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By E. Chuke Nwude
University of Nigeria Nsukka, Enugu Campus

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Estimation of Equity Risk Premiums (ERP) in an Emerging Stock Market: The Nigerian Case

E. Chuke Nwude

Abstract - Obviously the equity risk premium (ERP) is an important parameter in finance, more especially in fixing the cost of equity capital and giving values to assets. However, its estimation has challenged academics, analysts and other practitioners in the field of finance as to which of the estimation approaches presents the best result for practical application. It was also observed that most of the studies on this important aspect of finance have been mostly conducted in the developed stock markets with very little or none done on some of the emerging markets. With this in mind, the researcher was moved to place an emerging stock market on the map of researches on the ERP. At the end of the study it was discovered that as it is in the literature, arithmetic average yields higher risk premiums than the geometric average as can be seen in tables 4.5 and 4.6. For the period 2000-2011, an arithmetic average risk premium, for stocks over T-bills of 1.41% and a geometric average risk premium of -5.01% were reported. Based on the computations and analysis carried out in this study, it is hereby recommended that the Cumulative Arithmetic Mean type of averaging the returns should be engaged in the determination of market risk premium, especially in the emerging stock markets as it yields the best result.

Keywords : *equity premium, equity risk premium, market risk premium, market premium, risk premium, survey risk premium, historical risk premium, implied risk premium.*

I. Introduction

In corporate financial analysis, valuation and portfolio management, the notion that riskier investments should have higher expected returns than safer investments is a key in investment decisions and the expected return on any investment is taken as the sum of the risk-free rate and a risk premium to compensate for the risk. According to Damodaran (2011), "the disagreement, in both theoretical and practical terms, remains on how to measure the risk in an investment, and how to convert the risk measure into an expected return that compensates for risk. A central number in this debate is the premium that investors demand for investing in the average risk equity investment, i.e., the equity risk premium". In finance, equity risk premium is a key input into the estimation of costs of equity capital and valuation. Given its importance, it is surprising to observe that most of the works done in this area were carried out mostly on developed stock markets with minimal attention, if at all, paid to the emerging stock markets like Nigeria. Drawing heavily from the works of Damodaran(2008, 2009, 2010, 2011), attempt was made in this paper to look at the economic determinants of equity risk premium and estimate the values of the equity risk premium applicable to Nigeria using historical data drawn from the respective sectors of the Nigerian stock market. Damodaran(2011) claims that in the standard approach to estimating equity risk premium, historical returns are used, with the difference in annual returns on stocks versus default-free securities over a long time period comprising the expected risk premium. He states that this approach can be used in markets which have long periods of historical data available. Other approaches he suggested are the survey approach, where investors and managers are asked to assess the risk premium and the implied approach, where a forward- looking estimate of the premium is estimated using either current equity prices or risk premium in non-equity markets.

The equity risk premium reflects fundamental judgments we make about how much risk we see in an economy/market and what price we attach to that risk. This price attached to risk then affects the expected return on every risky investment and the value that we estimate for that investment. ERP is a key input not only in investing but also in corporate finance. The hurdle rates used by companies, that is, cost of equity and capital are affected by the ERP that they use and have significant consequences for investment, financing and dividend decisions. The rest of this paper is organized as follows. Section 2 addressed the concepts of the study and the review of related literatures. Section 3 shows the methodology of the research while section 4 presents estimated values of ERP and the analysis. Section 5 concludes the paper.

II. Review of Related Literature

Risk, as we know, is the variance in actual returns around an expected return and its index of measurement is the standard deviation, which is represented thus, $SD = [\sum(x - xe)^2/n\text{-}1]^{1/2}$. An investment is riskless when its actual returns are always equal to the expected return. Equity risk premium (ERP) is the premium that investors demand for the average risk investment, and by extension, the discount that they apply to expected cash flows with average risk. When

Author : Department of Banking and Finance, Faculty of Business Administration, University of Nigeria Nsukka, Enugu Campus.
E-mail : chukwunekenwude@yahoo.com

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equity risk premium (ERP) rises, investors are charging a higher price for risk and will therefore pay lower prices for the same set of risky expected cash flows. Equity risk premium (ERP) is a market-wide number as it is not company or asset specific but affects expected returns on all risky investments in the entire market. Using a larger ERP will increase the expected returns for all risky investments and by extension, reduce their value. It shows its importance in the determination of cost of equity capital and valuation. Its determinants involve investor risk aversion, information uncertainty and perceptions of macroeconomic risk prevailing in an economy. Its bases of determination include survey of subsets of investors and managers, historical returns (i.e. difference in annual returns on stocks and default-free securities or assets) and the implied approach. As we are aware, expected return on any investment is the sum of the rate of return on default-free or riskless investment and the risk premium (i.e. the rate of return that compensates for the risk involved in a risky investment. Mathematically, this is stated as $Re = Rf + \beta(Rm - Rf)$.

In the Capital Asset Pricing Model (CAPM), market risk of a risky asset or stock is measured by beta (β) which when multiplied by the ERP yields the total risk premium for a risky asset. That is, total equity risk premium for a risky asset (Rp) is equals to its beta multiplied by the equity risk premium (ERP) for the entire equity stock market portfolio (i.e. $Rp = \beta(Rm - Rf)$. Hence, from our definition of expected return, that for a risky asset at any point in time is represented by $Re = Rf + \beta(Rm - Rf)$. That is, ERP for the entire equity market is $Rm - Rf$ while that of a specific equity stock is $\beta i(Rm - Rf)$. Therefore, **expected return on any risky investment = Risk-free Rate +Beta of the risky asset (ERP).** In Arbitrage Pricing Model (APM) and multi-factor model, beta is estimated against individual market risk factors, and each factor has its own price (risk premium). In APM, expected return on any risky investment = Risk-free Rate +sum of the products of the risk premium and the respective beta of various factors. The risk premium used here is the risk premiums for individual (unspecified or specified) market risk factors. In proxy models, expected return on any risky investment = a + b(proxy 1) + c(proxy 2). The proxies are firm characteristics such as market capitalization, price to book ratios or return momentum. In proxy models, no explicit risk premium computation, but coefficients on proxies reflect risk preferences. In a world where investors are risk neutral, asset value is obtained from the present value of expected cash flows at risk-free rate. In another clime where investors are risk averse, asset value is generated from the present value of expected cash flows at risky discount rate. With risk-loving or risk-taking investors, asset value is provided from the present value of expected cash flows at risky discount rate.

On the determinants of ERP are the risk aversions of investors, economic risk, information uncertainty, liquidity, and catastrophic risk. High risk aversion investors beget higher ERP. That is, the more the risk aversion the higher the ERP. As the risk aversion declines, ERP will fall. Investors risk aversion depends on age(Bakshi and Chen, 1994) and preferences (Damodaran, 2011) for future or current consumption. The older the investors the more risk averse and the higher the ERP. The younger the investors the less risk averse and the lower the ERP. Investors' preference for current consumption over future consumption increases ERP. Conversely, Investors' preference for future consumption over current consumption decreases ERP. That is, ERP increases as savings rate decreases and decreases as savings rate increases.

On the impact of economic risk on ERP, the economy with predictable inflation, interest rates and economic growth should have lower ERP than one that is volatile in these variables. Lettau, Ludwigson and Wachter (2007) link the changing ERP in US to shifting volatility in the real economic variables which include employment, consumption and GDP growth. Individuals will choose a lower and more stable level of wealth and consumption that they can sustain over the long term over a higher level of wealth and consumption that varies widely from period to period. Constantinides (1990) notes that individuals become used to maintaining past consumption levels and that even small changes in consumption can cause big changes in marginal utility. Hence the stock returns are correlated with consumption, decreasing in periods when people have fewer goods to consume and the additional risk explains the higher observed ERP. Using dividend yield as proxy for risk premium they establish the close relationship between the volatility in GDP growth rate and the Dividend yield over a very long time period (1885-2005). Though studies that looked at the relationship between the level of inflation and ERP find little or no correlation, Brandt and Wang (2003), Modigliani and Cohn (1979) present evidence that ERP tend to increase if inflation is higher than anticipated or expected and decrease when it is lower than expected. Campbell and Voulteenaho (2004) related changes in dividend yield to changes in the inflation rate over time and find strong support for the findings of Brandt and Wang (2003), Modigliani and Cohn (1979). In the words of Damodaran (2011:9), reconciling the findings, it seems reasonable to conclude that it is not so much the level of inflation that determines ERP but uncertainty about that level.

On information uncertainty, the higher the confidence reposed on the level of volatility in earnings and cash flows reported by individual firms in the economy the lower the ERP and vice versa. More precise information should lead to lower ERP while more complex information should lead to higher ERP.

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Information here relates to future earnings and cash flows. Yee (2006) says that earnings quality depicts the level of volatility of future earnings and that ERP should increase (decrease) as earnings quality decreases (increases). Investors demand large ERP to compensate them for the added uncertainty if earnings volatility is high.

In considering additional risk created by illiquidity of in equity market, investors need to demand large discounts on estimated value as they need to pay transaction costs in liquidating their equity positions. This means they would pay less for equities today which warrant demand for a large ERP. Therefore, a situation where it is envisaged that there will be high transaction costs as a result of illiquidity, when investors want to liquidate their equity positions demand high ERP. Gibson and Mougeot (2002) conclude from study of US stock returns (1973-1997) that liquidity accounts for a significant component of the overall ERP, and that its effect varies over time. Baekart, Harvey and Lundblad (2006) show evidence that the differences in equity returns (and risk premiums) across emerging markets can be partially explained by differences in liquidity across the markets.

Catastrophic risk is caused by events that occur infrequently but can cause dramatic drops in wealth. For example, the great depression from 1929-1930 in US, collapse of Japanese equities in the 1980s. When there is possibility of catastrophic risk occurring the higher the ERP. Rietz (1988), Barro (2006), Gabaix (2009), Barro, Nakamura, Steinsson and Ursua (2009) studied the possibility of catastrophic events on ERP and find that the average length of a disaster is six years and that half of the short run impact is reversed in the long term. On the appropriateness or compatibility of ERP observed in practice with what obtains in theory, it all depends on the level of risk aversion coefficient assumed in the analysis.

From Damodaran (2011:15), there are three broad approaches used to estimate ERP. One is to survey subsets of investors and Managers to get a sense of their expectations about equity returns in the future. The second is to assess the returns earned in the past on equities relative to riskless investments and use this historical premium as the expected. The third is to attempt to estimate a forward-looking premium based on the market rates or prices on traded assets today and this is termed implied premium. In survey premium the challenge is finding the right subset of investors that best reflects the aggregate market. The Securities Industry Association (SIA) surveyed investors from 1999 to 2004 on the expected return on stocks and yields numbers that can be used to extract ERP. In the 2004 survey of 1500 US investors, the median expected return was 12.8% which yields a risk premium of about 8.3% over the Treasury bond rate at that time. The survey yielded expected return of 10% in 2003, 13% in 2002, 19% in 2001, 33% in 2000, and 30% in 1999 (Damodaran, 2011:16). Merrill Lynch, in its monthly survey of institutional investors globally reports average ERP of 3.5% in February 2007, 4.1% in March 2007 after a market downturn, 3.76% in January 2010, range of 3.85-3.90% for the rest of 2010, and 3.86% in January 2011. Graham and Harvey (2010; 2009) survey of Chief Financial Officers (CFOs) of companies from 2000-2010, report a mean and median ERP of 4.74% and 4.3% in February 2009 and 3% and 2.7% in June 2010 respectively. They observed peak ERP in September 2000 at 4.65%, lowest of 2.47% in September 2006, and an average of 3.38% across all 10 years of survey on about 9000 responses. Welch (2000) survey of 226 financial economists reports an arithmetic mean annual ERP of about 7% for a ten-year time horizon and 6-7% for one to five-year time horizons.

Fernandez (2010a) examined widely used textbooks in corporate finance and valuation and noted that ERP varied widely across the books and that the moving average premium has declined from 8.4% in 1990 to 5.7% in 2008 and 2009. His survey of academics in 2010 Fernandez (2010b) concludes that Professors in the US used an average ERP of 6%, compared to 5.3% being used by European Professors. Fernandez et al (2011a), survey with 5,731 answers on which US Market Risk Premium (MRP) used in 2011 by Professors, analysts and companies, report that Professors used 5.7%, analysts used 5%, companies used 5.6%. Fernandez et al (2011b), survey with 6,014 answers shows the Market Risk Premium (MRP) used in 56 countries in 2011. Studies that have looked at the efficacy of survey premiums indicate that if they have any predictive power, it is in the wrong direction. Fisher and Statman (2000) document the negative relationship between investor sentiment both individual and institutional, and stock returns. That is, investors becoming more optimistic and demanding a larger premium, is more likely to be a precursor to poor rather than good market returns.

According to Damodaran (2011:20), the most widely used approach to estimating ERP is the historical approach, where the actual returns earned on stocks over a long time period is estimated, and compared to the actual returns earned on a default-free (usually government security). The difference on an annual basis between the two returns is computed and represents the historical ERP. This approach is good given that we are almost looking at the same historical data. However, differences may occur between the Historical ERP and actual ERP being used in practice because of three reasons viz, different time periods for estimation, differences in index of measuring Risk-free rates and market return indices, differences in the way in which returns are averaged overtime. For the time period, the longer and more current the time period covered the lower the standard error of estimating ERP and the

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estimation one can use either short term government securities (Treasury bills) or long term government securities (Treasury bonds). Larger ERP is obtained when using Treasury bills than the Treasury bonds. Some practitioners and academics use Treasury bills rate as the risk-free rate with the alluring logic that there is no price risk in a Treasury bills whereas the price of a Treasury bond can be affected by changes in interest rates over time. This argument makes sense only if we are interested in a single period ERP, say for next year. If our time horizon is longer, say 5 or 10 years, it is Treasury bond that provides the more predictable returns. The third choice is to use Treasury bills rate plus term structure spread to get a normalized long term rate. In estimating market return, using the broadest market-weighted index of stocks with a long history is good. On averaging to project the future ERP, the argument in corporate finance and valuation that using the GM presents a better picture than the AM is strong. This is because returns on stocks are negatively correlated, that is, good years are more likely to be followed by poor years and vice versa, and the AM is more likely to overstate the ERP. This is also why AM yields higher values than the GM. The GM is better for much longer period than a year (Fama and French, 1992).

Fernandez (2007:3) states that the historical equity premium (HEP) is the historical average differential return of the market portfolio over the risk-free debt and this average differential return may be arithmetic or geometric mean. Different stock market indexes are used as the market portfolio and government bonds or bills of different maturities are used as risk-free debt. According to Fernandez (2007:4), Ibbotson Associates (2006) used the income return (the portion of the total return that results from a periodic bond coupon payment) of the government bonds (5.2%) and average return on the S&P 500 (12.3%) to produce HEP of 7.1% for 1926-2005. In the same time period using Treasury bills rate of 3.8% they produced HEP of 8.5% under the arithmetic mean and 6.7% (i.e. 10.4-3.7) under the geometric mean. Ibbotson and Chen (2003) using the New York Stock Exchange (NYSE) database for 1926-2000 on historical equity returns conclude that the expected long term equity premium (relative to the long term government bond yield) is 5.9% arithmetically and 3.97% geometrically. Goetzmann, Ibbotson and Peng (2001) employed a new NYSE database for 1815-1925 to estimate the US equity returns and the HEP since 1792 (without dividend data in pre-1825 and incomplete in 1825-1871) and produced HEP relative to bonds of 3.76% arithmetically and 2.83% geometrically for 1792-1925, 6.57% arithmetically and 4.99% geometrically for 1926-2004. With Treasury bills rate they produced HEP of 8.63% arithmetically and 6.71% geometrically for 1926-2004. Dimson and Marsh (2001) calculated the geometric HEP for 1955-1999 of US, UK, Germany and Japan and obtained 6.2%, 6.2%, 6.3% and 7% respectively.

While historical ERP approach is backward-looking, the implied ERP approach is forward-looking. The implied ERP can be obtained using the intuition from the rate of return approach. Rate of return = cash flows/purchase cost. We can argue that ERP = rate of return = cash flows/current market price for equity. According to the Gordon (1962) model, the current price per share is the present value of expected dividends discounted at the required rate of return. Using Gordon (1962) model with perpetual sustainable constant stable growth rate in dividends and earnings, Value of equity = expected dividend next period/(required return on equity-expected growth rate) = D1/(k-g) = D(1 + g)/(k-g). From this model the implied required return on equity = [D(1+g)/value of equity]+g. Then subtracting the risk-free rate from the implied required return on equity yields an implied risk premium.

If we use the stable growth discounted dividend model (DDM) as the base model for valuing equities and assume that the growth rate (g) = risk-free rate (Rf), then dividend yield (i.e. dividend/market price) on equities becomes the measure of the ERP. That is, Value of equity = D(1 + g)/(k-g). **From this, k-g = D(1+g)/Current market value of equity = Dividend yield = k-Rf = ERP.** This view is supported by Rozeff (1984), Fama and French (1988) and Damodaran (2002 and 2011). This model will not hold if companies do not payout dividend and if earnings are expected to grow at extraordinary rates for the short term (Damodaran, 2011:57). Fama and French (2002) using the DDM, estimated the implied equity premium (IEP) for the period 1951-2000 between 2.55% and 4.32%, far below the HEP (7.43%). For the period 1872-1950, they estimated an IEP (4.17%) similar to HEP (4.4%).

Using earnings approach and focusing on earnings instead of dividends, we state the expected growth rate (g) as a function of the payout ratio and return on equity, thus g = [1 – (dividends/earnings)](return on equity) = [1 – payout ratio](return on equity). Substituting g back into the stable growth model, we have Value of equity = D(1 + g)/(k-g) = expected earnings next period(payout ratio)/ (required return on equity-expected growth rate) = expected earnings next period(payout ratio)/(required return on equity- [(1 – payout ratio)(return on equity)]. Assume that required return on equity = return on equity, which means no excess return, the equation simplifies to Value of equity = expected earnings next period (payout ratio)/-[(required return on equity- required return on equity + (payout ratio)(return on equity)] = expected earnings next period(payout ratio)/[(payout ratio)(return on equity)] = expected earnings next period/return on equity. Hence, return on equity = expected earnings next period/ Value of equity = E(1+g)/MV = Earnings yields = 1/PE ratio. Therefore, required return on equity

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= expected earnings next period/Current market Value of equity = E (1+g)/MV = Earnings yields = 1/PE ratio and when risk-free rate is subtracted from its value, implied ERP suffices. **That is, with earnings approach, implied ERP = Earnings yields on NSE All-Share Index minus risk-free rate = (Aggregate earnings on NSE All-Share Index for each year divide by Current market value of the index) minus risk-free rate.**

Brennan (2004) admits that different classes of investors may have different expectations about the prospective returns on equities which imply different assessments of the risk premium. Bostock (2004) says that understanding the equity premium is largely a matter of using clear terms. These statements, I believe, propelled Fernandez (2007) to designated equity premium (also called market risk premium, equity risk premium, market premium, and risk premium) in four different concepts: Historical Equity Premium (HEP); Expected Equity Premium (EEP); Required Equity Premium (REP); Implied Equity Premium (IEP). Fernandez (2007) posits that provided that analysts use the same time frame, the same market index, the same risk-free instrument and the same averaging method (arithmetic or geometric), HEP is equal for all investors. The REP, the EEP and the IEP differ for different investors.

III. Methodology

Being an empirical study, analytical research design is adopted. The data used are secondary data, which were collected from Nigerian Stock Exchange (NSE) publications, and Central Banks of Nigeria(CBN) publications. In this study we need the following data: Quarterly rates of return on Federal Government of Nigeria (FGN) Treasury Bills issued from 2000-2011, obtained from CBN Statistical Bulletin; Daily NSE All-Share Index (ASI) from 2000-2011, obtained from The Nigerian Stock Exchange Daily Official List. From these data, the actual returns from the stock market and the risk-free rates for years 2000-2011 are computed. The population for this study is defined as all equity stocks quoted on the Nigerian Stock Exchange for the period January 2000 to December 2011.

We used Treasury Bills rate as risk-free rate because especially in Nigerian emerging capital market there is no price risk in Treasury Bills whereas the price of a Treasury bond can be affected by changes in interest rates over time. Secondly, we are only interested in a single period ERP which is annually. Therefore, the ERP is the premium the equity market earned over the Treasury Bills rate. The Treasury bond rates are ignored because the usage in Nigeria is still at its embryonic stage.

All-Share Index (ASI) of the Nigerian Stock Exchange (NSE) was used to compute the equity market stocks returns. This is chosen because it has a long history. It is the broadest index of stocks that is market-weighted which reflects the overall returns on equities. On the issue of finding the average returns on stocks, Treasury Bills (or even Treasury Bond), it is argued that when returns on stocks are negatively correlated over time, Arithmetic Mean (AM) is likely to over state the premium hence not ideal for period longer than a year. The AM return measures the simple mean of the series of annual returns whereas the Geometric Mean (GM) looks at the compounded return. It is stated in Damodaran (2011:23) that if annual returns are uncorrelated over time and the objective is to estimate the ERP for the next year, AM is the best and most unbiased estimate of the ERP. In this study, we used GM to find the yearly compounded stock return from the monthly (January-December) stock returns for each stock for each year. We used AM to find the monthly average NSE-ASI and each stock monthly market price per share, from which monthly returns were computed in terms of capital gains. For each stock, dividend yield was computed based on the amount of dividend paid and the AM of the stock market price for each year. The sum of the dividend yield and the capital gain yield provides the total actual return of each stock for each year. Then AM and GM are applied respectively to the yearly ERPs to get the mean ERP for the years involved.

IV. Data Presentation and Analysis

Table 4.1 : ERP Using Arithmetic Annualized Monthly Returns

n	Year	Arithmetic Mean of Rm	Arithmetic Mean of Rf	ERP
1	2000	39.71	12.00	27.71
2	2001	39.74	12.95	26.79
3	2002	7.95	18.88	-10.93
4	2003	53.48	15.02	38.46
5	2004	20.33	14.21	6.12
6	2005	5.15	7.00	-1.85
7	2006	32.88	8.80	24.08
8	2007	54.28	6.91	47.37
9	2008	-54.68	8.58	-63.26
10	2009	-30.07	6.05	-36.12
11	2010	18.74	4.72	14.02
12	2011	-18.88	10.68	-29.56

Table 4.1 contains the arithmetic mean annual returns computed from each year's respective January to December monthly returns.

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Table 4.2 : ERP Using Cumulative Arithmetic Average of Annual Returns

n	Year	Rm	Rf	Cum Arithmetic Mean of Rm	Cum Arithmetic Mean of Rf	ERP
1	2000	39.71	12.00	37.91	12.00	25.91
2	2001	39.74	12.95	38.10	12.48	25.62
3	2002	7.95	18.88	27.75	14.61	13.14
4	2003	53.48	15.02	33.77	14.71	19.06
5	2004	20.33	14.21	30.44	14.61	15.83
6	2005	5.15	7.00	26.05	13.34	12.71
7	2006	32.88	8.80	26.81	12.69	14.12
8	2007	54.28	6.91	30.09	11.97	18.12
9	2008	-54.68	8.58	20.25	11.59	8.66
10	2009	-30.07	6.05	14.56	11.04	3.52
11	2010	18.74	4.72	14.80	10.47	4.33
12	2011	-18.88	10.68	11.89	10.48	1.41

Table 4.2 contains the cumulative arithmetic mean of the annual returns computed from each year's respective January to December monthly returns.

Table 4.3 : ERP Using Geometric Annualized Monthly Returns

n	Year	Geometric Mean of Rm	Geometric Mean of Rf	ERP
1	2000	37.91	12.00	25.91
2	2001	38.28	12.95	25.33
3	2002	7.07	18.88	-11.81
4	2003	51.82	15.02	36.80
5	2004	17.13	14.21	2.92
6	2005	4.06	7.00	-2.94
7	2006	31.43	8.80	22.63
8	2007	53.05	6.91	46.14
9	2008	-58.54	8.58	-67.12
10	2009	-36.64	6.05	-42.69
11	2010	17.18	4.72	12.46
12	2011	-20.03	10.68	-30.71

Table 4.3 contains the geometric mean annual returns computed from each year's respective January to December monthly returns.

Table 4.4 : ERP Using Cumulative Geometric Average of Annual Returns

n	Year	Rm	Rf	Geometric Mean of Rm	Geometic Mean of Rf	ERP
1	2000	37.91	12.00	37.91	12.00	25.91
2	2001	38.28	12.95	38.09	12.47	25.62
3	2002	7.07	18.88	26.86	14.57	12.29
4	2003	51.82	15.02	32.69	14.68	18.01
5	2004	17.13	14.21	29.42	14.59	14.83
6	2005	4.06	7.00	24.91	13.29	11.62
7	2006	31.43	8.80	25.82	12.63	13.19
8	2007	53.05	6.91	28.94	11.90	17.04
9	2008	-58.54	8.58	13.67	11.53	2.14
10	2009	-36.64	6.05	7.21	10.97	-3.76
11	2010	17.18	4.72	8.08	10.39	-2.31
12	2011	-20.03	10.68	5.40	10.41	-5.01

Table 4.4 contains the cumulative geometric mean of the annual returns computed from each year's respective January to December monthly returns.

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Table 4.5 : Estimated ERP Using Arithmetic Average

n	Year	Annualized Arithmetic Mean	Cum Arithmetic Mean	Consensus ERP
1	2000	27.71	25.91	25.91
2	2001	26.79	25.62	25.62
3	2002	-10.93	13.14	13.14
4	2003	38.46	19.06	19.06
5	2004	6.12	15.83	15.83
6	2005	-1.85	12.71	12.71
7	2006	24.08	14.12	14.12
8	2007	47.37	18.12	18.12
9	2008	-63.26	8.66	8.66
10	2009	-36.12	3.52	3.52
11	2010	14.02	4.33	4.33
12	2011	-29.56	1.41	1.41

Table 4.6 : Estimated ERP Using Geometric Average

n	Year	Annualized Geometric Mean	Cum Geometric Mean	Consensus ERP
1	2000	25.91	25.91	25.91
2	2001	25.33	25.62	25.62
3	2002	-11.81	12.29	12.29
4	2003	36.80	18.01	18.01
5	2004	2.92	14.83	14.83
6	2005	-2.94	11.62	11.62
7	2006	22.63	13.19	13.19
8	2007	46.14	17.04	17.04
9	2008	-67.12	2.14	2.14
10	2009	-42.69	-3.76	-3.76
11	2010	12.46	-2.31	-2.31
12	2011	-30.71	-5.01	-5.01

From tables 4.5 and 4.6 any critical observer will notice the erratic profile of ERP estimation under the annualized monthly returns approach. The moving average approach produced better estimation hence the choice of its values as the consensus ERP. According to Fernandez (2011a), the average market risk premium used for the USA in 2011 by professors, analysts and companies were 5.7%, 5.0% and 5.6% respectively. Professors, analysts and companies that cite Ibbotson as their reference use market risk premium for USA between 2% and 14.5%, and the ones that cite Damodaran as their reference use market risk premium between 2% and 10.8%. Fernandez (2011b) exhibition of the market risk premium used by 56 countries in 2011 shows that it ranges from 22.9% for Iran to 4.5% for Malaysia. Damodaran (2002) used ERP of 5.5% in 1997. Copeland and Weston (1992) used ERP of 5%, Van Horne (1983) used 6%, and Penman (2003) used 6%. Weston and Brigham (1982) recommend 5-6% for practical application; Weston, Chung and Siu (1997) recommend 7.5% while Bodie and Merton (2000) used 8% for USA. From all these values, Nigerian case is exceptional may be because it is an emerging capital market with numerous challenges that warrant higher ERP. It is obvious here that the country risk profile casts a very big weight on the market risk premium as shown in the above tables. The factors that might have caused high market risk premium include the low purchasing power of potential investors in Nigeria, little or no savings culture among the residents, unpredictable volatile economy and inequality in information delivery among others. As a result of the financial incapacity of majority of potential investors, which warrant preference for current consumption over future consumption, savings culture/rate is very low. Consequently, ERP increases as scarcity of investment funds prevails in the economy. The unpredictable volatile nature of the Nigerian economy is another factor to reckon with. Inflationary pressure maintains upward movement and this has been keeping the monetary regulators on their toes making serious efforts to ameliorate the situation. The lack of sincerity and transparency of leaders at helm of affairs necessitated quite often policy somersaults, low confidence in the stock market. Furthermore, the high ERP can be linked to uncertainty in information quality and delivery, where firms provide little (and often flawed) information about operations and corporate governance, unlike other markets especially in developed economies where information on firms is not only reliable but also much more easily accessible to investors.

V. Conclusions and Recommendations

Attempt has been made in this study to include Nigeria in the map of researches on market risk premium with particular interest on historical equity market risk premium. In averaging, both the arithmetic and geometric means were explored. It was discovered that as it is in the literature, arithmetic average yields higher risk premiums than the geometric average as can be seen in tables 4.5 and 4.6. For the period 2000-2011, an arithmetic average risk premium, for stocks over T-bills of 1.41% and a geometric average risk premium of -5.01% were reported. The values for other years can be seen in tables 4.5 and 4.6. Based on the computations and analysis carried out in this study, it is hereby recommended that the Cumulative Arithmetic Mean type of averaging the returns should be engaged in the determination of market risk premium, especially in the emerging stock markets as it yields the best result.

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