how frequently the respective multiples should be used on a scale of 0 to 4, where 0 indicates that the method is never used, 1 indicates that the method is almost never used, 2 indicates the method is sometimes used, 3 indicates that the method is almost always used, and 4 indicates that the method is always used. The survey results discussed in this paper reflect those alternatives that respondents indicated should always or almost always be used in practice, which is the percentage of respondents who answered 3 or 4.

EVIDENCE FROM THEORY

Although the literature review revealed that multiples are not generally regarded as suitable primary equity valuation methods

(Fernándes, 2001:2, Courteau et al., 2003:24), they are used extensively in practice. According to Damodaran (2002:59), approximately 90% of valuations are relative valuations and 50% of acquisition valuations rely on a combination of multiples and comparable companies. Although multiples are used extensively in practice, they are used in conjunction with other valuation methods. Most analysts have preferences for certain primary equity valuation methods, which are checked for plausibility against equity values obtained from other methods such as multiples (Liu et al., 2002:1; Bhojraj and Lee, 2002:407). In order to determine how well these preferences are aligned with the multiples that lecturers advocate in academia, it is necessary to ascertain academic consensus regarding the use of multiples.

Multiples used as primary equity valuation methods to value a minority interest in an entity's equity

The first question required respondents to indicate which multiples should be applied most frequently in practice as primary equity valuation methods when valuing a minority interest in an entity. The multiples that should be applied most frequently as primary equity valuation methods in practice when valuing a minority interest in an entity's equity, according to academic thinking, are presented in Figure 3.

As Figure 3 illustrates, very few of the respondents were of the opinion that multiples are suitable primary minority equity valuation methods. Only 31% of the respondents indicated that the P/E ratio should be used frequently, compared to 20% who favoured the PEG ratio and 13% who favoured the P/FCF ratio. Less than 10% of the respondents favoured each of the other multiples.

### Multiples used as primary equity valuation methods to value a majority interest in an entity's equity

The second question required respondents to indicate which multiples should be applied most frequently in practice as primary equity valuation methods when valuing a majority interest in an entity. The multiples that, according to academic thinking, should be applied most frequently as primary equity valuation methods in practice when valuing a majority interest in an entity's equity are presented in Figure 4.

As is evident from Figure 4, the P/E ratio is the only multiple that the majority of the respondents (77%) agree is the superior primary multiple when valuing a majority equity stake. Distant second and third best alternatives are the PEG ratio (46%) and the P/FCF ratio (43%). According to 38% of the respondents the EV/FCF and the EV/EBITDA ratios should be used frequently in practice. Academia has less regard for the M/BVE ratio and the P/BVE ratio as primary majority equity valuation methods, as only 23% of the respondents agreed that these multiples should be used frequently in practice. Multiples that garnered little support were the EV/BVE ratio (15%), the EV/S ratio (15%) and the P/S ratio (7%).

Multiples used as secondary equity valuation methods to value a minority interest in an entity's equity

The third question required respondents to indicate which multiples should be applied most frequently in practice as secondary equity valuation methods, when valuing a minority interest in an entity. The multiples that, according to academic thinking, should be applied most frequently as secondary equity valuation methods in practice when valuing a minority interest in an entity's equity are presented in Figure 5.

Figure 5 indicates that the P/E ratio is the only multiple that the
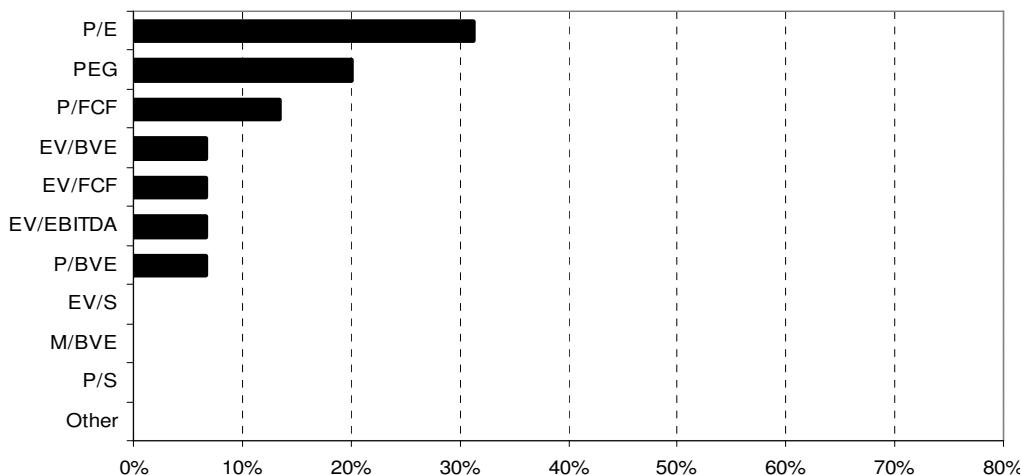
P/E - Price/Earnings
PEG - Price/Earnings growth
P/FCF - Price/Free cash flow
EV - Enterprise Value, also known as market value of invested capital (MVIC)
BVE - Book value of equity
EBITDA - Earnings before interest, tax, depreciation and amortisation
P/BVE - Price/Book value of equity
EV/S - Enterprise Value/Sales
M/BVE - Market value/Book value of equity
P/S - Price/Sales

Figure 3. Multiples that, according to academia, should be used most frequently as primary equity valuation methods to value a minority interest. The selection of multiples was drawn from the literature review and is not exhaustive. However, respondents were afforded the opportunity to include any multiple they deemed appropriate under the "Other" category.
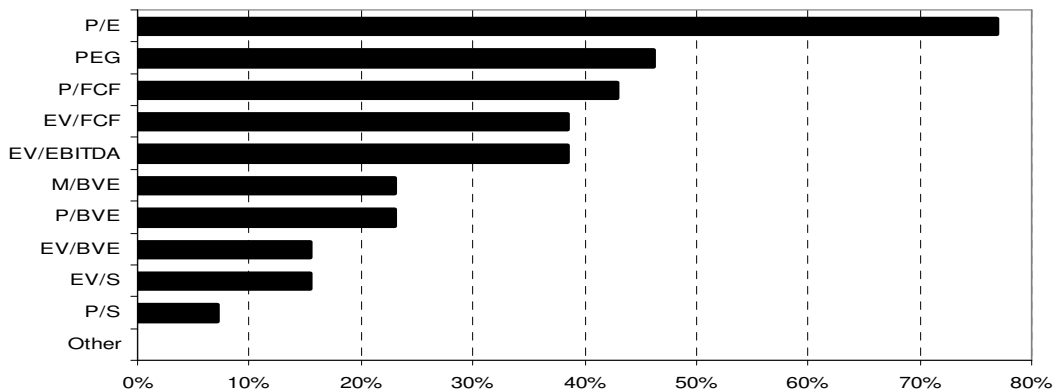
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P/BVE - Price/Book value of equity
EV/S - Enterprise Value/Sales
M/BVE - Market value/Book value of equity
P/S - Price/Sales

Figure 4. Multiples that, according to academia, should be used most frequently as primary equity valuation methods to value a majority interest.

P/E - Price/Earnings
PEG - Price/Earnings growth
P/FCF - Price/Free cash flow
EV - Enterprise Value, also known as market value of invested capital (MVIC)
BVE - Book value of equity
EBITDA - Earnings before interest, tax, depreciation and amortisation
P/BVE - Price/Book value of equity
EV/S - Enterprise Value/Sales
M/BVE - Market value/Book value of equity
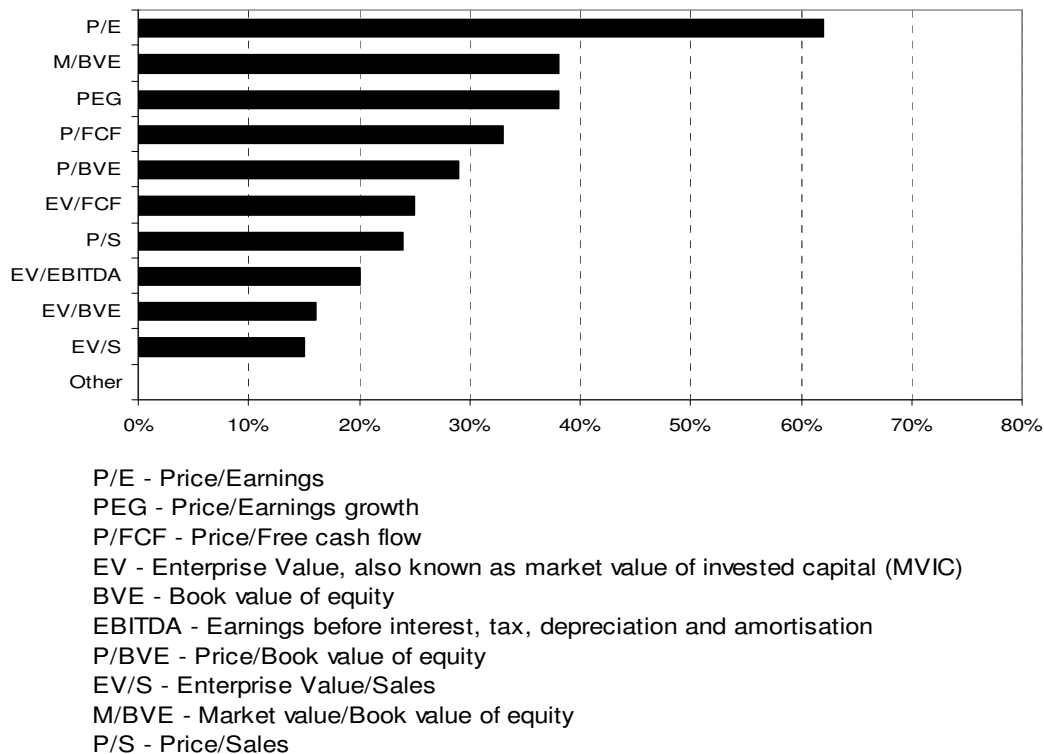P/S - Price/Sales

Figure 5. Multiples that, according to academia, should be used most frequently as secondary equity valuation methods to value a minority interest.

majority of the respondents (62%) agree is the superior secondary multiple when valuing a minority equity stake. Less than half of the respondents (38%) indicated that the M/BVE ratio and the PEG ratio should be used frequently, while 33% were of the opinion that the P/FCF ratio should be used frequently. The P/BVE ratio was less popular, with 29% of the respondents indicating that it should be used frequently in practice. Multiples that garnered little support from academia were EV/FCF (25%), P/S (24%) and EV/EBITDA (20%). Only 16 and 15% of the respondents favoured the EV/BVE and EV/S ratios, respectively.

Multiples used as secondary equity valuation methods to value a majority interest in an entity's equity

The fourth question required respondents to indicate which multiples should be applied most frequently in practice as secondary equity valuation methods, when valuing a majority interest in an entity's equity. The multiples that, according to academic thinking, should be applied most frequently as secondary equity valuation methods in practice when valuing a majority interest in an entity's equity are presented in Figure 6.

As Figure 6 illustrates, the majority of academia favours the P/Eratio, as 75% of the respondents indicated that this method should be used most frequently as a secondary equity valuation method in practice when valuing a majority equity stake, followed by the P/FCF ratio at 65% and the PEG ratio at 55%. These rankings are similar to the ranking with the minority interests, with the exception that the joint second most popular multiples preferred for minority valuations are the PEG ratio and the M/BVE ratio,

whereas the P/FCF ratio is the second most popular choice for majority valuations. The remaining multiple with a cash flow value driver was the EV/FCF ratio, which, according to 47% of the respondents, should be used frequently in practice. Academia appears to have less regard for ratios based on book value as 45, 30 and 26% of the respondents agreed that the M/BVE ratio, P/BVE ratio and EV/BVE ratio, respectively, should be used frequently in practice. Only 37, 25 and 21% of respondents favoured the EV/EBITDA, P/S and EV/S ratios, respectively.

Survey results compared to evidence from research

From Table 1 it can be deduced that survey respondents regard multiples as more appropriate for the valuation of a majority interest *vis-à-vis* a minority interest. Columns 3 and 6 quantify, for the primary and secondary equity valuation methods, respectively, the magnitude of academic preference for the specific multiples as a majority, as opposed to a minority, valuation method. On average, the multiples listed in Table 1, garnered 261 and 47% more support, respectively, as majority valuation methods than minority valuation methods.

Similarly, from Table 2, it is clear that respondents regard multiples as more appropriate as secondary valuation methods *vis-à-vis* primary valuation methods. Columns 3 and 6 quantify, for the minority and majority
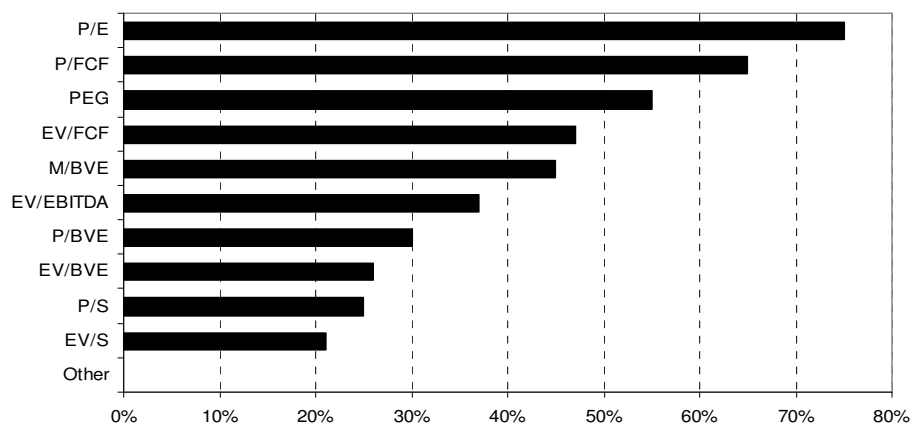
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P/BVE - Price/Book value of equity
EV/S - Enterprise Value/Sales
M/BVE - Market value/Book value of equity
P/S - Price/Sales

Figure 6. Multiples that, according to academia, should be used most frequently as secondary equity valuation methods to value a majority interest.

Table 1. Academic preference for multiples as majority valuation methods.

Multiple	Primary valuation method			Secondary valuation method		
	Minority (%)	Majority (%)	Majority > Minority (%)	Minority (%)	Majority (%)	Majority > Minority (%)
	1	2	3	4	5	6
P/E	31	77	146	62	75	21
PEG	20	46	131	38	55	44
P/FCF	13	43	221	33	65	95
EV/FCF	7	38	477	25	47	89
M/BVE	0	23	NA	38	45	18
EV/EBITDA	7	38	477	20	37	84
P/BVE	7	23	246	29	30	5
EV/BVE	7	15	131	16	26	67
P/S	0	7	NA	24	25	5
EV/S	0	15	NA	15	21	40
Other	0	0	NA	0	0	NA
Average			261			47

equity valuation methods, respectively, the magnitude of academic preference for the specific multiples as a secondary, as opposed to a primary, valuation method. The multiples listed in Table 2, on average, garnered 183 and 57% more support, respectively, as secondary valuation methods than primary valuation methods. The

latter phenomenon is consistent with research findings by Liu et al. (2002:1) and Bhojraj and Lee (2002:407), which indicated that multiples are more suitable as secondary valuation methods. Since the PwC survey did not distinguish between multiples that are more appropriate for the valuation of minority and majority interests, the

Table 2. Academic preference for multiples as secondary valuation methods.

Multiple	Minority interest (%)			Majority interest (%)		
	Primary	Secondary	Secondary > Primary	Primary	Secondary	Secondary > Primary
	1	2	3	4	5	6
P/E	31	62	98	77	75	-3
PEG	20	38	90	46	55	19
P/FCF	13	33	150	43	65	52
EV/FCF	7	25	275	38	47	23
M/BVE	0	38	NA	23	45	95
EV/EBITDA	7	20	200	38	37	-4
P/BVE	7	29	329	23	30	30
EV/BVE	7	16	137	15	26	71
P/S	0	24	NA	7	25	250
EV/S	0	15	NA	15	21	37
Other	0	0	NA	0	0	NA
Average			183			57

Table 3. Academic preference for the use of specific multiples.

Multiple	Primary valuation method		Secondary valuation method		Average (%)
	Minority interest (%)	Majority interest (%)	Minority interest (%)	Majority interest (%)	
P/E	31	77	62	75	61
PEG	20	46	38	55	40
P/FCF	13	43	33	65	39
EV/FCF	7	38	25	47	29
M/BVE	0	23	38	45	27
EV/EBITDA	7	38	20	37	25
P/BVE	7	23	29	30	22
EV/BVE	7	15	16	26	16
P/S	0	7	24	25	14
EV/S	0	15	15	21	13
Other	0	0	0	0	0

average of the results from Figures 3 - 6 was calculated in Table 3 for comparative purposes. The three multiples with earnings-based value drivers are the P/E ratio, the PEG ratio and the EV/EBITDA ratio. Table 3 indicates that academia concurs that the P/E ratio is the superior multiple, with 61% of the respondents, on average, across all four categories (primary minority and majority and secondary minority and majority) attesting to this. The P/E ratio is also the only multiple to hold the most popular position across all four categories. The evidence in support of the popularity of the P/E ratio should, however, be viewed with caution, since research has shown that the superiority of the P/E ratio does not apply to all industries of the economy, that is different multiples are suitable for different sectors in the economy (Barker,

1999:414; Nel, 2009:111). The evidence also suggests that the PEG ratio is the second most popular choice, on average, as selected by 40% of the respondents. Only 25% of the respondents indicated that the EV/EBITDA ratio should be used frequently.

The two multiples with cash flow value drivers are the P/FCF ratio and the EV/FCF ratio. The P/FCF was, on average, the third most popular multiple, followed by the EV/FCF multiple, according to 39 and 29% of respondents respectively. Multiples based on book values were, on average, not very popular among academia, as only 27% of academia indicated that the highest scoring book value - based multiple, the M/BVE ratio, should be used frequently. Only 22 and 16% of the respondents indicated that the other two book value -

based multiples, P/BVE and EV/BVE, should be used frequently. Multiples based on sales performed the worst in the survey. The two sales-based multiples, P/S and EV/S, received support from only 14 and 13% of the respondents, respectively. Academia's preferences, as summarised in Table 3, are well aligned with research findings. Academia's order of preference in terms of value drivers, on average, is earnings - based multiples, cash flow - based multiples, book value -based multiples, and sales - based multiples, which is supported by research (Liu et al., 2001:153; Liu et al., 2002:23; Abukari et al., 2000:22; Cheng and McNamara, 2000:367; Volker and Richter, 2003:216). The question is: To what extent does academic consensus regarding the use of multiples concur with the multiples that are currently applied in practice in South Africa?

GAP ANALYSIS

The results of the academic survey, when compared to that of the PwC survey, revealed that academic thinking and investment practitioners' preferences regarding the use of multiples differ more frequently than they concur. Four of the six multiples (with four different value drivers) that were compared indicated significant differences. However, despite their differing opinions, academia and investment practitioners agree on the use of certain multiples and the importance of certain value drivers.

Similarities

The majority of academia (61% on average) and investment practitioners (67%) agree that the P/E ratio should be used most frequently in practice. Academia (22%) and investment practitioners (25%) also agree on the popularity of the P/BVE ratio. The results of the respective surveys are compared in Table 4. The Gap column in Table 4 indicates the extent of the difference in emphasis between academia and investment practitioners with regard to the use of certain multiples. A negative percentage implies that a multiple is used more frequently in practice than academia would advocate, while a positive percentage implies that academia places a greater emphasis on the multiple than investment practitioners. The P/E ratio and the P/BVE ratio display a relatively small gap (-9% and -13%, respectively), which means that academia and investment practitioners have a similar regard for these two multiples.

Table 4 confirms that academia and investment practitioners' preference for certain value drivers are well aligned with research findings. The majority of academia and investment practitioners clearly place a great deal of emphasis on earnings - based multiples, as earnings - based multiples garnered the most support from academia and investment practitioners. Similarly,

academia and investment practitioners have a similar disregard for sales-based multiples, with both parties indicating that it is the least preferred value driver.

Differences

Although the respondents from academia and practice seem to agree that the P/E ratio is the most preferred multiple, they differ somewhat regarding the second and third positions. The second and third most popular multiples that investment practitioners use are the MVIC/EBITDA ratio and MVIC/EBIT ratio, while academia, on average, favour the PEG ratio and the P/FCF ratio, as their second and third best alternatives. One of the major discrepancies between academia and investment practitioners lies in the use of the MVIC/EBITDA ratio and the MVIC/EBIT ratio. Although investment practitioners use the MVIC/EBITDA ratio frequently in practice (58%), only 25% of the respondents from academia indicated that they preferred the EV/EBITDA ratio, which is essentially the same as the MVIC/EBITDA ratio. Similarly, investment practitioners use the MVIC/EBIT ratio (50%) fairly frequently in practice. The gaps between academia and practice are therefore -128 and - 96%, respectively, indicating that these two multiples are used far more frequently in practice than academia may suggest.

Academia and investment practitioners also differ regarding the use of multiples based on cash flow value drivers. A significant portion of academia (39%) regards P/FCF as a multiple that should be used frequently in practice, followed by the EV/FCF multiple, which was supported by 29% of the respondents, on average. In contrast, investment practitioners place very little emphasis on cash flow-based multiples, with both P/CFO and P/CF scoring a negligible 8% in the PwC survey. This constitutes a 79% gap between academia and practice, possibly indicating that academia places a higher premium on cash flow - based multiples than investment practitioners. Although academia and investment practitioners agree that sales is the least preferred value driver base for multiples, academia places a higher value on sales-based multiples as 14% and 13% of the respondents, on average, support the EV/S multiple and the P/S multiple, respectively, compared to the MVIC/S multiple that scored an 8% in the PwC survey. The gap between academia and practice is 43%, possibly indicating that academia has a higher regard for sales-based multiples than investment practitioners.

SUMMARY AND CONCLUSIONS

The research was aimed at establishing whether there is a gap between the multiples that are preferred by

Table 4. Gap analysis between the use of multiples in academia and practice.

Multiple	Academia	Practice**	Gap	Value driver	Similar/Different
P/E	61%	67%	-9%	Earnings	Similar
PEG*	40%	NI	NA	Earnings	
EV/EBITDA	25%	58%	-128%	Earnings	Different
EV/EBIT***	NI	50%	-96%	Earnings	Different
P/PBT*	NI	17%	NA	Earnings	
P/FCF	39%	8%	79%	Cash flow	Different
EV/FCF*	29%	NI	NA	Cash flow	
P/BVE	22%	25%	-13%	Book value	Similar
M/B*	27%	NI	NA	Book value	
EV/BVE*	16%	NI	NA	Book value	
EV/S	14%	8%	43%	Sales	Different
P/S*	13%	NI	NA	Sales	

* These multiples were not included (NI) in both surveys and therefore a direct comparison was somewhat obscured.
** The PwC frequency scores were converted to percentages for comparative purposes.
***Although the EV/EBIT ratio was not presented in the list of options to the survey participants, research found that EBITDA generally outperforms EBIT as a value driver (Baker and Ruback, 1999:19; Lie and Lie, 2002:53). Accordingly, the 25% support that EV/EBITDA garnered from academia was used as a proxy for EV/EBIT.

academia and the multiples that are used in practice. In order to achieve this objective, current academic thinking regarding the use of multiples was compared to the frequency with which multiples are currently used in practice in South Africa. The findings were based on the beliefs and opinions of chartered accountants, which constitutes a specific target audience within the broader academic environment. One could be inclined to argue that, since there are members of the academic community who lecture valuations who are not chartered accountants, the target audience was narrowly defined, which may have obscured the generalisation of the results. However, since valuations is a key application area in finance and in the SAICA syllabus in particular, as in most other finance syllabi, the research results contribute to the continued development of the academic environment responsible for the training of future chartered accountants. The broader academic environment may have similar concerns regarding valuations, which were not included in this study. This is an area for further research. The research results confirmed and contradicted the existence of a gap between theory and practice. Academia and investment practitioners seem to both agree and disagree regarding the use of multiples. In terms of the use of specific multiples, they agree that the P/E ratio is the superior multiple, a fact which was reflected by the relatively small gap of -9% between academia and practice. Academia and investment practitioners also concur that the P/BVE ratio should not be used frequently in the valuation of equity, constituting a -13% gap.

In terms of value drivers, academia and investment practitioners agree that multiples that are based on earnings are the multiples of choice, a sentiment which is in line with research findings. Similarly, academia and investment practitioners agree that sales-based multiples should be used least frequently, which is supported by research indicating that multiples based on sales perform the least accurate equity valuations.

However, in terms of the use of specific multiples, academia and investment practitioners disagree regarding the use of EV/EBITDA, EV/EBIT, P/CF and the EV/S multiples. A major discrepancy between academia and investment practitioners lies in the use of the EV/EBITDA and EV/EBIT ratios. The gaps between academia and practice for EV/EBITDA and EV/EBIT were -128% and -96%, respectively. Similarly, the gaps between academia and practice regarding the frequency of use of P/FCF and EV/S were 79% and 43%, respectively. These findings reflect a significant difference between the preferences of academia and investment practitioners. Although academia and investment practitioners agree that earnings are the most popular value driver and that sales are the least popular value driver, they disagree on the importance of book value and cash flow value drivers. According to academia, cash flows are the second most important value driver, followed by book value. However, investment practitioners regard book value as the second most important value driver, and cash flow, together with sales as the least. The frequency scores by investment practitioners indicate that they place three times more

emphasis on multiples based on book values than those based on cash flows. Academia, on the other hand, favours cash flows approximately 55% more, on average, than book values, according to the results of the survey. This paper has highlighted the need for academia and investment practitioners in South Africa to converge on mainstream valuation practices, a phenomenon that is common in developed markets. To this end, academia would do well to inform their students of the popularity of the EV/EBITDA and EV/EBIT ratios, for example, since they are employed frequently by leading financial analysts and corporate financiers. These multiples, to the best of this author's knowledge, do not feature in academic textbooks such as Financial Management (Correia et al., 2007), Managerial Finance (Vigario, 2008) or Fundamentals of Corporate Finance (Firer et al., 2004). As is evident from the survey results, these multiples are not advocated in lecture halls either. One may be inclined to argue that countless multiples are used in practice and that it is impossible for academia to cover all of them. However, it seems reasonable to expect that academia and students should at least be familiar with multiples such as EV/EBITDA and EV/EBIT, which investment practitioners use almost as frequently as the P/E ratio.

Similarly, investment practitioners should perhaps take note of the frequency of the use of value drivers based on book value and cash flows, for example, since the latter, which academia rated as the second best value driver, did not garner much support from investment practitioners, although research indicates that cash flows and book values are interchangeable as value drivers. This study may be viewed as a first step to converge academic thinking regarding the use of multiples as valuation methods. As such, the research results provide an insight and guideline to finance lecturers and investment practitioners, in terms of the perception in academia regarding preferred multiples. The second step entails the convergence of mainstream valuation practices between academia and investment practitioners. The results indicate that, although academia and investment practitioners agree on the use of certain multiples and value drivers, they disagree significantly on the use of others.

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