Valuation Methodologies Used In Emerging Markets versus Developed Markets

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This research is based on a recent study published in the European Accounting Review in 2008 (Imam et al., 2008) on valuation methodologies used in developed markets and suggests different results for valuation methodologies used in emerging markets like 1) less use of sophisticated valuation methodologies; 2) multiples valuations will need to be supported by other valuation methodologies; and 3) DCF valuations will tend to be extensively used in almost every valuation conducted. Results of the empirical work confirm the three hypotheses suggested above.

1. Introduction

A paper published in the European Accounting Review in 2008 (Imam et al., 2008) analyzes the valuation methodologies used in the UK to explore what methods are used by investment analysts in their valuations, why they use those models and how they use them. The findings of the paper suggest a balanced use between sophisticated and unsophisticated valuation methodologies, the regular use of multiple valuations as main valuation techniques, and an above average use of DCF valuations techniques among other results.

Even though the researchers believe the results of the paper would be relevant and valid for developed markets, it is suggested that emerging markets specificities would lead to less use of sophisticated valuation methodologies due to the lack of education about them; multiples valuations will need to be supported by other valuation methodologies due to the little number of listed companies, and the lack of available information on unlisted companies; and DCF valuations will tend to be extensively used in almost every valuation conducted due to the high growth associated with emerging markets that could not be reflected by comparable valuations with data coming from other markets.

The above three hypothesis are tested empirically through a setup very close to the paper by Imam et al. (2008) through five in-depth interviews with managers from financial institutions in emerging markets (mainly the MENA region) followed by 31 surveys with research analysts from financial institutions in emerging markets (mainly MENA region). The research design was specifically setup close to the Imam et al. research to be able to compare findings and come up with differences between the use of valuation methodologies in emerging markets versus developed markets.

Results of the empirical work confirm the three hypotheses suggested above.

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2. Literature Review

2.1 General Overview on Valuations

Valuations and forecasting stock prices matter a lot in finance as they represent one of the drivers of the value perception of the corresponding companies stock. That in turns impacts the price of a stock as it gets initially listed, and for its on-going trading price levels.

Research suggests that accuracy of valuations is of prime importance to build the reputation of the financial institution that issues the stocks' recommendations based on their own valuations of the corresponding stock (Newsome, 2005). Some research even recognizes the importance of accurate valuations on the career of analysts (Michael et al., 1999) by analyzing the higher analysts turnover in financial services companies whenever they score low on forecast accuracy compared to the eventual stock prices they have been forecasting, in line with other research findings confirming motivation on the two extremes (rewards through promotions and bonuses as well as punishment) that analysts face based on their forecast accuracy (Clement and TSE, 2005; Hong et al., 2000;and Hong and Kubik, 2003).

But it is important to realize on the other hand that valuation is more of an art than a science, as there is no right or wrong valuation. Valuation is a reflection of the value of the company, depending on so many variables and comparable companies that impact the results of each and every valuation methodology used.

A body of literature acknowledges the inaccuracy of all valuation methodology generally speaking. The paper by Harper and Rose (1993) analyzes actual appraisals, financial data, and the sale prices for 258 companies, suggesting that valuation estimates are sensitive to both the methodology used and the background of the analyst making the valuation. One of the findings was that buy-side analysts tend to undervalue shares, while sell-side analysts tend to overvalue shares. Other research takes a deeper look at this element (Newsome, 2005) analyzing how sell-side securities analysts contrast with buy-side security analysts. A buy-side security analyst typically works at a mutual or pension fund providing research for portfolio managers and other money managers to make recommendations on securities to but/sell. A buy-side analyst's research is proprietary to their financial services firms. Unlike a sell-side analyst whose work is typically is widely distributed among investors, a buy-side analyst's research is used only by their firm and does not reach the general public in most cases. While sell-side analysts used to be perceived as objective in providing their opinions, they have increasingly become involved in marketing the broker's investment banking services.

As markets have declined, and with the downfall of Enron, there is increased public concern about the conflicts of interest arising from this situation (Newsome, 2005). Findings of this paper are in line with other later research (Kolasinski and Kothari, 2008) that suggests a conflict of interest for buy-side analysts too also as they represent the goal of their clients to obtain as low a valuation of the target as much as possible, so it is normal that their execution ability will be compromised if it they are bullish on the target. Hence, investment banking employing analysts with bullish priors about a certain target firm would be less likely to be selected by a potential

acquirer. Thus, selection bias predicts that analysts affiliated with the acquirer will be pessimistic about the target and analysts associated by the target firm will be optimistic about the target.

Other non-tangible elements are seen to impact valuations like the herding behaviour of analysts, as well as experience of analysts leading them to boldness, the more experienced the analyst is, the more bold he/she becomes in issuing their recommendations that might not be in line with the rest of the market's expectations (Clement and TSE, 2005).

One of the intangible factors seen to affect valuations is the international diversification of the business. The paper by Duru and Reeb (2002) provides theory and evidence that analysts' earnings forecasts are more optimistic for firms with less predictable earnings in line with prior findings (Lim, 2001; and Das et. al., 1998). According to the paper by Duru and Reeb (2002) the link between international diversification and the unpredictability of earnings is that analysts typically have more knowledge about their home countries much more than they know about foreign countries, suggesting that they are likely to have less information about a firm's foreign operations (Ashbaugh and Pincus, 2001) with different cultures, customs, competitors, geographic features, and regulations. Thus the analysts have less-specialized knowledge of foreign markets that they can use to analyze and understand a firm's position within the market versus other competitors. These cultural differences, geographic constraints, differing legal systems, and language differences increase the difficulty of forecasting operations internationally diversified. Another non-tangible factor that affects valuations is the marketability of an asset (Bajaj et al., 2001). According to the paper, marketability of an asset "refers to the degree to which an asset can be converted to cash quickly, without incurring large transaction costs or price concessions". All else equal, the more marketable an asset, investors will thus be willing to pay more for a marketable asset. Marketability value is measured by the difference in present value between selling the asset right now versus later on. Marketability discounts vary from 20-45% based on method used, 45% for pre IPO compared to post IPO situations, 20% when comparing a publicly traded company versus a privately owned one. Buyers ask for a corresponding discount to the opportunity cost lost to liquidate the asset later on. Large assets are usually less marketable in most situations. In general, investors value marketability, therefore, investors will pay more for an asset that is readily marketable than an identical asset that is not. The usual valuation methodologies, which utilize cash flows or market transactions, do not properly account for the marketability of a company. Hence, in order to value an asset that is not marketable, the usual approach is to value the asset as if it were marketable, then apply a marketability discount to this estimated value. The challenge lies in determining the appropriate discount to be applied in such situation according to the paper.

Another non-tangible factor affecting valuations according to Valliere et al. (2008) is prior relationships between buyer and seller. The study undertook an exploratory investigation of pricing of M&A deals and the effects of prior relationships between buyer and target firm, at multiple levels of analysis with the objective to identify the potential impact of various forms of prior relationship on the prices paid by buyers, and to begin to understand which specific prior relationships are associated with higher prices due to lower information asymmetries. At the industry level, these prior relationships may include supplier, customer, competitor, and complement

relationships. At the firm level, they may include partnerships and alliances, and prior investments. The results of the study suggest prior relationships to increase the deal closing price, as well as accelerate the process, and finally increase the probabilities of closing the transaction. Reasons for the positive impact explained before is that the knowledge of the target company makes the buyer sure of the information supplied by the target leading to higher valuations, and that prior alliance or JV also reduces information asymmetry. Through prior relationships, the acquiring party can develop a basis for reliably assessing the value of the target company, without extra transaction costs (like a detailed due diligence process). Prior relationships can act to facilitate aspects of the due diligence process, especially in cases where the target firm assets are intangible to a large extent. Prior relationships can also act to reduce buyers' uncertainties whether post acquisition integration will be successful, and in acquiring new knowledge from the target company. Moreover prior successful interaction between both firms provides an indication of likely interaction after the acquisition. From this prior track record, the buyer can infer the expected reaction of the target company management, and thereby eliminate most of the uncertainty in the transaction (although some other essential transaction risks will still remain).

Another intangible element affecting valuations is negotiations as well as the macro-economical environment regarding liquidity available with direct buyers as well as institutional investors investing in company stocks according to the paper by Barrow et al. (2001). Quoting one of the interviews conducted ''We are very conscious of the fact that our valuation also depends on our competitors, given the high level of liquidity today, the valuation process is sometimes summarized in the price coming from the negotiation''(French VCs)

To conclude this introduction, valuations, despite their importance to the people who read them, to the financial services companies issuing them and to the career of the specific analyst coming up with them, they remain more of an art than a science with a very large degree of variability depending on the methodology used, assumptions taken, as well as many other non-tangible aspects like buy-side versus sell-side analyst subjectivity, herding behaviour, analysts prior experience, assets marketability, prior relationships, negotiations and the macro-economical environment (ex liquidity)….

2.2 Valuations in Emerging Markets Versus Developed Markets

The paper by Imam et al. (2008) published in the European Accounting review in 2008 analyzes the use of valuations in the UK to come up with what valuation methods are usually used by financial analysts, why they are used, and how they are used (stand-alone, or combined…) through 42 semi-structured interviews as well as content analysis of 98 analysts recommendation reports. The sample contains interviews with 35 sell-side analysts and 7 buy-side analysts. Analysts were asked to rate the importance they attached to valuation models on a 5-point Likert scale ranging from 'Extremely important' (5) to 'Not at all important. Regarding the ''how'' valuations methodologies are being used, the paper by Imam et al. (Imam et al., 2008) suggests that analysts develop their valuation using a combination of methodologies, and when there is a high disparity among them, they tend to use their subjective judgement on which method best reflects to price they expect to value a stock and start adjusting the other valuation methodology to reflect a close-by price, or pick the methodology that better reflects their expectation in terms of use

or as a percentage taken in the final valuation (not a simple averaging of the valuation methods). The paper further recognizes the combined use of both fundamental as well as technical analysis combined.

The many findings of this paper apply more to developed markets rather than emerging markets in line with the paper by Duru and Reeb (2002), recognizing the complexity of forecasting operations of a multinational diversified company that has some operations in developed markets and other operations in emerging markets, due to the difficulty of obtaining information, comparables, Betas… and other assumptions needed for valuations from emerging markets. Another paper by Barrow et al. (2001) suggests that the greater the expected rate of growth of the company, the greater the reliance on DCF valuations versus comparables. This could be explained by the difficulty of finding comparables when the rate of growth is very high. Further findings of the paper on the same point is that the younger the firm and smaller its turnover (revenues), the larger the use of DCF. Again, this may be related to the unavailability of convenient comparables.

Emerging markets differ from macro-economical point of view than developed markets, from the different perspectives highlighted below. The researchers have chosen Egypt, Algeria, Saudi Arabia and Syria as representatives of developing markets as they are among the largest economies in the MENA region, with the highest populations, and focus from different foreign direct investors. The UK, US, Canada and France were also chosen as representatives of developed economies as the Imam et al. (2008) paper bases its recommendations on work conducted in the UK, and as the four countries chosen were the basis of the work for Barrow et al. (2001).

3. Research Hypothesis

Three hypotheses were developed in this paper for developing markets versus the Imam et al. (2008) findings in developed markets:

Hypothesis 1: In emerging markets sophisticated valuation methodologies will be rarely used due to the lack of education about them with the exception of the DCF methodology.

Hypothesis 2: In emerging markets, multiple valuation methodology would not be used as stand-alone due to the lack of available comparables listed in the stock market and the lack of transparency as well as willingness to share data from the side of unlisted companies.

Hypothesis 3: Emerging markets valuations would extensively use DCF valuations due to the high growth that can only be reflected through DCF valuations versus comparable companies from other geographies.

3.1 Hypothesis 1: Sophisticated Versus Unsophisticated Methods

The paper by Imam et al. (Imam et al., 2008) compares the use of sophisticated valuation methods (DDM, DCF, EVA and CFROI) versus unsophisticated methods (PE multiple, Dividend Yield, Sales multiple, BV multiple, cash flow multiple, PEG,

EV/sales, EV/BV, EV/EBITDA). Results indicate a balanced use of sophisticated versus unsophisticated valuation methodologies with 2 sophisticated methodologies and 3 unsophisticated methodologies being rated as ''important'' or "extremely important". The paper suggests in the results section that "In general, neither sophisticated nor unsophisticated models dominate" Content analysis that Imam et al. (2008) conducted further reinforced those findings by finding sophisticated valuation methodologies dominant as they were used in 62 out of the 98 reports analyzed. The paper recognized DDM to be one of the sophisticated valuation methods (following DCF) usually used as a primary valuation methodology. Content analysis of the 98 reports suggest the dominance of sophisticated models in nearly two-thirds of cases (62 from 98 reports analyze), where sophisticated models dominate.

This study tends to differ in its point of view, as the researchers believe results would differ in emerging markets versus developed markets. Emerging markets have a level of general education much poorer of their developed counterparts. The Human Development Index (HDI) published by the UNDP 2010 (Arab Human Development Report), ranks Egypt as 101, Syria as 111 KSA as 55, and Algeria as 84, versus the US as 4, UK as 26, France as 14, and Canada as 8. The HDI is a statistic composed from data on life expectancy, education and per-capita GDP. The average years of schooling analyzed in the same document report the average years of schooling in 2009 to be 6.5 in Egypt, 7.8 in KSA, 7.2 in Algeria and 4.9 in Syria (averaging 6.6 years of schooling in the four selected emerging markets). On the other hand, the average years of schooling in 2009 are 12.4 in the US, 9.4 in the UK, 10.4 in France and 11.5 in Canada (averaging 11 years of schooling in the four selected developed markets). This lead of 65% more years of schooling in developed markets versus emerging markets best shows such difference in the level of general education between developed versus emerging markets. The same document reports the population with a-least secondary education (% of ages 25 and older) in 2009 to be 36% in Egypt, 33.5% in Syria, 48.8% in KSA and 89.7% in KSA; versus 89.7% in the US, 58.2% in the UK, 55.7% in France and 79.6% in Canada. The average population with at least secondary education thus averages 71% in the selected four developed markets versus 36% in emerging markets (almost double). The researchers argue that poor general education in emerging markets versus developed markets, highlighted above, would naturally lead to a much lower education on sophisticated finance topics like valuation methodologies, leading to a belief that emerging markets would use less sophisticated valuation methodologies than their developed counterparts, and that it will take years for more sophisticated valuation methodologies to reach emerging markets and become widespread in terms of usage.

3.2 Hypothesis 2: Multiple Valuations as Stand-Alone Valuation Methodologies

The paper by Imam et al. (Imam et al. 2008) recognizes PE multiple to be one of the most important valuation methodologies with 26 out of 42 interviews recognizing it as either ''extremely important'' or "important" 62% placing PE as important as DCF. Two multiple valuation methodologies came out of the research as being used as primary valuation methodologies (PE multiple and EV/EBITDA). Other studies have also stressed on the importance of PE multiples for valuations, such as those by Arnold and Moizer (1984) and Barker (1999a).

Some papers suggest the accuracy of multiple valuations over DCF on the basis of the errors inherent in forecasting a company's future performance as well as all the large number of assumptions that can lead to errors in a DCF valuation (Arnold and Moizer, 1984; Pike et al., 1993; Barker, 1999a, 1999b; and Block, 1999) using survey-based analysis. Other papers focusing on content analysis confirm the same (Demirakos et al., 2004; Bradshaw, 2002). Another paper by Lui et al. (2000) investigates the performance of a comprehensive list of multiples, and also examines a variety of related issues, such as the variation in performance across industries and over time and the performance improvement obtained by using alternative approaches to compute multiples. The paper suggests that while multiple valuations do not incorporate explicit projections and present value calculations, they rely on the same principles underlying the other approach: value is a function of future payoffs and risk. Therefore, multiples are used often as a substitute for comprehensive valuations, because they communicate efficiently the essence of those valuations. The paper also recognizes the use of multiples to complement comprehensive valuations, typically to calibrate those valuations and to obtain terminal values within those comprehensive valuations. According to paper by Barrow et al. (2001), VCs appear to rely predominantly on comparables approaches, with multiples as a first choice for 45% of VC in developed markets. VC methods of valuations are predominantly multiples of profit and EBITDA in UK and France followed by recent transactions, followed by DCF in terms of usage according to the same paper.

On the details on which multiple valuations work better, the paper by Lie and Lie (2002) analyzed active companies (financial and non financial) from the Compustat database at the time of the study. All of the financial data are from fiscal year 1998, whereas the earnings forecasts pertain to fiscal year 1999. The data were obtained from Standard & Poor's Research Insight, which includes data that are available in the conventional Compustat database as well as recent I/B/E/S earnings forecasts. The paper suggests several results: First the paper suggests that the asset multiple (BV multiple) provides, generally speaking, more precise and less biased estimates than do the sales and the earnings multiples. Second, although adjusting for companies' cash levels does not improve estimates of company value, using forecasted earnings rather than historical earnings does. Third, the EBITDA multiple generally provides better estimates than does the EBIT multiple. Finally, the accuracy of value estimates, as well as the relative performance among multiples, vary greatly by company size, company profitability, and the extent of intangible value in the company. The paper further suggests that all multiples yield estimates that are somewhat negatively biased. That is, the mean valuation errors are slightly negative and the median valuation errors are roughly zero. Last insight from the paper is that multiple valuations were more precise for large companies. For all company sizes, the asset multiple performed the best and the sales multiple performed the worst.

The researchers of this study believe the stand-alone use of multiple valuations reported in the Imam et. al. paper (2008) as well the other literature covered above would not apply in emerging markets due to the little number of listed companies in those markets, and the lack of available information on unlisted companies due to the general lack of transparency. Desk research conducted on different stock markets reveals a major discrepancy in the sophistication of stock markets between emerging and developed markets (Table 1). The four selected emerging markets

have stock markets averaging 17 years of existence, with an average of 95 companies listed with an average capitalization of 108B US$, versus 197 years of existence of stock markets in developed economies with an average of 5053 companies listed with an average capitalization of 5,306B US$. Those stark differences make it clear than stock markets are much younger (infancy stage) in emerging economies, have severely less companies listed to provide potential comparable companies per sector to be used in multiple valuations. It is argued that the lack of available comparable companies on emerging countries' stock markets would lead to the difficult use of multiple valuation methodologies as stand-alone, and that they would need to be supported by DCF valuation, or in most cases act as secondary valuation methodologies supporting the results coming from the DCF valuation methodology.

Table 1: Comparison of Stock Market Performance across Countries

STOCK MARKETS	Egypt	Syria	KSA	Algeria	US, NYSE	UK, London stock exchange	France, Euronext	Canada, Toronto stock exchange
Years stock market in operation	27	4	27	11	218	210	200	160
Companies listed on stock markets	213	18	145	3	8,000	2,713	8,000	1,498
Stock market capitalization in B US$	84	3	344	1	12,826	3,598	2,900	1,900

3.3 Hypothesis 3: DCF Valuation

Discounted cash flow (DCF) analysis, first discussed by Irving Fisher in 1930 and later on formalized by John Burr Williams (1938), is currently the most common valuation method for stocks and cash-generating companies (Messica, 2008). The method discounts the value of future cash flow to the time value of money and is basically an equivalent form of net present value analysis.

The paper by Imam et al. (Imam et al., 2008) recognizes DCF to be one of the important valuation methodologies with 26 out of 42 interviews recognizing DCF as either ''extremely important'' or "important". 62% would rate as medium/high importance for DCF as an important valuation methodology. The paper recognized DCF to be used as a primary valuation methodology in around half the reports analyzed (49 out of 98 reports analyzed) and played a secondary role in only 3 reports out of the 98. The total use of DCF in that case amounts to 53 out of 98 reports (53% of the cases) which would qualify as medium/high usage of this specific methodology consistent with the results of the interviews. One of the main reasons the paper attributes to the use of DCF valuations is clients expecting so: *"Everything we do is client-driven. Before I go on a road show, I need to ask myself – is the stuff I am showing relevant for investors? It would make no sense at all for me to make a case like . . . I will not show you DCF because I don't like DCF – but because I know everyone looks at DCF. I certainly feel that valuation should be geared towards what the investors need."* (Technology Analyst)

Several papers talk about the inaccuracy of DCF as a valuation methodology (Yee 2004; Lie and Lie 2002), because of uncertainty in future cash flows and the need to adopt a value for the equity risk premium within the CAPM model (Arnott and Bernstein, 2000; and Asness, 2000), ''DCF analysis inevitably leads to an imprecise answer''. Some papers tried to compare the DCF valuation methodology to the residual income method suggesting the latter to be a better methodology reflecting

the valuation of a company (Penman and Sougiannis, 1998; Francis et al., 2000; and Courteau et al., 2001). The paper by Harper and Rose (1993) realized a large difference between valuations made using DCF valuations for closely held companies versus the actual price of the company upon a transaction on the stock within 6 months stressing on the inaccuracy of DCF valuations. One of the papers criticizing DCF valuations on the basis of its failure to take account of important variables concerning strategy, quality of products and services, managers' abilities and skills, commitment, market knowledge, synergies, and joint costs, etc. Also, an analysis of the segment where the firm operates is disregarded, as well as interrelations among suppliers, customers, distributors, entry and exit barriers, intensity of rivalry are fundamental for evaluating firms. Discounted cash flow methods essentially neglect business, strategic and competitive factors which turn to be very important in determining a firm's value in real life. DCF techniques end up relying on two elements: cash flow and cost of capital, therefore valuation is a black box, where you do not know how numbers come from and justification is not given as to how those numbers derive from fundamental determinants and how they are integrated. One of the most important consequences of this lack of transparency is data's manipulation by financial advisors for companies (Magni et al., 2006). Furthermore the paper by Barrow et al. (2001) suggests multiples to better reflect valuations as stand-alone methodology, followed by a comparison with recent transactions, followed by DCF undermining the usage of DCF even in developed markets. The study gathered information by means of 82 semi-structured, in-depth interviews carried out with forty-two venture capitalists and forty underwriters in the four countries covered by the study (France, UK , Canada, and the US). For each of those four countries the process was to interview ten leading venture capitalists and ten underwriters (eight sub-groups) with a growth –company focus. The sample is characterized by a decent coverage of different types of firms helping in the generalization of results across developed markets: firms belong to seven industries and differ in age, size, profitability, and expected growth rates.

On the other hand other studies have stressed on the importance of DCF valuations (Demirakos et al., 2004) especially for highly growing companies. The paper by Thornton and Adams (2009) compares the DDM valuation methodology to the DCF approach and suggests the inaccuracy of the use of the DDM valuation methodology for highly growing ventures as they are not expected to generate dividends early on in their life-cycle, as well as dividend payments might be distorted by dividend pay-out, share buyback, and tax policies (Bondt, 2008). On the other hand the DCF methodology would more appropriately reflect the true value of the company through the terminal value on the other hand.

There is of course a disparity in the use of valuation methodologies among developed markets, for example French and Canadian VC use DCF more regularly than their British and American counterparts according to the paper by Barrow et al. (2001)

The researchers of this study argue that DCF valuation will be highly disseminated in emerging markets compared to developed markets in terms of usage due to the high growth of the former markets, leading to comparables being inaccurate and DCF being the most accurate reflection of the growth of those companies analyzed as suggested by the literature above. Index Mundi reports a GDP per capita at PPP in 2009 to be 4,900 US$ in Egypt growing at 7.2%, 4,700 US$ in Syria growing at

5.1%, 19,800 US$ in KSA growing at 4.2% and 6,600 US$ in Algeria growing at 3.5%. On the other hand Index Mundi reports a GDP per capita at PPP in 2009 to be 46,300 US$ in the US growing at 1.1%, 35,500 US$ in the UK growing at 0.7%, 32,800 US$ in France growing at 0.3% and 38,700 US$ in Canada growing at 0.4%. The numbers above can be summarized by an average GDP at PPP in 2009 to be 9,000 US$ in the four selected emerging markets growing at 5% on average, compared to a GDP per capita at PPP in 2009 of 38,325 US$ in developed markets growing at an average of 0.6%. Those major differences in the macro-economics of emerging markets versus developed markets, translate down to the micro-economics of the companies operating in those markets and reveal that companies operating in emerging markets are at an infancy stage on average compared to companies operating in developed markets, and are much prone to growth based on the overall growth of their national economies. This automatically makes the valuation of those companies differ in terms of valuation methodologies used to assess those companies, and make DCF as a valuation methodology the most appropriate in terms of usage in emerging economies to reflect such high growth, consistent with prior research (Demirakos et al., 2004).

4. Research Methodology

For the sake of this study, the researchers are analyzing the valuation methodologies used in the Imam et al. (2008) paper, and conducting empirical work in emerging markets only, extending the comparison to the Imam et al. (2008) paper as it was conducted in the UK (representing developed markets) and recently published in 2008. Therefore the same valuation methodologies analyzed by the former paper were followed, and the same survey of the Imam et al. (2008) paper was used, to simulate the exact same data gathering methodology. The only difference is that DCF was separated from sophisticated methodologies to give it the focus researchers deemed important, thus ended up with three categories of valuation methodologies to be analyzed:

- Traditional methodology: DCF
- Sophisticated methodologies: DDM, EVA and CFROI
- Unsophisticated methodologies: PE multiple, Dividend Yield, Sales multiple, BV multiple, cash flow multiple, PEG, EV/sales, EV/BV, EV/EBITDA

Analysts were asked to rate the importance they attached to valuation models on a 5-point Likert scale ranging from 'Extremely important' (1) to 'Not at all important' (5). Five in-depth interviews were run with top financial services companies in the MENA region, each covering more than 3 markets (to be considered regional) within the MENA region being EFG Hermes, Cairo Financial Holding, CI Capital, Pharos, and HSBC. The interviews were all open-ended interviews prompting the research managers of those companies on what valuation methodologies they regularly use, why they use them, and whether they use them stand-alone or combined. The interviewees were prompted further by asking about valuation methodologies they did not exclusively mention during the interviews.

The interviews were followed by 31 surveys that were filled by analysts working in those 5 financial institution as well as other regional finance houses not covered in the exploratory interviews like Beltone and Pioneers , asking them about general

data including name of the company, job title, focus sectors and number of years doing valuations, followed by a table listing the 13 valuation methodology under study, not in any particular order, asking them to rate them between 5-point Likert scale ranging from 'Extremely important' (1), 'Very important' (2), 'Important' (3), 'Not very important' (4) and 'Not important at all' (5), similar to the survey conducted by the Imam et al (2008) paper.

5. Data Analysis & Results

Correlation tests were run to test whether the results were skewed based on company, sector or years of experience doing valuations. The spearman correlation was used since the dependent variables (rating of the valuation methodologies used) are all nominal.

Results in Table 2 below indicate no obvious correlations, with all correlation coefficient not within the 5% significance level except for valuation years of experience impacting two valuation methodologies, the PEG, and the P/B. Therefore it was concluded no bias in the results based on company, sector or years of experience.

Table 2: Spearman Correlation Data Analysis

	DY: Dividend yield	DDM: Dividend discount model	DCF or FCF: Discounted cash flow model	CFROI: Price/cash flow	PE: Price Earning Ratio	PEG: PE scaled by earnings growth rate	P/B: Price to book value multiple	Price/sales : Prices to sales multiple	EV/EBITDA:	EV/BV: Enterprise value to book value multiple	EV/Sales: Enterprise value to sales multiple	EVA: Economic value added
Company	0.344	0.669	0.698	0.714	0.465	0.374	0.895	0.951	0.805	0.379	0.965	0.383
Sectors	0.523	0.43	0.712	0.675	0.589	0.291	0.216	0.951	0.057	0.97	0.283	0.799
Valuation years of experience	0.905	0.66	0.45	0.837	0.711	0.011	0.02	0.728	0.44	0.652	0.511	0.204

Correlation test were run measuring the sector growth on the valuation methodologies used, by transforming the sectorial growth into a new variable replacing the sectors, as demonstrated in Table 3 below,

Table 3: Growth of Different Sectors under Study

Sectors of focus		Growth
TMT	1	-0.80%
Building materials	2	11.37%
Industrial	3	-0.17%
Banking & Financial services	4	7.03%
Real estate	5	5.00%
FMCG	6	-5.07%
Generalist	7	5.80%
Other	8	

The results show no correlation between the sector growth on the valuation methodologies used as indicated in Table 4 below with all correlation coefficients below the 5% significance level. Therefore the researchers concluded no bias in the results based on growth of the different sectors.

Table 4: Correlation Analysis on Sector Growth

	DY: Dividend yield	DDM: Dividend discount model	DCF or FCF: Discounted cash flow model	CFROI: Price/cash flow	PE: Price Earning Ratio	PEG: PE scaled by earnings growth rate	P/B: Price to book value multiple	Price/sales : Prices to sales multiple	EV/EBITDA:	EV/BV: Enterprise value to book value multiple	EV/Sales: Enterprise value to sales multiple	EVA: Economic value added
Sector growth	0.29	0.206	0.181	0.482	0.96	0.524	0.668	0.569	0.413	0.297	0.453	0.688

Research then proceeded with analyzing the preferred methodologies used compared to the Imam et al. (2008) paper, Table 5 demonstrates the results,

Table 5: Comparison of Preferred Methodology Analysis

	Response count	Type	Extremely important	Very important	Important	Not very important	Not important at all
DY: Dividend yield	31	Unsophisticated	0.0% (0)	0.0% (0)	25.8% (8)	54.8% (17)	19.4% (6)
DDM: Dividend discount model	31	Sophisticated	0.0% (0)	0.0% (0)	25.8% (8)	58.1% (18)	16.1% (5)
DCF or FCF: Discounted cash flow model	31	Sophisticated	93.5% (29)	6.5% (2)	0.0% (0)	0.0% (0)	0.0% (0)
CFROI: Price/cash flow	31	Sophisticated	0.0% (0)	6.5% (2)	9.7% (3)	48.4% (15)	35.5% (11)
PE: Price Earning Ratio	31	Unsophisticated	35.5% (11)	58.1% (18)	6.5% (2)	0.0% (0)	0.0% (0)
PEG: PE scaled by earnings growth rate	31	Unsophisticated	3.2% (1)	6.5% (2)	22.6% (7)	48.4% (15)	19.4% (6)
P/B: Price to book value multiple	31	Unsophisticated	6.5% (2)	19.4% (6)	48.4% (15)	19.4% (6)	6.5% (2)
Price/sales: Prices to sales multiple	31	Unsophisticated	0.0% (0)	3.2% (1)	32.3% (10)	54.8% (17)	9.7% (3)
EV/EBITDA:	30	Unsophisticated	46.7% (14)	40.0% (12)	6.7% (2)	3.3% (1)	3.3% (1)
EV/BV: Enterprise value to book value multiple	31	Unsophisticated	0.0% (0)	3.2% (1)	6.5% (2)	61.3% (19)	29.0% (9)
EV/Sales: Enterprise value to sales multiple	31	Unsophisticated	0.0% (0)	0.0% (0)	19.4% (6)	54.8% (17)	25.8% (8)
EVA: Economic value added	30	Sophisticated	3.3% (1)	3.3% (1)	6.7% (2)	40.0% (12)	46.7% (14)

6. Conclusion

6.1 Hypothesis 1: Sophisticated versus Unsophisticated Methods

Survey analysis shown in Table 5 above indicate a very high importance associated with the traditional valuation methodology being the DCF, rated as ''extremely important'', but a low importance of the three sophisticated methodologies being DDM, CFROI and EVA ranging between ''not very important'' and ''not important at all'' in emerging markets. The Imam et al paper (2008) on the other hand, found a balanced use of both sophisticated versus unsophisticated methodologies, with two sophisticated methodologies and three unsophisticated methodologies being rated as ''important'' or "extremely important", suggesting that none of them dominate the analysis in developed markets.

The researchers conclude from the above analysis, that excluding DCF as the traditional valuation methodology (covered in a section of its own below), sophisticated methodologies of valuation, being DDM, CFROI and EVA, are not of any relevant importance in emerging markets versus developed markets. Interviews conducted further confirmed the above results of the lack of use of the three sophisticated methodologies mentioned above, except in special cases. Some exerts from the interviews mention:

'' DDM is used much less, and only for mature companies (cash cows) in the region like Sidi Kreir company listed on the Egyptian stock market'' HSBC head of research from 1997 to 2002

"Other sophisticated methodologies like CFROI and DDM never used, EVA used very rarely used" Head of MENA Telecoms Research at CI Capital
'' EVA only used by global financial institutions like HSBC" HSBC head of research from 1997 to 2002

"EVA and CFROI could apply also to mature companies, but rarely used in the MENA region" Head of Research, EFG Hermes

The reason that the researchers believe the three sophisticated methodologies under analysis are of much less use in emerging markets versus developed markets is the lack of education about them, both for the finance professionals as well as the audience reading the research reports, as indicated in the literature review section.

"Other sophisticated valuation methodologies like EVA and CFROI, were known to me, but I never use them due to their complexity and lack of awareness for the audience" Head of Research, Pharos Holding

6.2 Hypothesis 2: Multiple Valuations as Stand-Alone Valuation Methodologies

The paper by Imam et al. (Imam et al. 2008) recognizes multiple valuations as important stand-alone methodologies; two of them (PE and EV/EBITDA) being rated as either ''extremely important'' or ''very important'' in developed markets. The paper further recognizes both multiples mentioned before as primary valuation methodologies when combined with other valuation methodologies.

From the empirical results conducted above, both PE and EV/EBITDA, appear to have a lot of importance as either ''extremely important'' or ''very important'' directly following DCF in terms of importance as valuation methodologies. However the interviews conducted revealed that multiples are rarely used in emerging markets as stand-alone methodologies due to the lack of comparable companies listed in their corresponding stock markets, and the lack of available information on unlisted companies due to the general lack of transparency. Some exerts from the interviews below:

"Developed economies rely very much on multiple valuations, as they have more than 50 years historical figures to support multiples, unlike the case of emerging markets." HSBC head of research from 1997 to 2002

"EFG Hermes covers the whole MENA region, and uses DCF a sole methodology in 95% of their valuations, supported by some use of multiples as confirmatory only" Head of Research, EFG Hermes
"Multiples mainly used to determine a back of the envelope target price" Head of MENA Telecoms Research at CI Capital

"Due to the lack of local comparables on the Egyptian stock market, regional and global comparables are used to compensate for it. A median of comparables is used" Head of Research, Pharos

For the financial services companies who used a weighted average to valuate the companies, interviews revealed a much higher reliance on DCF as primary valuation methodology.

> *"70% of the weight of the final valuation comes from DCF, while 30% from multiples"* Head of Research, Pharos Holding

> *"DCF is being used as primary valuation method and complemented by multiples with the weight of 70/30 tilted more on DCF"* Partner, Cairo Financial House

Some specificity arose from the interviews conducted for certain multiples used more often based on the sector covered:

> *'' EBIT multiple used for more mature companies where depreciation and amortization are less"* HSBC head of research from 1997 to 2002

> *"PE is a more appropriate valuation methodology for the Gulf countries (GCC) versus Egypt, as they have a very low cost of debt, and almost zero taxation, making EV/EBITDA not being fair for comparison purposes"* Head of Research, EFG Hermes

6.3 Hypothesis 3: DCF Valuation

The paper by Imam et al. (Imam et al. 2008) recognizes DCF to be one of the important valuation methodologies with 62% of the interviews recognizing DCF as either ''extremely important" or "important" in developed markets which can be categorized as more than average reliance on DCF. Empirical work conducted above in emerging markets reveals the extreme importance of DCF as traditional valuation methodology, as it was rated as ''extremely important" in 94% of the interviews, while the rest of the interviewees recognized it as ''very important''. Some of the interviews further highlight the extreme reliance on DCF as a valuation methodology in emerging markets versus an above average reliance on DCF in developed markets:

> *"DCF being the most widely used in the region"* HSBC head of research from 1997 to 2002

> *"There is an overwhelming use of DCF as a primary valuation methodology in the MENA region for Pharos Holdings. One of the reasons is that both investment professionals as well as the audience reading the reports are well aware of it. Another reason is that DCF is proven all over the world and accepted as a ''good reflection of firm value"* Head of Research, Pharos

Extreme reliance on DCF is attributed as a valuation methodologies in emerging markets versus developed markets to the high growth of the firms analyzed that can properly reflected through a DCF valuation.

> *"Emerging markets rely much more on DCF as it reflects more appropriately a higher level of risk, and a higher growth, both specific to the emerging markets"* Head of Research, EFG Hermes

6.4 Other Findings

The interviews highlighted the importance of technical analysis of stocks versus the fundamental analysis, especially in MENA markets or other emerging markets since so many other non-fundamental factors affect valuations that are not a part of the equation in developed markets. According to the interview with a Partner in Cairo Financial Holding (CFH), many companies on the Egyptian stock market are traded at very odd valuations not reflecting any fundamental analysis (either much higher, or much lower sometimes even below asset valuation or replacement cost), due to the markets sentiments reigning over the trading prices, some of the non-fundamental factors affecting valuations mentioned in the interview are:

- The smaller capitalization of emerging markets, making them more sensitive to a sudden inflow or outflow of liquidity.
- Other stock market performances since half the money in the Egyptian stock market for example comes from foreigners who sell their stocks in Egypt to cover their margins in their main markets whenever things go wrong in their main markets
- The health of the Egyptian president! (before the 2011 revolution)
- The unstable macro-economical situation in some of those emerging markets
- Insider information still largely affecting the stock markets in emerging countries

6.5 Other Findings Related to the use of Valuation Methodologies

"Real estate companies valuation use a combination of DCF and NAV if there is no recurrent revenue stream" Head of MENA Telecoms Research at CI Capital

"An exception of the above is when valuing banks, as the book value multiple is used frequently as per international standards" Head of Research, Pharos Holding

7. Limitations and Suggestions

This paper mainly relies on the recent paper by Imam et al. (2008) published in one of the top accounting journals that analyzes valuation methodologies used in developed markets. The paper simulates the analysis and extends a comparison to emerging markets only. A further direct analysis between emerging and developed markets would have yielded more solid results of course if the researcher has access to research analysts in both sets of markets.

Another limitation in the number of interviews conducted being 31 interviews only, due to the limited number of financial services companies covering the MENA region, and the lack of access of the researcher to other emerging markets like South America or South East Asia.

This paper opens the way to further research on valuation methodologies used in emerging markets, as it is one of the first academic papers to tackle such topic.

Some of the research suggested would be to extend a similar analysis to other emerging markets based on in-depth interviews, surveys as well as content analysis. Another direction for future research would be comparing valuation methodologies used by PE firms for non-listed companies, compared to stock-market listed companies.

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