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THE EQUITY RISK PREMIUM IN THE MENA REGION

by
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AN ABSTRACT OF THE PROJECT OF

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The equity risk premium is one of the most important numbers in finance; its estimation is still however widely discussed. In the MENA region, the topic is even more complex given the lack of data, lack of transparency, illiquidity, and other challenges. This paper starts by a general definition for the equity risk premium with the various understanding of the topic. The second chapter presents all the calculation and estimation methodologies for the equity risk premium used internationally. The third chapter is dedicated to methodologies specifically built or used in emerging markets. For the fourth chapter, I examined equity research reports and established contact with equity analysts to have an idea about what practitioners are using for the MENA region, the methods are presented under chapter four while the numbers are presented under chapter 5. Additionally, in chapter 5, I presented the equity risk premium for the region as reported by Damodaran, Fernanderz, Bloomberg, and Deutsche Bank. Given the strengths and weaknesses of each of the methods reports under chapter one and two, I chose three methods and applied them to the MENA region under chapter six. As expected, the results for all three methods were greatly deceiving and inapplicable.

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CHAPTER I

INTRODUCTION

A. Defining the equity risk premium

As brought forward in many research papers and publications, the equity risk premium is the most important number in finance and more specifically in firm valuation. We may assume otherwise, but the mere definition of the equity risk premium or market risk premium is a point of divergence. Aswath Damodaran (2002) defines a risk premium as the average extra return expected or demanded above the return of a risk-free investment. A common understanding for the equity risk premium is the excess return "realized" by the equity market over a risk-free investment in the past. In fact, the number really drives the expectations about the required future returns by investors given certain estimated cash flows. In his "100 textbook" research, Fernandez (2009 a) finds mention of the equity risk premium under four concepts: historical equity premium, expected equity premium, required equity premium and implied equity premium. Consequently, he recommends a clear definition for what is meant by equity risk premium whenever mentioned to avoid confusion.

In consistency with the forward-looking required rate of return, I would like to consider the equity risk premium as a forward-looking rate or number driven by expectations (Arnott and Bernstein, 2002). This risk premium is generally affected by economic growth, interest rates, inflation, and other macroeconomic factors and geopolitical risks (Zenner et al, 2008). Analysts studying a certain equity asset will estimate the equity risk premium for the equity market corresponding to the asset under

consideration (Pinto et al, 2010). It's important to mention that the cost of equity should solely measure a non-diversifiable market risk (Damodaran, 2002), JPMorgan thus talks about a market risk premium and adds to the definition that the investment is made in a globally diversified market (Zenner et al, 2008).

A generally accepted equation featuring the risk premium is:

Required Return on Equity = Current Expected Risk-Free Return + Equity Risk Premium (Pinto et al, 2010) or

Expected Return on the market portfolio = Risk-Free Rate of return + Market Risk Premium (Zenner et al, 2008).

As an important component in valuation and in determining the cost of equity, we look for equity risk premiums in cost of equity or required rate of return calculation methods. There are several approaches to calculate the cost of equity; the equity risk premium plays a part in all of them (Damodaran, 2014). The table below with a summary of these methods was presented by Damodaran:

	Model	Equity Risk Premium
The CAPM	Expected Return = Risk-Free Rate + $\text{Beta}_{\text{Asset}}$ (Equity Risk Premium)	Risk Premium for investing in the market portfolio, which includes all risky assets, relative to the riskless rate.
Arbitrage pricing model (APM)	Expected Return = Risk-Free Rate + $\sum_{j=1}^{j=k} \beta_j(\text{Risk Premium}_j)$	Risk Premiums for individual (unspecified) market risk factors.
Multi-Factor Model	Expected Return = Risk-Free Rate + $\sum_{j=1}^{j=k} \beta_j(\text{Risk Premium}_j)$	Risk Premiums for individual (specified) market risk factors.
Proxy Models	Expected Return = a + b (Proxy 1) + c (Proxy 2) where the proxies are firm characteristics such as market capitalization, price to book rations or return momentum.	No explicit risk premium computation, but coefficients on proxies reflect risk preferences.

Table 1 Equity Risk Premiums in Risk and Return Models

Note that the equity risk premium in all of these models is a market-wide number, in the sense that it is not company specific or asset specific but affects expected returns on all risky investments (Damodaran, 2014). There's a general agreement in literature that the risk is not equal among all asset classes, this is where the beta comes in to measure the share's particular level of systematic risk, reflecting its market risk. A beta of one defines an asset of average systematic risk, while beta values above and below one correspond to an asset of above average and below average systematic risk respectively (Pinto et al, 2010). This beta is an integral part of the CAPM model that was started in 1952 with Markowitz investor behavior model and was later expanded in 1964, 1965, and 1966 by Sharpe, Lintner, and Mossin. The market risk premium in the CAPM is calculated as the difference between the expected return of the market and the risk-free rate. The market risk premium and the risk-free rate are common to all assets; only beta varies (Brealey et al, 2008).). The formula of the Capital Asset Pricing Model is:

Expected Return on an asset = Risk-Free Rate of Return + Beta * Market Risk Premium.

B. The various equity risk premiums and the various premiums

In addition to the previously mentioned equity risk premiums, we can differentiate between demand-side and supply-side risk premium (Ibbotson, 2011). Estimating the risk premium from the demand-side, we use utility functions to measure how much extra return the investor requires for investing in stocks rather than government bonds. Models based on this view try to estimate the risk aversion of the

investor and correlate consumption behavior with equity returns. Attempts by Mehra and Prescott (1985) and others failed to provide a good estimate; we thus rarely encounter applications for demand-side models in practice. On the other hand, as explained by Diermeier, Ibbotson, and Siegel (1984), the supply-side approach looks at the extra cash flow or returns the economy or the companies are willing to provide to investors for taking the additional risk in buying stocks.

Explorations on the topic don't stop here. Some researchers find that the risk premium itself can come in different forms, or can be caused by different factors. We face a long-horizon equity risk premium if we invest in stocks instead of long-term government bonds; we have the short-horizon equity risk premium when we invest in stocks versus U.S. Treasury bills; we have the small-stock premium when we choose to invest in large stocks versus small stocks. Away from the stock market, we can discuss premiums in the bonds markets; we have the default premium when we invest in long-term corporate bonds versus long-term government bonds; finally, we have a horizon premium for choosing long-term government bonds over U.S. Treasury bills (Ibbotson, 2011). We could also talk about a momentum premium (Jegadeesh and Titman, 1993), where observations proved that stocks that performed well previously would have a tendency to perform well in the future and vice-versa. Most importantly, we could talk about a liquidity premium (Diermeier et al, 1984) in illiquid markets or for illiquid assets. Additionally, we have the economic risk premium assigned to economic (non-traded) risk factors reflecting correlation, mispricing, and mimicking portfolios.

C. Evidence of equity risk premium and time variability

While most studies talk about definitions and estimation methods, some studies doubt the over performance of equity over debt. Dimson, Marsh, and Staunton (2003) discuss the evidence for the equity risk premium in addition to its variation over time. The variability of this over-performance is also subject to many studies including Hassett (2010) who proposes a risk premium factor model that looks into a time-varying equity risk premium as a function of the risk-free rate and a risk premium factor.

Before delving into how to calculate the equity risk premium, it is important to point out to a list of factors that affect the magnitude of the equity risk premium as stated by Damodaran (2014). The first factor is the risk aversion of the investor where we find the equity risk premium climbing for more risk averse investors. Risk averseness was found to increase with age, therefore markets with older investors would have higher risk premiums. Another factor is the consumption preference where equity risk premiums increase as saving rates decrease in an economy. Another factor is the economic risk where equity risk premiums are lower in economies with predictable inflation, interest rates and economic growth than in ones where these variables are volatile. Moreover, the availability of information about changes in the economy and in their investments makes investors more confident and thus causes a decrease in the equity risk premium. The illiquidity factor creates an additional risk and the equity risk premium reflects the risk of catastrophic events like great depressions and investments values drop significantly with the low chances of a foreseeable recovery. Additionally, government policies and uncertainty about these policies can translate into higher equity risk premiums. Lastly, Damodaran argues that investors do not always behave

rationally, and equity risk premiums are determined, at least partially, by quirks in human behavior. In his paper, Damodaran reports details about each of the factors mentioned through various research and studies.

CHAPTER II

CALCULATION & ESTIMATION

Computation methodologies for the equity risk premium are still widely discussed and many of them are controversial. With the differing definitions, we encounter various methods to estimate or calculate the equity or market risk premium; methodologies used are either based on historical data or are forward looking estimates based on expectations. For the purpose of this chapter, I tried as much as possible to extract all the available calculation methods that were studied in literature or were used by practitioners, whether still in use or are now void. These methods are listed below with, whenever possible, their main strengths and weaknesses.

A. The historical risk premium

Simply put, the historical risk premium is the average annual equity index return minus the average return on government debt over a period of time. But it's not that simple; every factor in the equation is put into question; we question which equity index should be used to represent the equity market returns under consideration; we question the time period used for computing the estimate, the averaging method used, and which government debt should represent the risk-free return. Not to go deeper into this discussion since it's widely studied in many papers, we take a quick look at these elements. There's a common agreement that the time period should be long enough to decrease the effect of the regression error, but not too long to avoid controversial economic periods. An important note mentioned by Pinto, Henry, Robinson, and Stowe

(2010) is that estimation precision will only happen by extending the length of the data set and not by dividing the data into smaller sub-periods. For averaging the annual returns, we could use either arithmetic or geometric means. For an arithmetic mean equity risk premium, we sum the annual return differences between equities and risk-free markets and divide by the number of observations in the sample. For a geometric mean equity risk premium, we compound the annual excess return. The CAPM and the multifactor models are single-period models where it's more consistent to use the arithmetic mean. Also, it's generally noted and agreed that, with volatile returns, the arithmetic averages will always exceed geometric averages. As for the choice of the government debt, this can be represented by long-term government bonds return or by short-term Treasury Bills return. It's also known that long-term bond yields are typically higher than short-term yields (Pinto et al, 2010). Ideally, the maturity of the risk-free instrument used should be similar to that of the cash flow discounted. Also for consistency, the definition of risk-free asset (e.g., government bills or government bonds) used in estimating the equity risk premium should be the same as the one used in specifying the current expected risk-free return (Pinto et al, 2010).

For the historical premium approach, Damodaran (2002) puts into question the three arguments used in the calculation: the time period, the choice of the risk-free security, and the choice of the averaging method. He presents a tabulated calculation for the historical risk premium for three different time periods (1928-2013, 1964-2013, and 2004-2013), using Treasury Bills versus Treasury Bonds as a risk-free security, and finally using arithmetic versus geometric means.

	Arithmetic Average		Geometric Average	
	Stocks - T. Bills	Stocks - T. Bonds	Stocks - T. Bills	Stocks - T. Bons
1928-2013	7.93% (2.19%)	6.29% (2.34%)	6.02%	4.62%
1964-2013	6.18% (2.42%)	4.32% (2.75%)	4.83%	3.33%
2004-2013	7.55% (6.02%)	4.41% (8.66%)	5.80%	3.07%

Table 2 Historical equity risk premium - Estimation period, risk-free rate, and averaging approach

As we can observe from the table results, in compliance with Damodaran's statement, any change in one or more of the three arguments (time period, choice of risk-free rate, and averaging method) will lead to a change in the sought number. On this method, Damodaran states that the historical premium method may lead to reasonable results for markets with a long history of equity and bond markets and huge data. This is not the case for most emerging and developing markets. Additionally, there is substantial empirical evidence that returns are correlated over time making the standard error estimate much larger. Many studies have been conducted on each argument alone; conclusions about the choice of each are stated as recommendations in Koller, Goedhart, and Wessels (2010) book. The authors suggest using the longest period possible which will help reduce the estimation error, they prefer to calculate the premium relative to 10-year government bonds, and use arithmetic average to calculate the yearly return.

Concerning the data series, the subject of survivorship bias arises; stocks that perform badly are removed from the index after a certain time leaving the index with "good" stocks only, and the index returns would be higher than that of the entire equity market. To adapt for this bias, we may adjust the historical estimate downwards.

Copeland, Koller, and Murrin (2000) recommend a downward adjustment of 1.5 percent to 2.0 percent for the S&P500 index. Adjustment could also be done upward in the case of a series of undesirable events. On the question of bias caused by estimation error and returns' negative autocorrelation, Koller, Goedhart, and Wessels (2010) suggest to discount cash flows received in 10 years by an average 10-year market risk premium instead of using an annual premium compounded 10 times. On the question of averaging methods, Marshall Blume (1974) uses the formula below to average returns:

$R = \left(\frac{T-N}{T-1}\right) R_A + \left(\frac{N-1}{T-1}\right) R_G$, with T being the number of historical observations in the sample, N being the forecast period discounted, R_A the arithmetic average of the historical sample and R_G the geometric average of the historical sample. We could also mention the Merton Reward-to-Risk Model (1980) that uses a continuous logarithmic method of calculation for the returns of an asset between two consecutive periods with the formula below:

$R_{i,t}=\ln(\frac{P_{t+1}}{P_t})$, where $R_{i,t}$ is the return of the asset i in period t and P the price of the asset. Consequently, Merton proposes three different models to calculate the equity risk premium each assuming a different aggregate risk preference (check Merton 1980).

B. Build-up method

Ibbotson and Siegel (1988) present the Build-up method that stacks the different premium types previously mentioned. This method facilitates forecasting the returns of various types of stocks and bonds; according to the authors, this method is primarily used for valuing private companies. The method is illustrated in Figure 1 shown below. As can be observed in figure 1, the most basic risk any investor faces is

caused by inflation, then, added on top of it is real risk-free rate. Adding inflation to real risk-free rate, we obtain a nominal risk-free rate which is the risk faced for holding cash and real estate assets. We keep adding instrument specific risks to reach an expected risk (and thus return) for stocks, small stocks, foreign stocks, bonds, and foreign bonds. If numbers for inflation and the risk-free rate are available or quasi-available, the method poses an additional challenge to reach the return of a stock; this challenge is the need to calculate yet an additional measure which is the bond horizon premium and we question how this premium could be measured. Also, if the equity risk premium added on top of the bond horizon premium should be measured with conventional approaches, then we face the risk of double counting since movement in interest rate that is supposedly being measured by the bond horizon premium has an effect on the equity index, it is hence accounted for in the conventional equity risk premium calculation.

Stocks	Bonds	Cash	Real Estate	Small Stocks	Foreign Stocks	Foreign Bonds
Equity risk premium				Small-stock premium	Foreign stock premium	
Bond horizon premium	Bond horizon premium			Equity risk premium	Equity risk premium	Foreign bond premium
Real riskless rate	Real riskless rate	Real riskless rate	Real return on real estate	Bond horizon premium	Bond horizon premium	Bond horizon premium
Inflation	Inflation	Inflation	Inflation	Real riskless rate	Real riskless rate	Real riskless rate
				Inflation	Inflation	Inflation

Figure 1 Components of Assets' Expected Returns Source: Ibbotson and Siegel (1998)

C. Forward-looking estimates

Forward looking models try to estimate the equity risk premium using expected measures to comply more with the definition of an equity risk premium being about expectations and not about previous performances. Several methods and approaches fall under this category, starting with Damodaran's implied equity risk premium.

1. Implied equity risk premium

Less dependent on historical data and more dependent on expectations, a novel method suggested by Damodaran calculates an equity risk premium that reflects investors' expectations; Damodaran calls it the implied equity risk premium. The main idea of an implied equity risk premium is to get the current trading price of an asset and its cash flows and estimate its growth for the next period(s). With these in hand, the only unknown parameter would be the cost of equity from which we can deduct a risk-free rate to arrive at an equity risk premium. This method is less subject to nonstationarity or data biases; however, the equity risk premium will be changing significantly over business cycles, this was not a concern when using historical risk premiums (Modugno, 2012). As a step further, after arriving at an implied equity risk premium, Damodaran (2002) suggests calculating an average or a regressed implied equity risk premium from historical data. For an average implied equity premium, we simply calculate the implied equity risk premium over a long period then we calculate its average. Otherwise, we can regress the implied equity risk premium against chosen fundamental macroeconomic data over a certain period. Two methods for the implied equity risk premium are presented hereinafter, depending on the cash flow used and the discounting method.

a. Dividend yield method

The dividend yield method, or what Damodaran refers to as the stable growth dividend discount model is based on the intrinsic value equation presented below:

$$\text{Intrinsic Value}=\frac{\text{Expected Dividends Next Period}}{\text{Required Return on Equity-Expected Growth Rate in Dividends}}$$

From this equation, we can calculate a cost of equity as presented below:

$$\text{Cost of Equity}=\frac{\text{Dividend}}{\text{Price}}+\text{Growth Rate}$$

From the cost of equity, we can calculate a market risk premium as:

$$\text{MRP}=\frac{\text{Cost of Equity implied by Dividend Yield Method-10years Government Bond Yield}}{\text{Beta}}$$

This approach however would be only convenient where dividends are regularly paid and steadily growing (Zenner et al, 2008). Assumptions used in this model hold for mature and developed equity markets like U.S., Canada, U.K. and the Eurozone; dividends on indexes are almost always paid and growth in dividend payment is predictable based on analyst expectations (Fama and French, 2002). Based on this model, the Gordon Growth Model estimates the equity risk premium thru:
GGM ERP = Dividend Yield on the Index based on year-ahead aggregate Forecasted Dividends and Aggregate Market Value + consensus Long-term Earnings Growth Rate – Current Long-term Government Bond Yield.

These methods are founded on a hypothesis of a stable rate of growth in earnings. For rapidly growing economies, a multiple stage growth in earnings is more

appropriate. For multiple growth stages, the internal rate of return (IRR) is a good estimate for the cost of equity, computed using a spreadsheet. To arrive at an equity risk premium, government bond yield is then deducted.

b. Dividend discount model

Unlike the dividend yield method which assumes a constant and indefinite growth, the dividend discount model presented here is more general; price is calculated using the formula:

$\text{Price}_0 = \sum_{t=1}^{\infty} \frac{\text{Dividend}_t}{(1+\text{Cost of Equity})^t}$, from which we can calculate a market risk premium as:

MRP=Cost of Equity Implied by DDM-10years Government Bond Yield

The implied equity risk premium denoted to by Damodaran refers solely to this method and not the previous one given the mentioned limitations of the first method. In these models, we face the question of what should be included in dividends and the growth rate for dividends since for many stocks and many equity markets payout ratios have been declining. Some methods have replaced dividends with share buybacks (Modugno, 2012); while a model suggested by Koller, Goedhart, and Wessels (2010) includes all cash flow available to equity holders with cash flows as below:

$$\text{CF}=\text{Earnings}\left(1-\frac{g}{\text{ROE}}\right)$$

Accordingly, the cost of equity is calculated as below:

$$K_e=\frac{\text{Earnings}\left(1-\frac{g}{\text{ROE}}\right)}{\text{Price}}+g$$

Using this formula, Koller, Goedhart, and Wessels (2010) present in their book a calculation for the cost of equity with any given year's S&P 500 median earnings-to-

price ratio, a 13.5% long-run return on equity, and a 3.5% long-run growth in real gross domestic product. In agreement with this method and as an upgrade, Damodaran presented in his 2014 version of "Equity Risk Premiums (ERP): Determinants, Estimation and Implications" paper the equation below:

$$\text{Value of Equity} = \sum_{t=1}^{t=N} \frac{E(FCFE_t)}{(1+k_e)^t} + \frac{E(FCFE_{N+1})}{(k_e - g_N)(1+k_e)^N}$$

With N being the number of years of high growth, $E(FCFE_t)$ is the expected free cash flow to equity (potential dividend) in year t, k_e is the rate of return expected by equity investors and g_N is the stable growth rate after year N. As stated by the author, this method could be accurately applied to emerging markets but the input that is most difficult to estimate would be the long-term expected growth rate.

In a variant of this approach, the implied equity risk premium can be computed from excess return or residual earnings models where the value of equity today can be written as the sum of capital invested in assets in place and the present value of future excess returns:

$$\text{Value of Equity} = \text{Book Equity today} + \sum_{t=1}^{t=\infty} \frac{\text{Net income}_t - k_e(\text{Book Equity}_{t-1})}{(1+k_e)^t}$$

2. Constant Sharpe ratio method

The Sharpe ratio measures a portfolio's excess return per unit of risk. While it is mainly used in portfolio management, Zenner, Hill, Clark, and Mago (2008) suggest a method to estimate the risk premium using the Sharpe ratio following the equation below:

$$\text{Market Sharpe Ratio}=\frac{\text{Portfolio Market Risk Premium}}{\text{Volatility of Market Risk Premium}}$$

To calculate a forward-looking market risk premium, we use the historical market (S&P 500) Sharpe ratio and assume the same number for the future. For future market volatility, we can use the VIX index that measures the volatility implied from options on the S&P 500 index. Thus, the market risk premium is market Sharpe ratio multiplied by the market's implied volatility.

D. Macroeconomic Model Estimates and other Regressions

There are multiple models that try to relate or regress financial variables and macroeconomic factors to estimate the equity risk premium, these models generally lead to reasonable results when the equities market plays a big role in the economy. As previously mentioned, when looking at the equity risk premium from the supply-side, we look at the extra return the economy is willing to provide on top of the risk-free rate; macroeconomic model estimates study this side. On this ground, Ibbotson and Chen (2003) present the earnings method, an illustration of a supply-side analysis. Ibbotson and Chen decompose the total return on equity into an expected inflation (EINFL), an expected growth rate in real earnings per share (EGREPS) which tracks the real growth rate in GDP; an expected growth rate in the P/E ratio (EGPE) with a zero baseline value reflecting an efficient market, and an expected income component (EINC), including return from reinvestment of income. The regression equation for the equity risk premium is thus:

$$\text{Equity Risk Premium}=\{[(1+\text{EINFL})(1+\text{EGREPS})(1+\text{EGPE})-1.0]+\text{EING}\}-\text{Expected Risk-Free Return}$$

E. Financial ratios model estimates

To estimate the equity risk premium, these models regress current excess market returns to current financial ratios. Financial ratios generally used are: aggregate book-to-market ratio, aggregate earnings-to-price ratio, or aggregate dividend-to-price ratio. These methods can lead to reasonable results but a major drawback is the possibility of getting negative risk premiums which is inconsistent with risk-averseness. Ohlson (1989 and 1995) links accounting fundamentals to share prices; in his 1989 study (p. 205), Ohlson derives the linear valuation equation below: $P(z_t)=\beta_1 x_t+\beta_2 y_t+\beta_3 d_t+\beta_4 v_t$, where $P(z_t)$ is the market value of equity capital, x_t is the accounting earnings for the period ended at time t; y_t is the accounting (or book) value of equity capital at time t; d_t is the dividend paid at time t, and v_t is all other information available at time t. O'Hanlon and Steele (2000) use this link between share prices, earnings, asset values, and dividends, to arrive at an equity risk premium; first, they found a good estimate for a company's cost of equity by regressing the company's time series of profitability and its time series of unrecorded goodwill. As a second step, they build a time series for the cost of equities of all the companies in a specified market and regress it against the companies' beta, the coefficient of beta in the resulting regression is considered a good estimation for the equity risk premium.

All the data used by O'Hanlon and Steele to apply this method were very objective data widely available in companies' financial reports in addition to other databases; these data cannot be manipulated and are not subject to change or influences. Given this, this model was one of my three chosen models to be applied to the MENA region. Details are in chapter six.

F. Dimson, Marsh, and Staunton (2006)

In their 2006 paper, Dimson, Marsh, and Staunton decompose the equity risk premium into five elements in an attempt to better understand it and thus better estimate it. These elements are the average dividend yield over the sample period; the impact of real dividend growth, expansion of the price/dividend ratio, and the change in the real exchange rate; and finally, the risk-free interest rate that is used to compute the equity premium. The historical equity premium is therefore equal to the sum of the real dividend growth rate, expansion in the price/dividend ratio, the dividend yield, and the change in the real exchange rate; less the risk-free real interest rate. All additions and subtractions are geometric.

$$1+ERP_t=\frac{(1+Gd_t)(1+GDP_t)(1+Y_t)(1+X_t)}{(1+Rf_t)}$$

with Gd_t being the growth rate of real dividends, GPD_t being the rate at which the price/dividend ratio has expanded, Y_t being the dividend yield defined as the ratio of aggregate dividends paid over period t divided by the aggregate stock price at the end of period t, X_t being the increase in the inflation-adjusted value of the home currency relative to the foreign currency, namely the change in the real exchange rate, and Rf_t the real risk-free interest rate. For future estimation of the equity premium, they look at the variations and the average of each of these factors and assume a similar behavior for the future.

G. The risk premium factor

Most of the times, researchers assume a constant equity risk premium. Hassett (2010) argues that if long-term real interest rates are stable, and long-term real GDP

growth is also assumed to be stable, the market-wide P/E would also be absolutely constant over time; however, this is not the case. In his 2010 paper, Hassett bases his study on the fact that the equity risk premium changes over time and he introduces a risk premium factor; when used with the constant growth model, this risk premium factor can be used along with the risk-free long-term rate to estimate the equity risk premium as shown in the formula below:

Equity Risk Premium = Risk-Free Long-term Rate × Risk Premium Factor

In other words, Hassett believes that the risk premium expected by investors is not a fixed premium but changes as a factor of the risk-free rate. The risk premium factor valuation model is:

$P=\frac{E}{R_f(1 + RPF) - (R_f - IntR + GR)}$ with GR being the long-term expected real growth rate and IntR being the long-term expected real interest rates. Long-term expected real growth rate (GR) is based on long-term GDP growth expectations on the basis that real earnings for a broad index of large-cap equities will grow with GDP over the long-term. Hassett argues that his model succeeds in explaining the P/E numbers and the S&P 500 Index levels, his model however resulted in three different risk premium factors for different time periods (the risk premium factor was 1.24 from 1960 till1980, it was 0.90 from 1981 till June 2002, and finally it was 1.48 from July 2002 to the date of the research). Consequently, a question arises about which number to use in the future if the factor is changing for different historical periods? To rectify this shortcoming, Estrada (2013) proposes an enhanced risk premium factor model as explained in the next section.

H. The enhanced risk premium factor model

Estrada (2013) uses Hassett model to calculate the expected market return as a function of the expected risk premium factor. He adds to it a model that builds the expected risk premium factor as a function of the current cyclically adjusted P/E ratio (CAPE) and the current risk-free rate. Estrada tries to explain the variability in the risk premium factor through the cyclically adjusted P/E ratio (CAPE). He starts by generating a time series of observed risk premium factors using the formula: $RPF_{1t}=\frac{R_{1t}}{y_{0t}-1}$, where R_{1t} denotes the annualized total return of the S&P 500 over ten year holding periods, and Y_{0t} is the risk-free rate. He then uses this time series to create a model that can explain the observed behavior of the risk premium factor. He builds the below relation and runs the regression: $RPF_{1t}=\alpha+\beta CAPE_{0t}+u_t$. In the second step, the outcome coefficients of this regression α and β are consequently used to forecast a risk premium factor using the relation: $E(RPF_{1t})=a+bCAPE_{0t}$. Using the forecasted risk premium factor, equity risk premium and the total return of the equity market can be derived using the expression: $E(R_{1t})=(1+a+bCAPE_{0t})y_{0t}$.

Briefly, Estrada proposes a two-step approach to forecast the total market return. In the first step, the risk premium factor is forecasted on the basis of the model linking the current CAPE with the current risk-free rate; in the second step, the forecasted risk premium factor is used to forecast the market return.

I. Survey Estimates

Another way to determine the equity risk premium would be to collect the opinion of those who ask for it; investors. Since they are the ones bearing the extra risk, equity risk premium would reflect their own perception of how much extra return they want for this risk. This view is consistent with the demand-side view of the equity risk premium. Surveys of individual investors date back to 1987. More recently, surveys included opinions of individual and institutional investors, academics, stock analysts, economists, and corporate CFOs (Modugno, 2012). Pablo Fernandez (2008, 2010, 2011, 2012, 2013, 2014) publishes yearly reports with statistics for equity risk premiums for all countries around the world based on survey feedback from professors, analysts, financial companies, and other non-financial companies.

CHAPTER III

METHODS FOR EMERGING MARKETS

Emerging markets and many developing countries are witnessing an increase in their international economic activities. Operations for multinational and U.S. firms have increased in these countries where the cost of labor is very low and the growth rates are substantially higher. Mergers and acquisitions activities in addition to international joint ventures have also increased dramatically. We see an increased number of investors who are interested in buying foreign stocks and diversifying their portfolios. With this openness of the markets and the possibility to hold globally diversified investments, global investors face the need to value companies in markets that are less developed, less transparent, and less liquid than what they are used to. In addition to lack of data, emerging markets face the additional risks of changes in exchange rates, differences in inflation, restrictive government regulations, political instability, differing accounting principles, and control over capital flow and investors' rights. Currently, most valuation methodologies involve personal opinions and subjective adjustments since valuation practitioners and academics are still in the pursuit of common and international methods to capture the risks specific to emerging markets in their valuation practices.

A. Facts in emerging markets

For most suggested calculations of the equity risk premium, a long historical time period of data should be available. And one of the limiting factors with data in emerging markets is the historical time period over which data is available, using this limited data period leads to a significant understatement or overstatement for the equity

risk premium. Additionally, while in developed markets we have thousands of publicly traded entities diversified across multiple industries; the equity markets in emerging markets are smaller in size and much less diversified.

B. Current Methodologies

Several approaches have been presented to capture the additional risk of the equity markets in non-developed countries. These countries face several limitations that are quasi non-existent in the U.S. and markets that are relatively more developed. We also make the difference between a segmented market where the marginal investor is diversified only across investments in that market and an open market where the marginal investor can invest across markets. Even for a globally diversified investor, there is country risk that needs to be accounted for; this risk is country specific with low correlation across markets. Before I examine these methods, it is important to mention that some researchers, specifically McKinsey & Company, prefer not to add the additional risk of local markets in the discount factor (through the equity risk premium) but within the cash flows being discounted.

1. World risk premium and world CAPM

This model is based on the very traditional CAPM model developed by Sharpe (1964), Lintner (1965), and Jensen, Black, and Scholes (1972). The formula used under this model is:

Cost of Equity = Risk-Free Rate + Beta × World Risk Premium

The world risk premium based on Campbell (2002) is derived from international equity markets and a world index data. Similarly to the U.S. equity risk premium, such data are widely available, reliable and go way back in time to decrease the effect of regression error. Using such a world risk premium, the company specific risk is as usual measured through beta; in view of that, this beta has to be measured in relation to the global index used in calculating the world risk premium. The model is straightforward and easily applicable. However, analysts using this model assume a world financial market that is fully open and accessible for all investors; in other words, international investors have access to all markets, including the emerging and developing ones, and local investors have access to outside markets. On the other hand, the calculation of the world risk premium is questionable given that data will be biased and not fairly representative knowing that the U.S., Canada, the U.K., the European Union, and other developed countries make up the biggest share of the world index in terms of market capitalization and returns. A study by Campbell (1995) proposes that with a world market portfolio and emerging markets, there is no relationship between expected returns and betas; as such, the use of the world CAPM may provide unreliable results in smaller, less liquid markets. In addition to all other weaknesses presented to such models, Harvey (1995) studied the expected returns in emerging markets and betas measured against world market portfolios and found no relation between them while he found a certain relation between the country variance and the variation in the expected return.

Dimson, Marsh, and Staunton (2002) constructed a world equity risk premium over the period from 1900 to 2012 and found the premium relative to Treasury Bills to be 4.1%. The authors publish a yearbook for the DMS Global Indices with global returns data that measure the long-run performance of stocks, bonds, Bills, inflation,

currencies, risk premiums, and maturity premiums in twenty two countries and three global regions around the world. In their Global Investment Return Yearbook (2013), they question the annualized equity premium relative to Bills that was widely believed to be over 6%, a number that was strongly influenced by the Ibbotson Associates Yearbook. By looking at the period from 1900 to 2012, they find the premium to be at 5.3%, as the early years of both the 20th and 21st centuries were relatively disappointing for U.S. equities. As for the world equity risk premium, over the period from 1900 to 2012, the real return on the world index was 5.0% per year for equities, and the annualized equity risk premium, relative to Treasury Bills was 4.1%. The premium was 4.2% over the most recent 50 years (Dimson et al, 2013). Their world index was constructed based on 22 countries that include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, South Africa, Spain, Sweden, Switzerland, United Kingdom, and United States, with China and Russia added in their latest study. Given that the USA accounts for roughly half the total stock market capitalization of the 22 countries included in the world index, Dimson, Marsh, and Staunton (2013) constructed a world index that excludes the USA, calling it the world ex-US equity index. Since 1900, the annualized equity risk premium relative to Bills was found to be 3.5%. In their calculations, the historical equity risk premium versus bonds for each country was calculated as the geometric difference between the country's equity total return (real or nominal) and its bond total return (real or nominal), or:

$$\text{Equity Risk Premium vs Bonds} = \frac{(1+\text{Equity Total Return})}{(1+\text{Bond Total Return})} - 1$$

As for the historical equity risk premium versus Bills, it was calculated as the geometric difference between the country's equity total return (real or nominal) and its Bills total return (real or nominal), or:

$$\text{Equity Risk Premium vs Bills} = \frac{(1+\text{Equity Total Return})}{(1+\text{Bill Total Return})} - 1$$

The short-term risk-free rate was taken as the return on U.S. Treasury Bills and the inflation rate was as for the United States. Additional details about their methodology can be found through the publication on this link:

datalab.morningstar.com/knowledgebase/aspx/files/DMS.doc

2. Globally nested CAPM

In addition to the world risk premium, the globally nested CAPM accounts for the country's exposure to the region given that for many countries, the equity market is not totally integrated with the world's markets (Damodaran, 2003). This model however adds an additional measure that is questionable and increases its error factor. The formula used is:

$$\text{Cost of Equity} = \text{Risk-Free Rate of Return} + (\beta_1 \times \text{World Risk Premium}) + (\beta_2 \times \text{Regional Risk Factor})$$

This model assumes that in addition to the country's risk compared to the world (measured by β_1), the country has an additional risk when compared to the region (measured by β_2 which is the country's covariance with regional risk).

There are many disadvantages to this model if applied to the MENA region or other emerging and developing countries. The first challenge we would face would be on how to measure the regional risk factor; what would define a regional versus a local or an international risk and how to quantify the risk itself and the effects of this risk. We will

also need to understand, quantify and measure the factors of this risk. We also question how to measure the companies' betas relative to this regional risk factor given that some companies have only local operations, while others have regional and sometimes international operations. In these cases, we might have to go again into separating the company's activities and calculate the percentage of local operations to regional and international operations and apply a different beta to each. Finally, countries are known to belong to certain regions and play important roles in these regions. Technically speaking, many times, we cannot make a clear decision about the effect the country plays in a certain region and the extent to which other neighboring countries (belonging to different regions) affect the economy in this country. Also, with the openness of the markets and international trade, economic and political events happening at any part of the world could have a direct or an indirect effect on any equities market, with this, we could sense that adding a regional risk factor might double count for these effects.

3. The downside risk approach

Given that emerging markets are not fully integrated with the international market, and given that, in emerging markets, there is little or no relationship between betas and stock returns, the downside risk method presented by Estrada (2000) correlated the equity return with the downside risk of the local market. The downside risk of a market is the risk of lower than average performance measured by the semi standard deviation. The formula for the downside risk approach is:

Cost of Equity=Risk-Free Rate + Downside Risk × World Market Risk Premium

And the downside risk is calculated using the formula:

$$\text{Downside Risk} = \frac{\text{Semi Standard Deviation of Returns in Local Market}}{\text{Semi Standard Deviation of Returns in World Market}}$$

The semi-standard deviation is the square root of the semi-variance; semi-variance represents the downside risk of a distribution and focuses on the portion of risk that is below the mean. The semi-standard deviation is a smaller number than the standard deviation of any distribution. This method adds the downside risk factor to the world risk premium approach first mentioned. In addition to the drawbacks of the world risk premium itself, this approach has its own limitations. When thinking of an equity risk premium number, we think of the average additional equity market risk the investor is looking to be compensated for; this risk is higher when the economy goes through bad times, and it is lower when the economy goes through good times. If we were to look only at bad times and how bad the economy could go, the magnitude of the perceived risk would be a lot higher and investors will start asking for higher and higher returns. This is not logical especially with the concept of risk investing (in equities when compared to government bonds).

4. Damodaran country risk premium model

Also called modified historical risk premium and based on the initial CAPM model, Damodaran (2003) suggests using a developed market equity risk premium then adds to it a country risk premium to account for the additional risk encountered by those investing in non-developed countries. The formula proposed by Damodaran is:

$$\text{Cost of Equity} = \text{Risk-Free Rate} + \beta \times \text{Mature Market ERP} + \text{Country ERP}$$

The U.S. is generally considered as a mature market and Damodaran most often uses the equity risk premium of the U.S. The formula proposed to calculate the country risk

premium is presented below:

$$\text{Country Equity Risk Premium} = \text{Country Default Spread} \times \frac{\text{Equity Standard Deviation}}{\text{Bond Standard Deviation}}$$

Damodaran starts with the country's risk rating to calculate the country default spread. Default spreads are calculated based on ratings assigned to a country's debt by rating agencies like S&P, Moody's and IBCA. These ratings measure the default risk of a country rather than the risk of its equity market; in other words, these determine the country's sovereign bond market risk. Some analysts take them as an acceptable measure for the equity market risks given that both markets are affected by some common factors like the stability of a country's currency, its budget and trade balances and its political stability. It is agreed however that the equity risk is higher than the default risk so the number needs to be increased. Therefore, Damodaran multiplies it by a relative standard deviation, which he believes makes the default spread more like an equity risk. It is commonly agreed that higher standard deviations are generally associated with more risk. However, one of the disadvantages of this method is that the equity market has to be liquid otherwise its standard deviation will be lower than that of the sovereign bond market making the equity risk lower than the country's default spread. The country also needs to have an established sovereign bond market. These are some of the drawbacks laid upon this method; building on this method, many publications study the different methods to estimate the country risk premium, which I will not delve on.

Estimating asset exposure to country risk premiums:

When using the country risk premium approach to estimate the individual

company’s exposure to the country’s risk, we can either assume that all companies in the market are equally exposed to the risk, so we add the country risk premium separately like shown below:

Required Return=Rf + β×US ERP + CRP

We can otherwise assume that a company's exposure to the country’s risk is proportional to its exposure to all other market risks, which is measured by the beta; the cost of equity would then be calculated as:

Required Return=Rf + β(US ERP + CRP)

Otherwise, we set the exposure of each company based on a lambda measure that assesses the company’s exposure based on its operations in the market like shown in the formula below:

Required Return=Rf + β×mature ERP + λ×CRP

5. Goldman Sachs country spread model

Many analysts agree that a country premium can be measured by the sovereign bond yield spread. Goldman Sachs suggested model uses the formula below:

Cost of Equity=Sovereign Yield Spread + Risk-Free Rate + β×US ERP

Goldman Sachs model takes the World CAPM model and adds to it a sovereign yield spread that is thought to capture the equity risk given a correlation between the country’s sovereign yield spread and its equity market risk. Unlike the World CAPM and similarly to Damodaran’s country risk premium model, this model uses the equity risk premium of a mature market; Goldman Sachs always takes the U.S. equity risk premium. The sovereign yield spread is calculated as the difference between the yield

on local bonds denominated in the currency of a developed market and the yield on developed market government bonds, with both bonds being of the same maturity. This method also requires the availability of a developed sovereign bond market and is similar to Damodaran's country default spread model without the adjustment of a relative standard deviation of equity to bond market.

6. Relative standard deviation model

Higher standard deviations are generally linked with higher risk and thus the relative standard deviation model measures the additional risk of a local market above that of the U.S. market by dividing the standard deviation of the local equity market by the standard deviation of the U.S. equity market. This number is then multiplied by the U.S. equity risk premium to estimate the local market equity risk premium.

$$\text{Relative Standard Deviation of Country X} = \frac{\text{Standard Deviation of Equity Market of Country X}}{\text{Standard Deviation of Equity Market of U.S.}}$$

Therefore,

$$\text{Equity Risk Premium of Country X} =$$

$$\text{Risk Premium of U. S. Market} \times \text{Relative Standard Deviation of Country X}$$

Hence, the cost of equity is calculated as:

$$\text{Cost of Equity} = \text{Risk-Free Rate} + \text{Relative Standard Deviation} \times \text{US ERP}$$

However, and similarly to Damodaran's country risk premium, an illiquid or volatile local equity market may lead to higher or lower equity risk premiums than required.

7. Goldman Sachs segmented model

Another method presented by Goldman Sachs is the segmented model based on the formula:

Cost of Equity=Sovereign Yield Spread + Modified β×US ERP

where the additional risk of the local market in comparison with the U.S. equity market is measured in the modified beta. The formula for the modified beta is:

$$\text{Modified } \beta = \frac{\text{Standard Deviation of Local Market in USD}}{\text{Standard Deviation of US Market}}$$

8. Goldman Sachs global emerging markets model

This model is based on the above-mentioned model, with the addition of the risk-free rate. The formula used for Goldman Sachs global emerging markets model is:

$$\text{Cost of Equity} = \text{Sovereign Yield Spread} + \text{Risk Free Rate} + \text{Modified } \beta \times \text{US ERP} \times \text{Double Counting Adjustment}$$

Since part of the risk-free rate is incorporated in the calculation of the sovereign yield Spread, a double counting adjustment is calculated by subtracting the correlation of dollar returns between the equity capital markets and the sovereign bond.

9. Country risk rating model

This method presented by Erb, Harvey, and Viskanta (1996) regresses the expected return in an emerging market against the country's credit ratings. Country credit rating is influenced by political and expropriation risk, inflation, exchange rate volatility, economic viability, and sensitivity to global economic crisis. The authors start

by building a linear regression where the return increases/decreases linearly with the increase/decrease in the country risk rating. Given that the expected return is not linearly explained by the change in country credit rating, the authors attempt a logarithmic regression where return changes log-linearly with the change in the country's risk rating. The credit ratings for any country can be found through several databases. The model requires no data about the equity market for the country; it also counts on no historical data but is more forward-looking as the credit rating is a forward-looking measure. It remains however that the credit risk rating is a subjective number. As mentioned by the authors, this method is well suited for emerging countries; it in fact allows the same project/company to have different expected returns based on its domicile. More details about the methodology and the data can be found in the paper "Expected returns and volatility in 135 countries" by Erb, Harvey, and Viskanta (1996). The linear regression, according to the study, proves to be inappropriate. The logarithmic model captures the non-linearity of the rate and return relationship. At the very low credit risk point, the model has the highest fitted values, the model also concludes that reward for credit risk is similar across emerging and developed markets but notes that the magnitude of the coefficient is much greater in emerging markets; in economic terms, a 10-point drop in credit rating would increase volatility by 6.6 percentage points in a developed market and 7.4 percentage points in an emerging market. Given that it is a forward-looking model and it had a good significance when applied to emerging markets, this model was one of my three chosen models to be applied to the MENA region. Details are in chapter six.

10. International financial integration, inflation and economic risks model

The study is presented by PhD Nahil Boussiga from the University of Tunis El Manar and lecturer Ezzeddine Abaoub from the Department of Management at the University of Carthage (2013). The presented study considers how international financial integration drives the equity risk premium; the results show that the equity risk premium is negatively correlated with the international financial integration. The data used is a panel dataset over the time period 2000 to 2010 covering sixty emerging and developing countries. Their suggested model regresses the equity risk premium to the international financial integration, inflation and economic risks, based on the equation below:

$$ERP_{it}=\alpha_i+\beta_1 IFI_{it}+\beta_2 inflation_{it}+\beta_3 Econ.Risk_{it}+\beta_4 Crisis_{it}+IFI_{it}\times Crisis_{it}+\varepsilon_{it}$$

for panel data i = 1,…., 60 and t = 2000,….,2010. The equity risk premium used is that provided by Damodaran. As for international financial integration, it is calculated as (FDI net inflows + FDI net outflows)/ GDP. Economic risk is a representation of GDP volatility and is calculated as the standard deviation of quarterly GDP. Crisis is introduced as a dummy variable with the value of one in the cases of financial or economic crisis and the value of zero otherwise. The result of the regression for the equity risk premium for the MENA region was found to be:

$$ERP=-0.0002\times IFI+0.013\times inflation-0.0002\times Econ.Risk+0.0103\times Crisis-0.005\times IFI\times Crisis$$

CHAPTER IV

METHODS USED IN THE MENA REGION

***MENA:** For the purpose of this report, MENA refers to the following countries in the Middle East and North Africa: Algeria (Algiers), Bahrain (Al-Manamah), Egypt (Cairo), Iraq (Baghdad), Jordan (Amman), Kuwait, Lebanon (Beirut), Libya (Tripoli), Morocco (Rabat), Oman (Muscat), Palestine, Qatar (Doha), Saudi Arabia (Riyadh), Sudan (Khartoum), Syria (Damascus), Tunisia (Tunis), UAE (Abu Dhabi) and Yemen (Sanaa).

Given the methods presented in the previous sections and the limitations of each, I sensed that a direct application of any is highly improbable. Some of the above suggested methods require extensive data most of which is either not easily available or not available at all. Most of the suggested methods, though suggested to be applied to emerging markets, consider the literal definition of emerging markets like China where data are becoming more available and the markets are a lot bigger with some political stability and an increased production and consequently increased exports. With the challenges presented in the MENA region and specifically in the Arab region, different methodologies should be applied to take into consideration the nature of this market. To have a clearer image about the type of methodologies being used by analysts in the region to value local and regional companies, I reported to two sources: published equity valuation reports and direct contact with analysts in investment banks and equity research departments. Unfortunately, by contacting analysts via email, I only got lucky with a reply from FFA Private Bank in Lebanon, and from Shuaa Capital in Dubai.

A. FFA Private Bank, Lebanon

According to an analyst at FFA Private Bank, the equity risk premium is calculated starting with the U.S. Treasuries as proxy for the risk-free rate, layered on top are the country, currency, and equity risk factors. For example, they could start with 3% then add to it another spread for Lebanon risk which could be the Lebanese credit default swaps at 350bps, or they can start with Lebanese Eurobonds at 6.5%. Additional currency and equity risks are then reflected by adding 200bps and 700bps respectively.

B. Shuaa Capital, Dubai

As for Shuaa Capital, numbers for the equity risk premium are based on Bloomberg, using the "EQRP" function in Bloomberg relevant to the market in which the company under valuation operates. Bloomberg publishes numbers for the equity risk premium for almost all markets, including emerging and the MENA region markets. The computation of EQRP consists of two parts. First, the expected market return is calculated using forecasted data and current equity values; this reflects the risk premium in terms of forward-looking market conditions rather than historical valuations. The risk free rate is then subtracted from this return to obtain the country risk premium. The second part of the calculation involves deriving the equity risk premium for a specific issue based on the country premium; this value, using the Capital Asset Pricing Model is simply the product of the equity's beta and the country premium. The market return is calculated as the internal rate of return weighted by the market cap of each index member; this is a forward-looking estimate of market return. The internal rate of return

comes from the Dividend Discount Model, and is based on estimates from the Current Consensus of estimates function for the first few years. After that, CRP uses a proprietary model for the growth years. The risk-free rate is the yield on a local generic ten-year treasury security.

C. Equity research reports

The above were in fact numbers and explanations given by the contacted analysts or practitioners regarding their own approaches to valuation when dealing with the equity risk premium. Nevertheless, given that the rate of response from practitioners in the region was extremely low, I resorted to equity valuation reports that were publicly available on corresponding investment banks and equity research departments' websites. The number of these publications was in fact limited as many banks make such reports available to their customers only or via paid subscription (like Beltone Financial). Additionally, for the available equity research reports, the majority have no mention for an equity risk premium or even a cost of equity as they resort to relative and comparative valuation methods instead of valuation methods that require the use of a discount rate. These valuation methods included mainly Price-to-Earnings, Price-to-Book, EV/EBITDA, in addition to comparing ROE and ROA with local and regional peers. On the other hand, even the available equity research reports that use DCF, DDM, or NAV valuations did not all have a mention of the equity risk premium, and if they did, they reported no explanation for how the equity risk premium was derived; most reports would instead simply report a number for the cost of equity or sometimes for the weighted average cost of capital. Appendix III found at the end of this document

lists all the providers or possible providers of valuation services in the MENA region; this includes all financial institutions and others who for core or for peripheral and support activities, perform some sort of valuation to arrive at a fair market share value for the concerned company. Going through the list, I extracted all the equity valuation reports available on these providers' websites. I established contact via email with those providers that had no published or listed equity valuation reports or in case I failed to access or reach these reports. As previously mentioned, I received no reply. Moreover, once I extracted all the available equity research reports, I looked for a mention for a cost of equity or for an equity risk premium. For those reports that lacked any mention for the cost of equity or equity risk premium, I again established contact via email with equity research analysts responsible for the published report and yet again, I received no reply. In the section below, I list the methods used by the analysts who wrote the report to arrive at a fair valuation for the studied company.

1. BLOMINVEST

On the website of BLOMINVEST, the equity research unit of the bank publishes initiation of coverage and periodic reports about several companies it covers in the Middle East, mainly in Lebanon, Egypt, Saudi Arabia, and Jordan. Below is a list of firms covered by BLOMINVEST; by sector and country.

Company	Sector	Country
Commercial Intl Bank	Banking	Egypt
El Sewedy Electric	Electric Equipments	Egypt
Ezz Steel	Industrial products	Egypt
Global Telecom Holding	Telecom	Egypt
Orascom Construction	Construction & Fertilizers	Egypt
Palm Hills	Real Estate	Egypt
Sidi Kerir	Petrochemicals	Egypt
Sodic	Real Estate	Egypt
Talaat Moustafa	Real Estate	Egypt
Arab Bank	Banking	Jordan
Holcim	Basic Materials	Lebanon
Solidere	Real Estate	Lebanon
Yamama Cement	Basic Materials	Saudi Arabia
Yansab	Petrochemicals	Saudi Arabia

Table 3 Companies covered by Blominvest

The reports include a valuation of the firm's stock fair value, financial projections and comparable analysis with regional peers. Additionally, the reports include an economic overview of the firm's operating environment, information about the business model and other company specific analysis. Looking at the equity risk premium used in DCF and DDM valuations in these reports, analysts at BLOMINVEST calculate the equity risk premium as the difference between the return expected from investing in the local index and the risk-free rate. The return of the Treasury bond is taken as the risk-free rate as it was thought to capture the additional risk of investing in a relatively underdeveloped country compared to the U.S. Treasury. In some instances, BLOMINVEST takes the difference between the current market return and the risk-free rate. At other times, they calculate a historical risk premium by taking the difference between an average market return over a certain period and an average risk-free rate over the same period. Otherwise, they calculate the equity risk premium using an expected market return (expected return on local index) and the current risk-free rate.

The differences in the equity risk premium number for the same country in the same year (as will be noticed in the next chapter) is due to valuations done in different months given that expectations and current market returns fluctuate. An additional premium of 5% was added to the discount rate for several companies to capture the additional risk premium required by investors for gaining exposure to a Lebanese stock during the current instability in Syria.

For Jordan, a valuation for Arab Bank on August 28, 2012 using a DDM model, the cost of equity was calculated as

ARBK Cost of Equity=Risk-Free Rate+β×Market Risk Premium=8.5%+(1.14×4.58%)=13.65%

The risk-free rate was taken as the 5-year Treasury bond recently issued by the Jordanian government. The market risk premium of 4.50% was calculated as the difference between the expected return of investing in the Amman Stock Exchange, estimated at 13%, and the risk-free rate of 8.50%.

For Egypt, the risk-free rate was taken as the 5-year Treasury bond recently issued by the Egyptian government and the market risk premium as the difference between the expected return of investing in the EGX-30 estimated and the risk-free rate. This is the case in a valuation report for Commercial International Bank in Egypt using DDM on May 14, 2012, the cost of equity was calculated as Risk-Free Rate + (Beta * Market Risk Premium) = 12.50% + (1.10 * 5.50%) = 18.55%. The risk-free rate of 12.50% was basically the 5-year Treasury bond recently issued by the Egyptian government, the market risk premium of 5.50% was the difference between the expected return of investing in the EGX-30 estimated at 18.00% and the risk-free rate of 12.50%. At another instance, an average return for the index was taken. The valuation of El Sewedy Electric using DCF on June 01, 2011 showed the calculation of SE's cost of equity as

Risk-Free Rate + (Beta * Market Risk Premium) = 12.92% + (1.00 * 8.87%) = 21.79%. The 12.92% represented the 343-day Treasury bill issued by the Egyptian government and the market risk premium was the result of the difference between the average 7-year return of the EGX-30 estimated at 21.79% and the risk-free rate of 12.92%. Also, the DCF valuation of Ezz Steel on January 23, 2011 used a 10.40% one year Treasury bill issued by the Egyptian government, and the average 5-year return of the EGX-30 estimated at 16.80%. The cost of equity was thus calculated as = Risk-Free Rate + (Beta * Market Risk Premium) = 10.40% + (1.13 * 6.40%) = 17.63%. At this instance, analysts deliberately added 4% to a WACC of 13% to account for the additional risk resulting from the Arab Spring events.

Global Telecom Holding Egypt was valued using a combination of DCF and Sum-of-The-Part (SOTP). In the calculation for the cost of equity, a specific risk related to operations in Algeria was added. The cost of equity was thus = Risk-Free Rate + (Beta * Market Risk Premium) + Specific Risk Related to Algeria = 2.74% + (1.1 * 15.3%) + 5% = 24.5%. The risk-free rate of 2.74% represented the 10-year US Treasury, the market risk premium of 15.3% was obtained as the difference between the expected return of investing in the EGX-30 estimated at 18% and the risk-free rate of 2.74%. The specific risk to capture the additional risk of investing in Algeria was estimated at 5%.

In a valuation of Holcim Lebanon on December 06, 2010 using a DCF method, the risk-free rate of 5% represented by the yield on the 5-year Eurobond issued by the Lebanese government. This was calculated using the sum of the 5-year US Treasury yielding 2% and the credit default swap issued in Lebanon yielding 3%. The market risk premium of 3.92% is the difference between the average 4-year return of BSI estimated at 8.92% and the risk-free rate of 5.0%. A country risk premium of 3% was also added to capture

the additional risk of investing in a politically unstable country; analysts believed that the credit default swap was not enough to capture the high probability of external shocks that may occur in the country. Additionally, a liquidity risk premium of 2.8% was added, calculated using the Bid/Ask spread and the share price. This premium was added to Holcim since only 18% of its shares were tradable by the public along with being traded in a fairly illiquid market such as the BSE.

In a valuation report published May 17, 2010, Solidere's share were valued using a hybrid methodology; valuing the operating assets at market value using a discounted cash flow (DCF) model and the non-operating assets at book value. A risk-free rate of 5.0% representing the 5-year Eurobond yield issued by the Lebanese government was used. The market risk premium was estimated at 2.54%, being the difference between the average 4-year return of the BSI estimated at 7.54% and the risk-free rate of 5.0%. For Saudi Arabia, a valuation for Yansab using DCF on August 29, 2011 shows a risk-free rate of 1.80% represented by the five year US Treasury bill and a market risk premium of 13.20% as the difference between the expected return of the TASI estimated at 15.00% and the risk-free rate of 1.80%.

2. Falcom Financial Services

The equity research reports of FALCOM Financial Services, for DDM and DCF valuations simply state the risk-free rate, the equity risk premium, and the beta for the cost of equity calculations. To find out how the equity risk premium was calculated, I looked at the index return at the time of the publication to test whether FALCOM uses the same approach as BLOMINVEST. Numbers did not match.

3. ABC Investments

ABC Investments use the market risk premium posted by Damodaran on his website. For their valuation of Hikma Pharmaceuticals, they use a global equity risk premium of 5.5% given that the company's operations are worldwide and not limited to Jordan.

4. Amwal Invest

Equity research reports published by Amwal Invest simply state that their data is extracted from UBS.

5. Audi Saradar

As for Audi Saradar, in many reports, analysts did not explicitly share the value for the equity risk premium. To calculate it, I used the cost of equity, the risk-free rate and the beta mentioned in their report, and arrived at their assumed equity risk premium. For instance, for the equity risk premium used by Audi Saradar in 2012, I used their valuation report for Almarai, in the report they mention a cost of equity of 11.68% and a beta of 0.79, the risk-free rate was 2.02%, this leaves us with an equity risk premium of 12.23%. Otherwise, Audi Saradar barely mentions the discount rate or the cost of capital/equity, with no mention for company beta.

6. BMG Financial Group

As for BMG Financial Group, in a valuation report for STC Saudi Arabia, analysts used the yields on the 10-year government bond as the risk-free rate and arrived at a market premium of 8.85% for the company using market return data for the past 15 years. Since the beginning of 1992, the Saudi stock market averaged a CAGR of 12.9%, while the average risk-free rate over the same period was 5.6% translating to a market risk premium of 7.3%.

7. FFA Private Bank

A valuation report published by FFA Private Bank shows the use of the Eurobond 2016 yield as of January 2009 for the risk-free rate and the country premium. The equity premium has been deduced from comparatives taking into consideration the strong liquidity position of the valued company, the scarcity of its land bank and the relative visibility of its cash inflows.

8. Arab Finance Corporation

Arab Finance Corporation presents a different approach. In a valuation report for Solidere Lebanon in 2002, analysts took the cost of equity to be at a 9% premium to the company's average cost of debt. Their approach doesn't include any beta or CAPM model. Also by the Arab Finance Corporation, for a valuation of BLOM Bank, they take a 7% premium over the risk-free rate represented by the yields realized on sovereign issues; as of 31 December 2002, 72% of the assets of the Bank were denominated in

foreign currencies, mainly dollars, while the remaining 28% were in Lebanese Pounds. At the date, the average yield on dollar denominated Eurobonds, all maturities included, stood at 7.7% while local currency average yield, all maturities included, stood at 8.5% at that date. This leads to a risk-free rate based on a weighted average of 7.92%. The credit ratings assigned to BLOM Bank's risk are similar to the sovereign risk ratings, in other words, analysts deem investors willing to have an exposure on BLOM's GDRs with a premium as to an investment in equity as opposed to an investment in bonds. Thus, a 7% risk premium for an investment in stocks is added to the cost of equity. This number was estimated at 3 and 5% in previous years, but is increased to 7% in view of the latest political tensions in the region.

9. EFG Hermes

A 2005 valuation for Solidere Lebanon by EFG Hermes shows a decreased cost of equity from 16% to 13.9%. Analysts refer this decrease to two reasons; i) the decline in Lebanon's 2016 Eurobond yield used as a proxy for the risk-free rate from 10% to a median of 8.4%, signaling a lower risk profile for Lebanon in general. ii) Analysts deliberately reduced the equity risk premium by 50 bps from 6% to 5.5% to reflect Solidere's better liquidity and lower financial risk.

10. Almal Capital

In a report published in June 2009, analysts of Almal Capital mention that they adjusted their equity risk premium downwards by 100bps to reach 6% across the board for

companies in their coverage universe, these companies include National Bank of Abu Dhabi, Union National Bank/Abu Dhabi, Abu Dhabi Commercial Bank, First Gulf Bank, Emirates NBD PJSC, Samba Financial Group, Riyad Bank, Saudi British Bank, Al Rajhi Bank, Arab National Bank, Arabtec Holding Co, Drake & Scull International, Union Cement Co, Ras Al Khaimah Cement Co, Arkan Building Materials Co, to name a few. These companies operate mainly in Dubai, Abou Dhabi, and Saudi Arabia. In other words, Almal Capital uses the same equity risk premium of 7% for UAE and Saudi Arabia.

11. Deutsche Bank

As for Deutsche bank, in a DCF valuation for both BLOM and Audi banks, the cost of equity was calculated using the US equity risk premium of 5.8% and added a country risk premium of 6%.

CHAPTER V

SOME NUMBERS IN THE MENA REGION

In this chapter, I will simply list the numbers for all the equity risk premiums for all the countries of the MENA region that I found either in the previously stated reports or in other locations as specified under each section. The main purpose of this listing is to have a better understanding and a clearer image about the frequent numbers and the generally agreed on numbers used in the region. As will be noticed, the same provider might have different numbers for the equity risk premium for the same country at the same year; this was sometimes due to differing months for the valuations within one year. But at other instances, and as mentioned in the previous chapter, some analysts associate the equity risk premium to the studied company itself, in other words, analysts assume each company to have its own equity risk premium while the equity risk premium is normally associated to an entire equity market.

A. Aswath Damodaran

On his website, Aswath Damodaran provides a list of equity risk premiums for all the countries. For the MENA region, specifically for the countries listed in the table below, he uses the Country Default Risk Spreads mentioned in the previous chapter.

	2014	**2013**	**2012**	**2011**	**2010**	**2009**	**2008**	**2007**	**2006**	**2004**	**2003**	**2002**	**2001**	**2000**
Bahrain	7.85%	8.25%	8.05%	8.25%	6.73%	6.08%	7.40%	5.99%	6.19%	6.64%	6.62%	6.76%	8.01%	8.01%
Egypt	16.25%	13.50%	13.30%	13.50%	8.60%	8.25%	9.50%	6.82%	6.94%	6.64%	6.62%	6.76%	8.01%	8.01%
Jordan	11.75%	10.13%	9.93%	10.13%	8.00%	7.50%	8.90%	6.82%	6.94%	7.02%	7.00%	12.39%	9.51%	9.51%
Kuwait	5.75%	6.75%	6.55%	6.75%	5.75%	5.40%	6.50%	5.54%	5.81%	6.19%	6.17%	6.39%	6.71%	6.71%
Lebanon	11.75%	12.0%	11.8%	12.0%	11.0%	12.75%	18.5%	11.54%	11.66%	14.59%	14.57%	17.26%	11.01%	10.01%
Morocco	8.75%	9.60%	9.40%	9.60%	8.60%	8.25%	9.50%	7.79%	7.91%	8.59%	8.57%	9.39%	8.01%	8.01%
Oman	6.05%	7.28%	7.08%	7.28%	6.28%	6.08%	7.40%	5.99%	6.19%	6.79%	6.77%	7.14%	6.81%	6.81%
Qatar	5.75%	6.75%	6.55%	6.75%	5.75%	5.40%	6.50%	5.54%	5.81%	6.27%	6.25%	6.54%	6.81%	6.81%
Saudi Arabia	5.90%	7.05%	6.85%	7.05%	6.05%	5.85%	7.10%	5.84%	6.11%	6.79%	6.62%	9.39%	6.96%	6.96%
Tunisia	10.40%	9.00%	8.80%	9.00%	7.63%	7.20%	8.38%	6.52%	6.64%	6.79%	6.77%	7.14%	6.96%	6.96%
United Arab Emirates	5.75%	6.75%	6.55%	6.75%	5.75%	5.40%	6.50%	5.54%	5.81%	6.04%	6.17%	6.39%	6.41%	6.41%

Table 4 Equity risk premium by Aswath Damodaran
Source: http://people.stern.nyu.edu/adamodar/

B. Pablo Fernandez

As mentioned in the second chapter of this paper, a decent method to estimate the equity risk premium is by surveying those who are involved and play a role in setting this number; these would be the investors themselves and how much more they are willing to pay for the additional return, also these would be the analysts and the financial institutions who usually help investors make such decisions. Pablo Fernandez along with his co-authors have published papers for the years 2008, 2010, 2011, 2012, 2013, and 2014 with statistics about the equity risk premiums for all countries around the world based on survey feedback from professors, analysts, financial companies, and other non-financial companies. The numbers are summarized in the table below.

	2010		**2011**	**2012**	**2013**	**2014**
	by professors	**by analysts**				
Bahrain	-	-	-	7.30%	-	6.90%
Egypt	7.10%	8%	7.60%	9.20%	9.20%	12.90%
Kuwait	-	-	6.60%	6.80%	-	6.10%
Lebanon	-	-	-	9%	-	11.60%
Morocco	-	-	-	7.30%	-	8.40%
Oman	-	-	-	6.60%	-	6%
Qatar	-	-	-	7.10%	-	6.80%
Saudi Arabia	-	-	6.30%	6.50%	-	6.20%
Tunisia	-	-	-	-	-	9.40%
UAE	-	-	9.70%	8%	-	7.70%

Table 5 Equity risk premiums by Pablo Fernandez

C. Bloomberg

The calculation method used by Bloomberg to arrive at an equity risk premium is mentioned under chapter four. Below are the equity risk premiums for the MENA region retrieved from Bloomberg at the date of the report.

	Expected market return	Risk-free rate	Country risk premium	Index
Algeria	9.688%	2.571%	7.117%	S&P
Bahrain	9.688%	2.571%	7.117%	S&P
Egypt	19.188%	15.570%	3.618%	Hermes
Iraq	9.688%	2.571%	7.117%	S&P
Jordan	9.668%	2.571%	7.117%	S&P
Saudi Arabia	10.337%	2.589%	7.748%	SASEIDX
Kuwait	9.668%	2.571%	7.117%	S&P
Lebanon	9.668%	2.571%	7.117%	S&P
Libya	9.668%	2.571%	7.117%	S&P
Morocco	9.692%	1.571%	8.121%	OMX
Oman	9.668%	2.571%	7.117%	S&P
Palestine	9.668%	2.571%	7.117%	S&P
Qatar	13.771%	2.589%	11.182%	DSM
Tunisia	9.668%	2.571%	7.117%	S&P
UAE	17.146%	2.589%	14.557%	ADSMI
Yemen	12.713%	2.376%	10.337%	OBX

D. Deutsche Bank

A report published by Deutsche Bank on November 29th, 2010 studies mainly two banks in Lebanon (BLOM and Audi) as part of their report on the equity risk premium in Lebanon specifically and in the region. In their report, we find a summary of some equity risk premium for the MENA region as shown in the illustration below.

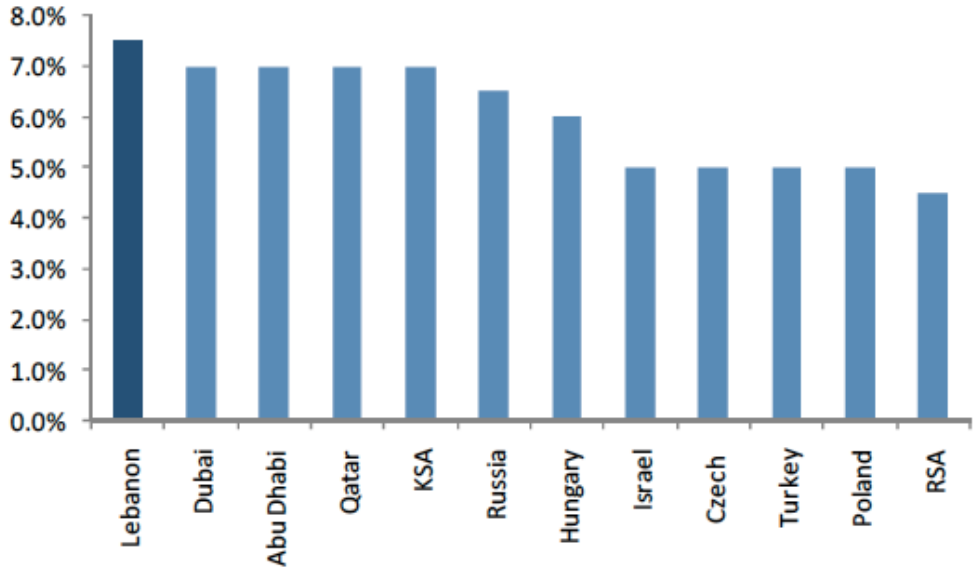

Illustration 1 Equity risk premium by country
Source: Deutsche Bank

E. Equity Valuation Reports

Listed below are all the equity risk premiums for all the MENA region markets for recent years that I found through equity research reports. As I mentioned previously, I collected these numbers by seeking equity research reports made available by all firms who are providers or possible providers for valuation (list found in Appendix III). For additional numbers, I collected a list of all the publicly listed firms in each of the MENA region countries and researched for equity risk premiums or cost of equity for these firms regardless of the valuation provider. Below is the list of the equity risk premiums by country for the available years by the specific providers.

1. Lebanon

Year	**Source**	**ERP**
1997		7.50%
1998		7.50%
1999		7.50%
2000	Arab Finance	7.50%
2003	Corporation	7%
2006	Shuaa Capital	5%
		7.50%
		7.30%
	Audi Saradar	10.81 %
		7.50%
2009	FFA Private Bank	4%
		3.92%
	BLOMINVEST	2.54%
2010	Deutsche Bank	7.50%
2012	FFA Private Bank	7.50%

Table 6 MENA analysts numbers, Lebanon

2. Jordan

Year	Source	ERP
2006	Amwal	6.83%
	ABC Investments	6.82%
2008	Awraq Investments	6.26%
	ABC Investments	8.90%
	Amwal	6.82%
2009	Awraq Investments	6%
		7.50%
2010	Amwal	8.00%
	Awraq Investments	6.20%
2011	Rasmala	9%
		5.10%
	BLOMINVEST	4.50%
		6%
2012	Capital Investments	5%
2013	Awraq Investments	4%

Table 7 MENA analysts numbers, Jordan

3. Egypt

Year	**Source**	**ERP**
2006	Shuaa Capital	5%
		8%
		8.50%
	Jazira Capital	9%
2010	BLOMINVEST	6.40%
		10.35%
	Audi Saradar	4.20%
		8.87%
		6.40%
2011	BLOMINVEST	2.50%
		5.50%
2012	BLOMINVEST	3.50%
		15.30%
	BLOMINVEST	3.50%
2013	HSBC	8%

Table 8 MENA analysts numbers, Egypt

4. Oman

Year	Source	ERP
2010		7.70%
2011	Falcom	7%
		7.50%
2012		7%
		8%
2013		6.50%
2014		8%
2015		8%
2016		8%
2017	United Securities	8%

Table 9 MENA analysts numbers, Oman

5. Qatar

Year	**Source**	**ERP**
2013		6%
2013	HSBC	4.50%

Table 10 MENA analysts numbers, Qatar

6. Palestine

Year	**Source**	**ERP**
2010		12.50 %
2011		15.00 %
2012	Awraq Investments	15%

Table 11 MENA anaylsts numbers, Palestine

7. Abu Dhabi

Year	**Source**	**ERP**
2011	HC Brokerage	6%
2013	HSBC	6%

Table 12 MENA anaylsts numbers, Abu Dhabi

8. Saudi Arabia

Year	**Source**	**ERP**
2003		7.30%
2004		7.80%
2005		8.85%
2006	BMG Financial Group	8.30%
2007	Falcom	6%
		6%
	Falcom	5%
2008	Audi Saradar	8.73%
	Falcom	5%
2009	Audi Saradar	8.60%
2010	Audi Saradar	6.57%
		13.23 %
	Audi Saradar	12.40 %
		13.20 %
2011	BLOMINVEST	
		12.23 %
		12.70 %
2012	Audi Saradar	
2013	HSBC	6%

Table 13 MENA analysts numbers, Saudi Arabia

CHAPTER VI

PURSUING NEW WAYS

I researched extensively for all the possible methodologies that can be used to calculate or estimate the equity risk premium; some of these are widely known and commonly used while some others are barely heard of, some of these methods are relatively new while others date way back in time. For most of these methods, we can see in literature a common agreement that their application for emerging markets still presents a lot of limitations and their results are still shaky and questionable. Countries of the MENA region are still divided into developing countries and emerging countries (with news that Saudi Arabia was promoted recently to emerging countries). Having developing and underdeveloped countries in the portfolio of the MENA region presents additional rigid challenges. Given the description of the methods (mentioned in chapter two and three of this document); I tried to subjectively assess those that would be the fittest for the MENA region. The subjective assessment was first based on the paper results as stated by the authors and by external parties who identified the major disadvantages of each. On a second level, I assessed the viability of the method based on the availability of the required data put in equation. Given this, I was inclined towards three methodologies that I thought will be able to deliver better results when applied to the MENA region, these are presented below.

A. Using accounting fundamentals

This study by O'Hanlon and Steele (2000) uses recent developments in the

theoretical modeling of the links between unrecorded accounting goodwill, accounting profitability and the cost of equity, together with capital asset pricing model (CAPM) betas, to estimate the ex-ante equity risk premium. In this method, as a first step, the cost of equity for each company in a specific country is estimated from a time series of company's return on equity and a corresponding time series of unrecorded goodwill. The cost of equity is the intercept in the regression equation below.

$$ROE_{i,t}=\gamma_{3,i}+\gamma_{4,i}SURG_{i,t}+\varepsilon_{i,t}$$

Simply put, the method starts by regressing the company's return on equity to its unrealized goodwill. With a panel data of return on equity and unrealized goodwill, we arrive at a cost of equity for the company that is the intercept of the regression equation. This is first applied to all the companies traded in a certain equity market. For the second step, the cost of equity is regressed against Dimson beta for all the companies in the sample. The cross-sectional plot gives an empirical Securities Market Line, the slope of this line is considered as an estimate for the equity risk premium as shown through the equation below:

$$k_i=a_1+a_2 b_i^d+\varepsilon_i$$

Additional details can be found by consulting the original paper. I was attracted by the model given that is it based on very objective numbers unlike inflation and other data that can either be manipulated or under/overrated. The needed data is also widely available in companies' financial reports. To apply this method, I chose the Egyptian market since the Egyptian exchange is one of the oldest stock markets established in the Middle East; it traces its origins to 1883 when the Alexandria Stock Exchange was established, followed by the Cairo Stock Exchange in 1903 and it has the highest number of traded stocks with the longest historical periods of trade. Unfortunately

however, the results were disappointing as they did not match to logical expected output. The result of the regression is presented below:

Regression output					confidence interval	
variables	coefficients	std. error	t (df=91)	p-value	95% lower	95% upper
Intercept	0.2294	0.0211	10.861	4.13E-18	0.1874	0.2713
BETA	-0.0803	0.0173	-4.648	1.13E-05	-0.1146	-0.0460

Table 14 Using accounting fundamentals regression output

The independent variable is beta and the dependent variable is the cost of equity. The intercept shown in table 14 is the risk-free rate and BETA is the companies betas used in the regression. As can be seen from the tabulated results, the regression suggests a negative equity risk premium of -8.03% and a risk-free rate of 22.9%. The input used for the correlation is presented in the table below.

Company	Cost of Equity	Beta
Commercial Intl Bank	0.1901	1.315
Global Telecom	0.2423	1.015
Telecom Egypt	0.0967	0.802
Abuo Kir Fertilizers	0.2534	0.434
Qatar National Bank	0.2456	1.147
Tmg Holding	0.0365	1.402
Vodafone Egypt	0.5161	0.367
Eastern Tobacco Co	0.2093	0.616
Efg-Hermes Holdings	0.0462	1.341
El Ezz Aldekhela	0.0675	1.048
El Sewedy Electr	0.0768	1.018
El Ezz Steel Rebars	0.0623	1.914
Heliopolis Hous	0.3960	1.472
Madinet Nasr For Hou	0.2761	1.42
Pioneers Holding Co	0.0423	1.919
Sidi Kerir Petrochem	0.3293	0.877
Suez Cement Company	0.1274	0.606
Acrow Misr	0.1882	1.345
Alexandria Cement	0.2984	0.947
Alexandria	0.1692	1.287
Alexandria Pharma	0.1975	0.598
Alexandria Mineral	0.2106	0.461
Alexandria Spinning	0.0374	1.608
Arab Ceramics Co	0.2861	0.703
Arab Cotton Ginning	0.1132	1.873
Arabia Inves	0.0484	1.447
The Egyptian Co. For	0.0726	0.151
Cairo Pharmaceutical	0.1570	0.823
Cairo Poultry	0.1607	1.079
Canal Shipping	0.1167	1.784
Credit Agricole	0.1727	1.073
Delta For Printing	0.1981	1.022
Delta Insurance Comp	0.1198	1.088
Delta Sugar Company	0.1515	0.899
Development And Engi	0.1267	1.377
East Delta Flour	0.2037	0.749
Egypt Aluminium	0.0732	1.01
Egyptian Iron	0.0465	1.699
Egyptian Chemical	0.1530	1.833
Egyptian Electrical	0.0481	1.182
Egyptian Finl & Ind	0.1008	1.525
Egypt Intl Pharmaceu	0.1470	0.303
Egyptian Media Prod	0.0211	1.666
Egyptians Abroad	0.0242	2.184
Egyptians Company	0.1149	2.043
Al-Ahly For Devel	0.0650	2.009
Al Ahram	0.1649	1.12

El Ezz Ceramics	0.0122	1.623
El Kahera Housing	0.0509	1.401
Export Development	0.0899	1.217
Extracted Oils	0.0484	1.61
Gb Auto S.A.E	0.1467	0.753
General Silos	0.1331	0.915
Giza General	0.0935	1.848
Housing & Developmen	0.1410	1.068
International Agri	0.0020	1.596
International Co	0.1723	1.416
Kafr El Zayat	0.1542	1.415
Lecico Egypt	0.0774	0.864
Memphis Pharma	0.0727	1.193
Mid & Wst Delta Mill	0.2284	0.585
Middle Egypt	0.1062	1.465
Misr Beni Suef	0.1719	0.664
Misr Cement Qena	0.0936	0.427
Misr Chemical Indust	0.1380	1.395
Misr Refrigerator	0.3063	0.457
Misr Duty	0.2299	0.515
Misr Hotels	0.1255	0.797
Misr Oil	0.0839	1.255
National Bank	0.1448	0.807
National Cement	0.1942	1.254
The Nile Co	0.1549	0.589
North Cairo Flour	0.1527	0.805
Nozha Inter	0.2143	1.529
Egypt Gas	0.1227	0.491
Orascom	0.0714	0.989
Orascom Hotels	0.1235	0.226
Oriental Weavers	0.1300	0.667
Pachin	0.1541	0.354
Palm Hills Develop	0.0226	1.948
Pyramisa Hotels	0.1472	0.935
Raya Holding	0.1200	1.373
Samad Misr Egyfert	0.0181	1.744
Sinai Cement Company	0.1908	1.191
Six Of October Dev	0.0276	1.732
South Cairo	0.1072	0.994
South Valley Cement	0.0535	1.496
Sues Canal Company	0.1235	0.684
Tourah Portland	0.0754	0.508
United Housing	0.1784	1.422
Upper Egypt For	0.1413	1.432
Upper Egypt Flour	0.2701	0.617
Faisal Islamic	0.1051	0.87

Table 15 Egyptian market cost of equity and beta used in regression

Beta values for the companies were extracted from Datastream and values for the cost of equity were taken as the intercept of the regression between company's return on equity and unrealized goodwill. Return on equity was calculated as net profit divided by the book value of equity, the values of which were extracted from Datastream. Unrealized goodwill was calculated as

$$\text{Unrealized Goodwill}_t = \frac{\text{Market Capitalization}_t - \text{Book Value of Equity}_t}{\text{Book Value of Equity}_{t-1}}$$

also values for market capitalization were retrieved from Datastream. The limitation however is presented in the limited available data for each company in terms of the above listed terms, the panel data ranged from 4 values to some companies up to less than 20 for others. With this small number of values, regression errors are increased. Below is a sample regression result for Suez Cement Company that included a panel of 16 entries for ROE and unrecorded goodwill.

Regression output					confidence interval	
variables	coefficients	std. error	t (df=13)	p-value	95% lower	95% upper
Intercept	0.1274	0.0312	4.077	.0013	0.0599	0.1949
URG	0.0252	0.0123	2.044	.0617	-0.0014	0.0519

Table 16 Sample cost of equity regression for Egyptian market

For the regression in table 16, the independent variable is the unrealized goodwill and the dependent variable is the return on equity. The variable URG refers to unrealized goodwill and the intercept is considered as the cost of equity. As such, the method may have led to plausible outcome if applied in more mature markets but as applied to the

Egyptian market, the results are unreliable due to the fact that the historical data for each company was limited.

B. Country risk rating

This method was presented by Erb, Harvey, and Viskanta (1996), it regresses the expected return in an emerging market against the country's credit ratings and the financial returns of the market. While it is or might be reflected in the risk-free rate, the riskiness of a certain market is affected by the riskiness of its government. This risk is denoted as the country credit rating and is thought to be a presentative number for the riskiness of the equities market; the advantage of this model is that it directly regresses the equity risk premium to the country's risk rating. This method seems like a logical replacement for using the risk-free rate of mature markets like the U.S., the equity risk premium of that market and adding a country risk premium. We hope with such method to have an equity risk premium specific to the local market without the need to add a country risk premium. Such method, when originally suggested by the author, may lead to plausible results. For its use in the MENA region, I suggest, for this method and the next one, to include data for only the concerned markets of the MENA region, excluding all other countries. As such, the data available will be a lot less but will reflect better how country credit rating interacts with the equity risk premium in the MENA region. The relationship between the two may exist in all markets, but its significance will change from one country to another. My suggestion takes the MENA region as one entity. The market in general is less liquid, less transparent, more affected by political and other turbulences that are very specific to the region. Given this, and

given that the equity risk premium is still a significant factor in the valuation and the returns of traded companies, regressing the equity risk premium with the MENA region country credit rating might lead to more significant results; with this, we are again faced by the limitation in the availability of data. In the future and with more equity markets opening in the region, we hope this will no longer be a limitation.

For the country risk rating, I took the long term rating for sovereign bonds issued by governments; I took the ratings that were available from Moody's, DBRS (aka Dominion Bank), Fitch, and S&P. For the market returns, I extracted from Datastream equity indices for each market, the source used was MSCI and I only looked at indices with United States dollar returns. The numbers reported are the percentage change. I started by extracting annual percentage change but due to the limited amount of available data, I extracted quarterly percentage change in returns given that for the same year I had different bond ratings for different months. I converted the alphabetic ratings according to the below table:

Rating	Correspondent
AAA	1
AA+	2
AA	3
AA–	4
A+	5
A	6
A–	7
BBB+	8
BBB	9
BBB–	10
BB+	11
BB	12
BB–	13
B+	14
B	15
B–	16
CCC+	17
CCC	18
CCC–	19
CC	20
C	21
D	22

Table 17 country risk rating conversion

First, the results presented below regress the country credit rating linearly to the market's return.

```
Random-effects GLS regression                   Number of obs = 79
Group variable: Country                         Number of groups = 9

R-sq:  within  = 0.0288                         Obs per group: min = 1
       between = 0.0033                                        avg = 8.8
       overall = 0.0028                                        max =  24

                                    Wald chi2(1)      =    0.22
corr(u_i, X)   = 0 (assumed)        Prob > chi2       =  0.6398

------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         CCR |   .2168145   .4632648     0.47   0.640    -.6911677    1.124797
       _cons |  -4.145523   5.460567    -0.76   0.448    -14.84804    6.556993
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  14.299919
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Table 18 Country risk rating linear model regression results

In the regression presented in table 18, the independent variable is the country risk rating (CCR) and the dependent variable is the equity market return (Y). The results imply that with every one unit increase in the country credit rating number which depicts a decrease in the country credit rating and thus an increase in risk, the required return will increase by 21.6%. According to the authors of the paper, the relationship between the equity market return and the country credit rating is not linear and is better

represented through a natural logarithmic equation. The results of the logarithmic regression are presented below:

```
Random-effects GLS regression                   Number of obs = 79
Group variable: Country                         Number of groups = 9

R-sq:  within  = 0.0172                         Obs per group: min =        1
       between = 0.0062                                        avg =      8.8
       overall = 0.0008                                        max =       24

                                        Wald chi2(1)      =      0.06
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.8087

------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lnCCR |   1.015056   4.192565     0.24   0.809    -7.202221    9.232333
       _cons |  -4.098194   10.00687    -0.41   0.682    -23.71129    15.51491
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  14.384951
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Table 19 Country risk rating loglinear model regression results

In the regression presented in table 19, the independent variable is the natural logartithm of the country's risk rating (lnCCR) and the dependent variable is the equity market return (Y). The results imply that with a one unit increase in ln(CCR), the expected return will increase by 1.01 or 101%. Logically speaking, the results make sense since we expect the return to increase with the increase in risk. However, if we compare the numbers with the results of the original paper, we realize that the numbers

are not exactly accurate and they are both, more or less, exaggerated results. In this method, the limitation presented is also in terms of data; for eleven countries in the Middle East, a total of 113 entries (with both a market return and a country credit rating) were found with some countries like Jordan, Kuwait, and Saudi Arabia having less than 7 entries. Given this result, the method cannot be used with this little number of data available.

C. International financial integration model

The study is presented by Boussiga and Abaoub (2013). The suggested method presents much strength in the original paper but presented many limitations and challenges during implementation; for the financial integration model, a direct application of the method on the MENA region was not possible. Data for FDI input and output were available for all the countries of the MENA region and so were inflation data. However the Crisis data used in the original paper were taken from Reinhart and Rogoff who constructed the measure for only few MENA countries, these include Algeria, Egypt, Morocco, and Tunisia. Given the way the measure was constructed, I thought of a workaround to either construct the variable for the remaining countries myself or to simply use the factors used in the construction of the measure as part of the main regression; in other words, decompose the Crisis measure within the main equation into its different factors. Economic Risk, as defined by the authors, was the volatility of quarterly GDP; data for quarterly GDP were totally missing for the MENA countries in all available databases and for all data providers. Let alone the fact that the mere measure of economic risk by the volatility of quarterly GDP is iffy and

very questionable. Consequently, instead of using GDP volatility, I used Debt to GDP as a measure for Economic Risk. Data for Debt to GDP was taken from the International Monetary Fund, World Economic Outlook Database (April 2014). Data for inflation and FDI input and output were taking from the World Bank. Data for exchange rates was extracted from Datastream, and in accordance with the original method, data for the equity risk premium was extracted from Damodaran's website.

The results of the longitudinal regression are presented below:

```
xtreg ERP Inflation IFI DebttoGDP Crisis ExchangeratetoUSD, re
note: IFI omitted because of collinearity

Random-effects GLS regression                   Number of obs     =        31
Group variable: Country                         Number of groups  =         3

R-sq:  within  = 0.2760                         Obs per group: min =         9
       between = 0.9494                                        avg =      10.3
       overall = 0.3846                                        max =        11

                                                Wald chi2(4)      =     16.25
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0027

------------------------------------------------------------------------------
         ERP |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   Inflation |   .0017713    .000722     2.45   0.014     .0003562    .0031863
         IFI |          0  (omitted)
  Debt to GDP |  -.0004204   .0001552    -2.71   0.007    -.0007246   -.0001162
      Crisis |  -.0015669    .007969    -0.20   0.844    -.0171858    .0140521
Exchange rate to USD |     .00244   .0007507     3.25   0.001     .0009687    .0039114
       _cons |   .0869866   .0090074     9.66   0.000     .0693324    .1046408
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  .01172675
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Table 20 Financial integration model regression results

In the regression presented in table 20, the independent variables are the international financial integration (IFI), inflation, debt to GDP, Crisis variable, and the exchange rate to USD, and the dependent variable is the equity risk premium (ERP). As can be noted from the regression results, data for IFI were omitted for collinearity. I thus decided to exclude Crisis data since the major factors are already accounted for in the main regression. New results are presented below:

```
xtreg ERP Inflation IFI DebttoGDP ExchangeratetoUSD, re

Random-effects GLS regression                   Number of obs      =       136
Group variable: Country                         Number of groups   =        11

R-sq:  within  = 0.0183                         Obs per group: min =        10
       between = 0.9125                                        avg =      12.4
       overall = 0.5843                                        max =        14

                                                Wald chi2(4)       =    100.77
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
         ERP |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
   Inflation |   .0001124   .0001557     0.72   0.470    -.0001927    .0004175
         IFI |  -4168448    3036007    -1.37   0.170    -1.01e+07     1782017
 Debt to GDP |    .00028    .000058     4.82   0.000     .0001662    .0003937
Exchange rate to USD |   .0000154   6.32e-06     2.43   0.015     3.00e-06    .0000278
       _cons |   .0622506   .0034127    18.24   0.000     .0555618    .0689393
-------------+----------------------------------------------------------------
     sigma_u |  .00422832
     sigma_e |  .01497774
         rho |  .07381441   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Table 21 Financial integration model regression resutls excluding Crisis variable

In the regression presented in table 21, the independent variables are the international financial integration (IFI), inflation, debt to GDP, and the exchange rate to USD, and the dependent variable is the equity risk premium (ERP). A preliminary reading for the above results shows that the relationship in general abides to logic; the effect of inflation in the regression is positive, as is the effect of crisis and economic risk measure. The effect of IFI is negative. These comply with our expectations. Comparing the results with those of the original paper, we see that they are not similar, on one side; economic risk in the original paper was negative while it is supposed to be positive (our results are more compliant). For the other measures, the results all seem logical in the exception of that of the IFI; this might be cause by either a miscalculation of the measure in our results or a wrong regression with the equity risk premium.

CHAPTER VII

CONCLUSION

Numerous methodologies to calculate the equity risk premium were studied for the emerging markets; these methods were presented in chapter three of this paper. Each methodology had its strengths and weaknesses as discussed in the different papers; they presented theoretical challenges and their limitations were clear, most of the time, while they may lead to logical numbers, subjectivity and feelings were needed and applied to arrive at what seemed to be a reasonable result. For the purpose of this paper, I applied three chosen methodologies to the MENA region, one of which was not specifically suggested under the title of emerging markets but presented qualities that I considered fit for such markets. However, and as can be noted from the results both in the corresponding sections under chapter six and in appendix II, the regressions and the results were deceiving and not applicable in practice. In fact, all three applied methods failed to present an alternative for calculating or estimating the equity risk premium. When they were first applied in the original paper, the results were not as deceiving; this helps in reaching a conclusion that the main weakness to applying these methods is not the theory itself but the strong lack of data and the questionability of its accuracy. With this in hand and looking back at all the methodologies presented here, we can directly judge that those requiring extensive historical data are not to be used. This in fact leaves us with two methods only; the implied equity risk premium of Damodaran and the survey method. These methods are based on forward looking measures and estimation in addition to general feelings towards the market. Thinking back through the numbers that analysts in the MENA region used in their equity research report, we sense a lot of

subjectivity and premiums added based on feeling and judgment; no number was derived from a long history of data and regressions but barely an average number of recent years' results.

In consequence, and as a concluding note, we sense a strong need to develop yearly equity risk premiums that are based on surveys similar to the work of Fernandez, with a focus on the region since Fernandez publications eliminate many MENA countries and base their reported numbers on a small number of responses compared to other developed markets. Also, the implied equity risk premium presented by Damodaran can be the base for further development that would take more into consideration the specific case of the region with all its present challenges and limitations.

APPENDIX I

SUMMARY OF ERP EQUATIONS

This appendix includes a summary of all the equations mentioned in this paper, starting with general methods used internationally then methods suggested for emerging markets.

1. The historical average realized returns = average annual equity index return minus the average return on government debt over a period of time
2. Implied equity risk premium - Dividend yield method

$$\text{Cost of Equity}=\frac{\text{Dividend}}{\text{Price}}+\text{Growth Rate}$$

3. Implied equity risk premium - Dividend discount model

$$\text{Price}_0=\sum_{t=1}^{\infty}\frac{\text{Dividend}_t}{(1+\text{Cost of Equity})^t}$$

4. Constant Sharpe ratio method

$$\text{Market Sharpe Ratio}=\frac{\text{Portfolio Market Risk Premium}}{\text{Volatility of Market Risk Premium}}$$

5. The earnings method

$$\text{Equity Risk Premium}=\{[(1+EINFL)(1+EGREPS)(1+EGPE)-1.0]+EING\}-\text{Expected Risk-Free Return}$$

6. O'Hanlon and Steele accounting fundamentals

$P(z_t)=\beta_1 x_t+\beta_2 y_t+\beta_3 d_t+\beta_4 v_t$, where $P(z_t)$ is the market value of equity capital, x_t is the accounting earnings for the period ended at time t; y_t is the accounting (or book) value of equity capital at time t; d_t is the dividend paid at time t, and v_t is all other information available at time t.

7. Dimson, Marsh, and Staunton (2006)

$$1+ERP_t=\frac{(1+Gd_t)(1+GDP_t)(1+Y_t)(1+X_t)}{(1+Rf_t)}$$

8. The risk premium factor

Equity Risk Premium=Risk-Free Longterm Rate×Risk Premium Factor

9. The enhanced risk premium factor model

$$E(ERP_{1t})=(a+bCAPE_{0t})y_{0t} \text{ where } E(RPF_{1t})=a+bCAPE_{0t}$$

Methods suggested specifically for emerging markets

10. World risk premium and world CAPM

Cost of Equity=Risk-Free Rate+Beta×World Risk Premium

11. Globally nested CAPM

Cost of Equity=Risk-Free Rate of Return+$(\beta_1 \times$World Risk Premium$)$+$(\beta_2 \times$Regional Risk Factor)

12. The downside risk approach

Cost of Equity=Risk-Free Rate+Downside Risk×World Market Risk Premium

13. Damodaran country risk premium model

Cost of Equity=Risk-Free Rate+ β×Mature Market ERP+Country ERP

where

$$\text{Country Equity Risk Premium}=\text{Country Default Spread}\times\frac{\text{Equity Standard Deviation}}{\text{Bond Standard Deviation}}$$

14. Goldman Sachs country spread model

Cost of Equity=Sovereign Yield Spread+Risk-Free Rate+β×US ERP

15. Relative standard deviation model

Cost of Equity=Risk-Free Rate+Relative Standard Deviation×US ERP

where

$$\text{Relative Standard Deviation of Country X}=\frac{\text{Standard Deviation of Equity Market of Country X}}{\text{Standard Deviation of Equity Market of U.S.}}$$

16. Goldman Sachs segmented model

$$\text{Cost of Equity}=\text{Sovereign Yield Spread}+\text{Modified }\beta\times\text{US ERP}$$

where

$$\text{Modified }\beta=\frac{\text{Standard Deviation of Local Market in USD}}{\text{Standard Deviation of US Market}}$$

17. Goldman Sachs global emerging markets model

$$\text{Cost of Equity}=\text{Sovereign Yield Spread}+\text{Risk-Free Rate}+\text{Modified }\beta\times\text{US ERP}\times\text{Double Counting Adjustment}$$

18. Country risk rating model

$$\text{Linear model: } R_{i,t+1}=\gamma_0+\gamma_1 CCR_{it}+\varepsilon_{i,t+1}$$

$$\text{Log-linear model: } R_{i,t+1}=\gamma_0+\gamma_1 ln(CCR_{it})+\varepsilon_{i,t+1}$$

19. International financial integration, inflation and economic risks model

$$ERP_{it}=\alpha_i+\beta_1 IFI_{it}+\beta_2 inflation_{it}+\beta_3 Econ.Risk_{it}+\beta_4 Crisis_{it}+IFI_{it}\times Crisis_{it}+\varepsilon_{it}$$

APPENDIX II

This appendix summarizes the three methods applied in this paper and the resulting equity risk premiums.

1. O'Hanlon and Steele (2000) using accounting fundamentals

$$\text{Cost of Equity} = 22.9\% - \beta\ 8.03\%$$

2. Erb, Harvey, and Viskanta (1996) country risk rating

$$\text{Linear model: } R_{i,t+1} = -4.1 + 21.6\%\ CCR_{it}$$

$$\text{Log-linear model: } R_{i,t+1} = -4.1 + 101.5\%\ \ln(CCR_{it})$$

3. Boussiga and Abaoub (2013) Financial integration model

$$ERP_{it} = 6.23\% - 4168448IFI_{it} + 0.011\%\ \text{inflation}_{it} + 0.028\%\frac{\text{Debt}}{\text{GDP}} + 0.002\%\ \text{exchange rate to USD}$$

Given the the results for the 1st and 3rd method are illogical; I did not try to apply them to current numbers for countries in the MENA region. I applied both the linear and log-linear models of Erb, Harvey, and Viskanta (1996) on current country credit ratings of the MENA region. Though the methods did not present illogical results, the actual returns returned by the two methods were illogical. The results are presented in the tables below.

The Results of Erb, Harvey, and Viskanta (1996) country risk rating, linear model

Country	CCR	CCR converted to numbers	Return
Algeria	BBB-	10	-1.94
Bahrain	BBB	9	-2.156
Egypt	B-	16	-0.644
Jordan	BB-	13	-1.292
Kuwait	AA	3	-3.452
Lebanon	B-	16	-0.644
Morocco	BBB-	10	-1.94
Oman	A	6	-2.804
Qatar	AA	3	-3.452
Saudi Arabia	AA-	4	-3.236
Sudan	C	21	0.436
Tunisia	BB	12	-1.508
UAE	AA	3	-3.452
Yemen	CCC	18	-0.212

Table 22 Results of country risk rating linear model applied

Results of Erb, Harvey, and Viskanta (1996) country risk rating, log-linear model

Country	CCR	CCR converted to numbers	Natural logarithm of CCR	Return
Algeria	BBB-	10	2.302585	-1.76288
Bahrain	BBB	9	2.197225	-1.86982
Egypt	B-	16	2.772589	-1.28582
Jordan	BB-	13	2.564949	-1.49658
Kuwait	AA	3	1.098612	-2.98491
Lebanon	B-	16	2.772589	-1.28582
Morocco	BBB-	10	2.302585	-1.76288
Oman	A	6	1.791759	-2.28136
Qatar	AA	3	1.098612	-2.98491
Saudi Arabia	AA-	4	1.386294	-2.69291
Sudan	C	21	3.044522	-1.00981
Tunisia	BB	12	2.484907	-1.57782
UAE	AA	3	1.098612	-2.98491
Yemen	CCC	18	2.890372	-1.16627

Table 23 Results of country risk rating log-linear model applied

APPENDIX III

Below is a list of financial institutions and firms in the MENA region that are possible providers of valuation services given their company's description and the nature of their business. The list is sorted alphabetically by entity name.

Entity	**Location**	**Website**
ABC Investments	Jordan	www.abci.com.jo
Abu Dhabi Commercial Bank	UAE	www.adcb.com
Ahli Bank - Oman	Oman	ahlibank.om
Akkadia Partners	Iraq	akkadiapartners.com
Al Arabi Investment Group	Jordan	www.ab-invest.net
Al Madina Financial & Investment Services	Kuwait	www.almadinainvest.com
Al Maha Financial Services LLC	Oman	www.almahafinancial.com
Al Mal Capital	Dubai	www.almalcapital.com
Al Masah Capital	Dubai	www.almasahcapital.com
Al Rajhi Capital	KSA	www.alrajhi-capital.com
Albilad Capital	KSA	www.albilad-capital.com
Aljazira Capital	KSA	www.aljaziracapital.com.sa
Alpen Capital	Dubai	www.alpencapital.com
Al-Rabee Securities	Iraq	www.rs.iq
AlShall Consulting Company	Kuwait	www.alshall.com
Amin Advisory		aminadvisory.com
Amwal Invesment SAOC	Oman	
Amwal Invest	Jordan	www.amwalinvest.com
Arab African Investment Management	Egypt	www.aaim.com.eg/about-aaim
Arab Finance Corporation	Lebanon	www.afc.com.lb
Audi Saradar Invesment Bank	Lebanon	www.audicapital.com
Audi Saudi Arabia	KSA	www.audi-me.com
AWRAQ Invesments	Jordan	www.awraq.com
Bank Dhofar	Oman	www.bankdhofar.com
Bank Muscat	Oman	www.bankmuscat.com
Bayan Invesment Company	Kuwait	www.bayaninvest.com
Beltone Financial	Egypt	www.beltonefinancial.com
BLOMINVEST Bank SAL	Lebanon	www.blominvestbank.com
BMG Financial Advisors	KSA	www.bmg.com.sa
Byblos Bank	Lebanon	www.byblosbank.com.lb
Capital Bank of Jordan	Jordan	www.capitalbank.jo
Capital Investments	Jordan	www.capitalinv.jo
CDG Capital	Morocco	www.cdgcapital.ma
CI Capital Research	Egypt	www.cich.com.eg/research.html
Coast Invesment and Development Company	Kuwait	www.coast.com.kw
Credit Libanais	Lebanon	www.creditlibanais.com.l

		b
Damac Capital International Ltd	Dubai	
Dubai Financial Services Authority	Dubai	www.dfsa.ae
Dubai International Financial Centre	Dubai	www.difc.ae
Falcom Financial Services	KSA	www.falcom.com.sa
FFA Private Bank	Lebanon	www.ffaprivatebank.com
FINCORP	Oman	www.fincorp.org
Global Investment House	Kuwait	www.globalinv.net
Gulf Baader Capital Markets	Oman	www.gbcmoman.net
Gulf Capital Group	Abu Dhabi	www.gulfcapital.com
Gulfmena Alternative Investments Ltd	Dubai	www.gulfmena.com
HC Brokerage	Egypt	www.hc-si.com
Horizons Capital Markets SAOC	Oman	www.hcmoman.com
ICIEC	KSA	www.iciec.com
Injaz Mena Invesment	UAE	www.injazmena.com
Jadwa Investment	KSA	www.jadwa.com
Jazira Capital	Egypt	https://www.jaziracapital.com
Jordan Ahli Bank	Jordan	www.ahli.com
Jordan Investment Trust Plc	Jordan	jordinvest.com.jo
KAMCO	Kuwait	www.kamconline.com
Kuwait and Middle East Financial Investment Company	Kuwait	www.kmefic.com.kw
Kuwait Financial Centre	Kuwait	www.markaz.com
Madar Research Group	Dubai	www.madarresearch.com
Maeem Holding	Egypt	www.naeemholding.com
Middle East Brokerage Company	Kuwait	www.mefbc.com
Middle East Rating & Investors Service	Egypt	www.merisratings.com
Muscat Capital Research	KSA	www.muscatcapital.com.sa
NBK Capital	Kuwait	www.nbkcapital.com
NCB Capital	KSA	www.ncbc.com
QNB Financial Serivces	Qatar	www.qnb.com.qa/qnbfs
Rasmala	Dubai	Financial Results For T
Shuaa Capital PSC	Dubai	www.shuaa.com
SICO Investment Bank	Bahrain	www.sicobahrain.com
The National Investor	Abu Dhabi	www.tni.ae
Tunisie Valeurs	Tunisia	www.tunisievaleurs.com
United Securities	Jordan	http://usoman.com.om/
Zawya Research	Lebanon	https://www.zawya.com/researchmonitor

Table 24 Providers of valuation services in the MENA region

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